

C O N T E N T S

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ANNUAL REPORT
OF THE
Department of Agriculture.

For the year 1931-32.

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ANNUAL REPORT
OF THE
DEPARTMENT OF AGRICULTURE

For the year 1931-32.

The department remained in charge of Mr. C. V. Sane, B. Ag. (Bom.) B. Sc. (Kansas), M. Sc. (Wisconsin), U. S. A. during the year except for the period of leave from 6th May 1932 to 26th June 1932, when Dr. Likhite was in charge.

(a) Dr. V. N. Likhite, B. A.; B. Sc. (Bom.) D. Sc. (France) continued to work with the designation of Dy. Director of Agriculture, Baroda District, with the Baroda Agricultural Experimental Station in his immediate charge. He is also working as officer in charge of the Cotton Root Rot Scheme undertaken by the department in co-operation with the Indian Central Cotton Committee since February 1932.

(b) Mr. R. S. Patil B. Ag. (Bom.); B. Sc. (Edinburgh) a probationer in the department has now been absorbed and appointed Superintendent, Agricultural Experimental Station, Baroda by Huzur Order No. 43/2 dated 8-3-32.

(c) In Annexure A., are given the important posts in the Department with the cadre and incumbents thereof.

2. The working of the department falls into two main sections:—

Administrative and
Technical functions.

- (I) Administrative.
- (II) Technical.

(I) ADMINISTRATIVE.

3. The inspection of the different institutions in charge of the department, could not be undertaken owing to the heavy administrative work that had to be done in connection with the new important schemes that were inaugurated during the year.

(a) It may also be noted that the already insufficient staff at the Head Office had in addition to the usual heavy routine work to engage itself very seriously in connection with departmental and other work regarding the new schemes. The strain on the staff became still more pressing on account of the fact that considerable illness continued for a long period in the office.

4. Most of the institutions in charge of the department were visited from time to time by the Director, technical work was looked into and suitable instructions through visit notes or otherwise were issued as required.

5. In addition to the usual touring in the districts for the purpose of inspection and propaganda work, the Director paid visits to Bombay, Poona, Cawnpore, Lucknow, Patna etc. in connection with various schemes on hand or intended to be taken up.

Annexure B shows in detail the touring of the Director.

6. The total number of pending papers with the balance of the last year numbered 10,465, out of which 10,377 papers were disposed off, leaving a balance of 88 papers at the end of the year, as mentioned in the statement below with comparative figures of last two years:--

Year.	Balance.	Received.	Total.	Disposed of.	Remained on hand.
1	2	3	4	5	6
1931-32...	131	10,334	10,465	10,377	88
1930-31...	87	9,730	9,817	9,686	131
1929-30...	80	9,173	9,253	9,160	87

Annexure C shows the details of the correspondence dealt with during the year under report.

7. At the end of the last year 6 proposals remained pending. During the year 68 new proposals were submitted. The statement below gives the details of the proposals for the previous two years for comparison:—

Year.	Sanctioned.	Not sanctioned.	Sanctioned with modifications.	Returned without orders.	Pending at the end of the year.	Total.
1	2	3	4	5	6	7
1931-32	39	12	13	4	6	74
1930-31	32	16	6	6	6	66
1929-30	40	7	13	5	6	71

8. The Director of Agriculture continued to represent the Baroda Government on the Indian Central Cotton Committee and attended its meetings.
 Attending cotton and Advisory Board meetings.

(a) The participation of the Baroda Government as a constituent State of the Imperial Council of Agricultural Research having been accepted by the Government of India, we were allowed to depute two representatives to the Advisory Board Meeting held at Simla from 18th to 23rd July 1932 and the Director and the Dy. Director of Agriculture attended as representatives.

9. The Annual Departmental Conference of the Veterinary and the Agricultural sections along with a joint meeting of the staff of the Co-operative department was held from 7th to 9th April 1932. Both the conferences were presided over by the Development Commissioner, Dr. S. M. Pagar. The work done during the year was discussed and a programme was

outlined for the ensuing season. A special feature of the conference was interesting discussions regarding the outline of work to be carried on at the new Rural Reconstruction Centre at Kosamba.

(a) His Excellency the Dewan Saheb honoured the joint meeting by his presence and helped its deliberations by a sympathetic attitude and a constructive lead.

10. Three new schemes were launched during the year under report. (1) The opening of a rural reconstruction centre at Kosamba, (2) study of the cotton root rot problem at Baroda, and (3) comparative field tests of 1027 and 1 A cotton in cultivators' fields in Navsari District. These will be described in detail in the respective sections. The last two of these are largely financed by the Indian Central Cotton Committee. (4) A small poultry section was added to the Baroda Farm in connection with the Agricultural School at the Baroda Farm.

11. Two officers of the department were deputed to Lucknow for poultry study. The Veterinary Inspector was sent to Mysore to study the Serum Institute, introduction of serum simultaneous method of inoculation against rinderpest and the organization of veterinary service. His report has been received and is now receiving consideration.

12. His Highness the Maharaja Saheb having desired that the department should assist fruit growers more actively and take steps to bring to the notice of Government for suitable appreciation such persons as may have attained some distinction in that line, Government have appointed a committee with Col. Shivraj Singh as President and the Garden Superintendent and the Director of Agriculture as members to consider the whole question of encouraging fruit tree cultivation in all its aspects. A suitable questionnaire to elicit public opinion has been published and recommendations will be made to Government in the light of suggestions received.

(a) Committees were also instituted to report to Government how the cultivation of sugarcane can be further extended in the State and the possibility of sugar-making in view of the high import duty now levied against foreign sugar. The reports have been received and suitable orders have been passed thereon by Government to encourage extension of sugarcane cultivation, and to test the possibility of sugar manufacture on a cottage industry basis.

13. Of the 14 applications for tagavi for oil engine and pump and tractor, 13 amounting to Rs. 30,100 were recommended. Of these, 9 loans of Rs. 18,000 were paid during the year. Details are given in Annexure D.

14. The total expenditure and receipts of the department for the last five years are shown in the statement below:--

Serial No.	Year.	Expenditure.	Receipts.	Remarks.
1	2	3	4	5
1	1931-32 ...	1,73,172- 2- 0	32,997- 6-10	
2	1930-31 ...	1,62,734- 0- 5	34,726- 5- 2	
3	1929-30 ...	1,75,892- 9- 2	35,964-10- 4	
4	1928-29 ...	1,66,101- 1- 8	40,277- 7- 6	
5	1927-28 ...	1,51,734- 0- 7	30,534-13- 9	

15. The expenditure and receipts for 1931-32 under different heads are given in the statement below:--

Financial statement
for 1931-32.

Serial No.	Item.	Expenditure.	Income as receipts or contribution.
1	2	3	4
1	Head Office.	29,136- 5- 0	8,013-13-11
2	Agricultural Engineering.	19,233- 9- 0	2,630- 6-10
3	Agricultural Experimental Stations.	29,619-10- 6	9,202-14- 0
4	Palace Dairy.	26,779- 3- 9	13,112-12- 1
5	Propaganda.		
	(a) Extension.	11,036- 6- 5	11-11- 0
	(b) Education.	5,222- 3-10	...
6	Veterinary.	38,437- 3- 6	...
7	Dy. Director of Agriculture's office.	7,727- 6- 1	...
8	Rural Reconstruction Centre.	5,980- 1-11	25-13- 0
	Total.	1,73,172- 2- 0	32,997- 6-10

Details are given in Annexure E.

(II) TECHNICAL.

16. The activities of the department may be divided into three main sections:—

Working of the department.

- (A) Agricultural.
- (B) Agricultural Engineering, and
- (C) Animal Husbandry.

(A) AGRICULTURAL.

17. The rainfall may be regarded as satisfactory in Baroda and Navsari although characterised by heavy precipitation and bad distribution specially the late rains. In Baroda the monsoon commenced on 15th June and a total fall of 55.60 inches was recorded. This was considerably more than the

average. In August 26.05 inches were received the second fortnight giving 17.15 inches. The season extended right into October and there was some rain in November too. In Navsari the season had commenced in the last week of June and 72 inches were received during the course of the season. Out of the heavy falls of the year one was of 10 inches on July 2nd. In Mehsana, there was not much of rain in the early part of the season, but once it commenced it rained for nearly a month. The total fall amounted to 35.25 August giving 26.70 inches in 24 days. After this there was a gap of nearly a month followed by some rain in October. The season in Amreli may be considered as feeble all along. The rainfall as recorded on the farm was 15.15 inches. Even the Kharif crops had to be irrigated where possible owing to a long break in September. The second fortnight of October gave 3 inches causing damage to Kharif harvests although helpful for rabi cultivation. Rainfall figures are given in Appendix I.

(a) *Crop conditions*:—In the Baroda District the Kharif crops were badly damaged and winter crops did not thrive well due to lack of good cold. In the Navsari District all the Kharif crops were more or less seriously affected except rice but rabi crops were good. In Mehsana, the Kharif harvest in general was poor although cotton was good. Rabi crops did fairly well. Kharif crops in Amreli even with irrigation did not do well. The rabi harvest was somewhat better and helped to ease the situation.

(b) *Insect pests and diseases*:—In Baroda and Mehsana there was some trouble of Katras but the attack was not very severe in general. There was serious damage by wheat rust in Mehsana and Amreli.

18. In the Agricultural section the following activities may be enumerated:—

Activities in the Agricultural section.

- (1) Research and investigations.
- (2) Agricultural Stations.
- (3) Propaganda, and
- (4) Agricultural Education.

(1) RESEARCH AND INVESTIGATIONS.

19. For the first time in the history of the department it has been possible to take up genuine Cotton Root Rot research work owing to financial assistance from the Indian Central Cotton Committee. As representative of the Baroda Government the Director had already drawn the attention of the Indian Central Cotton Committee to the very serious damage caused by root rot in cotton. During the year under report this has been worked at 29 to 92 per cent of the area under cotton on the Baroda Farm. The Cotton Committee convinced of the necessity of research in the direction, made a preliminary grant of Rs. 20,000 for the first two years, as their contribution, the Government of Baroda meeting the expense of the Chief Mycologist in charge of the scheme. The necessary administrative preliminaries were soon concluded and the scheme was launched in February 1932. Suitable laboratory facilities were secured near the Baroda Farm, and an area of more than 10 acres was set aside from the farm to carry on the investigations. The Baroda Government as mentioned earlier spared the services of the Dy. Director of Agriculture, Dr. V. N. Likhite, as Chief Officer in charge of the investigation and his expenses are being met from the department. The other technical staff on the scheme include a Cotton Breeder and two graduate assistants in each of the mycological and breeding sections.

(a) *Outline of Research work*:— The programme of work is based in two main directions (1) study of the life history of the Pathogene responsible for the root rot and (2) selection of cotton strains immune or resistant to this disease.

(b) *Expenditure*:— The total expenditure upto July 1932, on behalf of the Cotton Committee came to Rs. 5,311-5-4.

20. The Dy. Director is placed in direct charge of the Baroda Farm and Baroda District by Council Order No. 43/15 dated 4-5-31 and is mainly engaged on the cotton root rot research. He did some work on the Bajri smut also and has come to the conclusion that unlike the common

smut in Jowar where the disease gets entrance in the seedlings, the infection of Bajri smut takes place at the fertilization period.

(a) *Expenditure* :—The total expenditure on account of the Dy. Director's office came to Rs. 7,727-6-1.

COMPARATIVE FIELD TESTS.

21. Although 1027 strain of cotton has been accepted as the standard cotton to be distributed south of Nerbudda, considerable difficulties have been experienced in its general adoption, owing to an earlier Bombay departmental distribution of 1-A type competing with it. The latter has higher ginning but the cotton is not as good in quality as 1027 but the premiums are not enough to compensate for the difference in ginning and there is a greater and greater demand for the supply and surreptitious extension of 1-A. In order to find out the comparative value of these two strains, elaborate field tests are being carried out in British Gujarat.

22. As we have as large an interest as British Gujarat in the right type of cotton to be distributed in these parts, the matter was represented to the Indian Central Cotton Committee and they sanctioned an amount of Rs. 4,200 for taking similar tests in the Navsari District.

Contribution of Rs. 4,200 from the Indian Central Cotton Committee.

23. To carry out these tests a post of "Supervisor Cotton tests" was created and an experienced man from the Bombay Department, recommended by the Director of Agriculture, Bombay Presidency, was appointed. He began work from 15th April 1932, and has been given the help of 7 fieldmen, Kamgars—who are each to be paid a lump sum of Rs. 100 to 120 for the season by this department. All other expenses are to be met from the contribution of Rs. 4,200 from the Indian Central Cotton Committee referred in para 22.

24. For this, seven centres were selected for the tests covering an area of $52\frac{1}{4}$ acres. The number of tests laid out are 27. These tests are being carried out on cultivators' fields, the cultivators receiving a subsidy of Rs. 5 to Rs. 8-8-0 per acre. The cultivators are also further promised rewards in cash for growing the crop in the tests in as good a manner as possible. A few enthusiastic farmers have willingly given their fields without subsidy. These will receive certificates for the help they will be giving in carrying out the trials.

25. The following seven centres and 27 fields have been selected for the purpose of these tests on a payment of Rs. 5 to 8 per acre to the cultivator. The tests are laid out in areas of about 8 gunthas each replicated five times in each field. The season has hampered sowing and other operations in some cases but the tests are generally progressing well. As far as possible local methods of sowing and cultivation have been followed. The table below shows the distribution of these trials:—

S. No.	Village.	Taluka.	No. of tests.
1	2	3	4
1	Welanpur	Mahuwa.	3
2	Kurel	Do.	4
3	Parthan	Navsari.	3
4	Umbhel	Kamrej.	4
5	Kapura	Vyara.	4
6	Kosamba (Tarsadi)	Mangrol.	4
7	Mangrol	Do.	5
	Total ... ..	...	27

26. The expenditure incurred upto the end of July came to Rs. 791-3-6 and is met from the funds sanctioned by the Indian Central Cotton Committee.

Expenditure.

2. AGRICULTURAL STATIONS.

27. The Department has three agricultural stations situated at Baroda in the Baroda District, at Jagudan in the Mehsana District and at Amreli in the Amreli District.

Agricultural Stations
in the State.

(1) BARODA AGRICULTURAL EXPERIMENTAL STATION.

28. This station is situated at Baroda about a mile from the railway station, on the road to the Alembic Chemical Factory. The soil of the farm is largely Gorat i. e. sandy loam. The total area is 84 acres of which generally 67 acres are under cultivation the rest of the area being occupied by buildings, roads, etc.

Area, soil and object.

(a) The station is mainly utilised for carrying out various crop, manurial and other tests. There is a horticultural section and an annual agricultural class with a poultry adjunct that has recently been added.

(b) The principal crops grown are cotton, bajri, sundhia gawar, lucerne, wheat, onions, tobacco and vegetables. An area of about 13 acres under fruit culture the guavas forming the principal commercial crop. Details of crops are given in Appendix. II.

29. Rain commenced on 16th June with a fall of 3.96 inches. The total amount for the year was 55.60 inches. Except for a break of about a fortnight after the first rains the season took the form of almost continuous wet weather which extended right into October and November. The number of rainy days was 65 and the distribution was as follows:—

Season.

S. No.	Months.	No. of rainy days.	Amount in inches.
1	2	3	4
1	June	1	3.96
2	July	18	16.29
3	August	27	26.05
4	September	7	5.04
5	October	10	3.79
6	November	2	0.47
	Total	65	55.60

Details of rainfall are given in Appendix. III.

30. In general the distribution of the rainfall was such that the crops had not sufficient time to make a proper growth. The preparation of land for the rabi crops was also seriously hampered. Wet weather at maturity and harvest time damaged the kharif crops very badly. The rabi crops too, did not do well owing to the lack of good cold.

31. Pests-Katras appeared but did not do serious damage as the number was small. Boll-worm in cotton was more prevalent than last year and was responsible for the bad quality, specially of the first pickings. Orange-moth proved a very disastrous pest in Mosambi plantation nearly the whole crop having dropped down as a consequence.

(a) Diseases:—Smut and downy mildew in bajri were rather bad; root rot in May sown cotton affected almost 90 per cent of the crop and a very serious attack of rust appeared in wheat.

32. The yields of the crops were as a result generally poor. The statement below shows some crop yields on the farm.

S. No.	Crop.	Area.	Average yield per acre.	Maximum yield per acre.
1	2	3	4	5
		A. G.	Lbs.	Lbs.
1	Cotton ...	6-28	635	945
2	Bajri ...	6-26	516	839
3	Castors ...	3-10	432	2,307
4	Wheat ...	3- 9	1,300	1,389

33. The special work on the farm during the year consisted of:—

Special work on the farm.

- (1) Fertilizer tests on cotton, bajri, tobacco, wheat in collaboration with the Imperial Chemical Industries and with Indian Central Cotton Committee on cotton.
- (2) Cultural tests on May sown cotton and Pusa 4 wheat.
- (3) Horticultural work.
- (4) Miscellaneous tests.

34. *Cotton*:— The results of tests with Bone-meal Ammonium Sulphate, castor cake were vitiated by the unfavourable season, root rot and other factors. The root rot factor has become so serious that it has been now decided that no fertilizer tests on cotton should be undertaken until that question is solved.

(a) *Bajri*—Though the crop yield was seriously affected owing to unfavourable weather conditions the trend of the last seven years results that super-phosphate alone gives better yield than in combination with Sulphate of Ammonia was confirmed during the year of the report also. To further confirm this result, more elaboration replicated tests have been laid out and results are awaited with interest.

35. The cultivation of Pusa 4 wheat which has been found suitable for gorat soils and as a possible crop to replace tobacco is being maintained on the Farm. During the year the wheat crop was so badly attacked by the rust that even when grown under the best of conditions viz. kharif fallow land treated with green manure of Sann it gave only 1389 lbs. per acre. (Appendix No. IV.)

36. The year under report completed the stipulated period of three years, laid down for the Imperial Chemical Industries tests complete a cycle of three years. fertilizer tests on cotton, bajri, tobacco and wheat in collaboration with the Imperial Chemical Industries Ltd. The results of 3 years have been summarised in a consolidated report by the Superintendent and are given in Appendix V.

The following inferences may be drawn from the report:-

(a) *Cotton*:-a dose of 150 lbs. of Sulphate of Ammonia or 100 lbs. of Leunaphos has been found to give the best result having shown an increase of 62 per cent over control on the average of three years. However, a detailed examination of the results would go to show that leunaphos, which contains Phosphoric acid would be better than sulphate of ammonia. It may be noted that since recently a new fertilizer Niciphos having its phosphoric acid in a more available state has replaced Leunaphos.

(b) *Tobacco*:-In the case of this crop though the dose of 250 lbs. of Sulphate of Ammonia as against 150 lbs. gave the largest increase of 40% over the control and largest economic result, this increase has not been commensurate either with the increase of the quantity and cost. It must therefore be said that tobacco will give the best result with a dose of 150 lbs. sulphate of ammonia.

(c) *Bajri*:-It was found that on the average 120 lbs. of Sulphate of Ammonia had given the best result, but as in the tobacco crop the increase as against a dose of 80 lbs. was not commensurate with the larger quantity of the fertilizer. Hence with 5 cart loads of farm yard a dose of 80 lbs. of Sulphate of Ammonia is to be recommended.

(d) *Wheat Pusa 4*:—This crop was taken as a second crop after bajri and doses of 120 and 200 lbs. of Sulphate of Ammonia were tried. For a good crop of wheat good cold seems quite essential. During the first year of the test the season was very favourable for wheat and large economical yields due to fertilizer treatment were obtained. The second year was much less favourable and in the third year the crop was almost a failure owing to very severe rust attack. Though the dose of 200 lbs. was found better than that of 120 lbs. it would be advisable to recommend the dose of 120 lbs. per acre for wheat on the same ground as in the case of tobacco and bajri. It may also be noted that the phosphoric acid in Leunaphos did not prove useful for either bajri or wheat.

(e) *Indian Central Cotton Committee tests*:—with reference to the fertilizer tests with niciphos on cotton, these were continued during the year under report. The two years' results have been very conflicting and not much useful inferences can be drawn. The tests were laid out to cover a period of six years but the root rot in cotton has been so severe and such a vitiating factor in fertilizer tests in cotton that it has been now decided that no tests on cotton should be undertaken until this serious problem has been well tackled and brought under control.

37. Annually on the farm a green crop of Sundhia is ensiled. The year's result was 83% of good silage. The result is tabulated below:—

Date of filling.	Quantity filled sundhia lbs.	Date opened.	Net silage fed to cattle.	Per cent.
1	2	3	4	5
28-9-31	16,000	26-4-32	13,380	83%

38. There is a horticultural section on the farm occupying an area of nearly 14 acres. The Horticultural work, section has guava, chickoo, mosambi, orange, figs and grape vine. The first of these fruit plantations viz. guavas is an important commercial asset of the farm. It has at the same time been useful for supplying the public with reliable seedling plants raised from selected trees and fruit. The chickoo plantation is mainly of trees from the Gholvad grafts. During the year though the bahar was good the yield was not so good as last year. This year 35 trees had 968 fruit as against 1456 in the last year. Mosambi plantation bore heavily but the orange moth proved very destructive.

(a) The orange trees have been growing very well but no sufficient fruiting has yet taken place. To avoid the moth trouble efforts are being made to obtain Mrig bahar for both the orange and mosambi plantations.

(b) *Figs*:—During the year 75 trees were in fruiting but some of them have not yet fully grown and had only a small number of fruit. The quantity of fruit obtained was 169 lbs. and the quality was much better than last year, as also the size. It may be said that fig cultivation is promising and it has been decided to put up a new plantation in one acre plot next season.

(c) *Grape vine*:—No promising results have been yet obtained in the case of the grape vine.

(d) The farm nursery raised and supplied 1,668 fruit and flower plants to the public of the value of Rs. 425-15-0. Some details are given in the table below:—

S. No.	Item.	Quantity.
1	2	3
1	Guava	657
2	Lime	178
3	Mango	248
4	Others	561
5	Flower plants mainly roses	831
	Total ...	2,475

39. No new implements were tested during the year. Hand hoe disc-harrow, chain pump, and cultipacker were rented out. The Fordson Tractor and power implements were as usual usefully employed for general cultivation on the farm.

Implements and machinery.

40. In the general service rendered by the farm may be included (1) the inquiries received which were 134 during the year as against 87 of the last year, and (2) the seeds and fertilizers supplied over 3,000 lbs. of seed and 400 lbs. of fertilizers being thus supplied.

Items of general interest.

41. The work of mass selection in bajri, tali, onions, and attempts to raise seed of pedigree were continued and some good results are expected.

Selection of seed.

42. Visitors to the Farm numbered 114. Besides, every week a batch of 40 to 50 students of the Male Training College paid a visit. Of the other visitors a mention may be made of the Director of Agriculture, Bombay, Mr. Henry C. Taylor, Agricultural Economist U. S. A. and Mr. J. H. Ritchie, Secretary Indian Central Cotton Committee.

Visitors.

43. Though no regular demonstrations were held on the Farm, interested cultivator-visitors were always shown the working of the different implements, nursery work and other items of general interest.

Demonstrations.

44. The working of the institution has become involved into many side activities as the agricultural school and poultry adjunct. The total expenditure on the farm proper came to Rs. 16,548-8-8 and the receipts totalled Rs. 5,857-12-10.

Finances.

(a) Other statements regarding prices of farm produce, wages etc., are given in Appendices VI & VII.

(2) JAGUDAN AGRICULTURAL STATION.

45. The Mehsana District has a large area under wheat and the usual variety grown is very susceptible to rust. Hence various Pusa strains have been introduced in this area. The Jagudan Station is therefore, mainly utilised for keeping up a pure supply of these strains. The station is situated near a railway station of the same name, 7 miles from Mehsana towards Ahmedabad side. It has an area of 30 bighas i.e. about 18 acres of sandy soil. The area is divided into two blocks one of 25 and the other of 5 bighas.

46. The rainfall for the year was 35.25 inches as against 16.03 of the last year. There was practically no rain in June; July gave only 2.47 inches; there was continuous rain in August followed by a break in September and the season extended into October. The statement below gives the distribution of the rains:—

S. No.	Month.	Rainy days.	Rainfall inches.
1	2	3	4
1	June	1	0.25
2	July	7	2.47
3	August	24	26.70
4	September	4	3.8
5	October	6	2.75
	Total	42	35.25

Details of Rainfall are given in Appendix VIII.

47. The very late beginning of the season had necessitated starting of Kharif crops like bajri with irrigation where such facilities were available. Later the Kharif crops were spoiled by the continuous rain in August. But the season proved good for cotton, tobacco, chillies castors, etc. The winter crops did not thrive well owing to lack of good cold at the start of the crops.

48. During the year under report there was a severe attack of rust in wheat. While the local Wajia suffered very badly the Pusa type on the farm was free of the disease. The same was the case with the crops grown in the district with Pusa seed from the farm. The Pusa wheat on the farm yielded 1833 lbs. per acre on the average.

(a) *Cotton*:—During the year under report a test to compare Vagad No. 8 and Broach No. 9 had been laid out. Both the crops grew well but the latter had to be given three irrigations in November, December and January. Also the crop was badly attacked by wilt. The Vagad gave 1582 lbs. and Broach No. 9, 1544 lbs. seed cotton per acre.

(b) The fertilizer tests on cotton, bajri, wheat and chillies did not result in any promising prospects for the successful use of the fertilizers in the sandy soil of the place.

(c) Lucerne is likely to attract the attention of the cultivator as a nourishing fodder for cattle. A crop of the same grown on the farm during the year gave 18,740 lbs. of the crop per bigha (1.7 Acre.)

(d) *Miscellaneous crops*:—An attempt is being made to see if potato, turmeric, ginger could be grown on the soil that is available on the station. Details regarding crops cultivation are given in Appendices IX & X.

49. The out-turns of the principal crops grown are given in the statement below:—

S. No.	Crop.	Area in bighas B. V.	Average out-turn per bigha lbs. 1931-32.
1	2	3	4
1	Bajri	5-10	380
2	Wheat	4-15	1,160
3	Cotton	3-10	946

1.7 Bighas make an acre and a Vasa is 1/20 of a bigha.

50. To the station is attached a horticultural section including lime, oranges, figs, chickoos and papaya. The lime plantation has been doing well and has attracted the attention of those interested in fruit culture. The plantation is used for preparing grafts and seedlings for supplying the demands for them. The orange plantation is nearly 18 years old. From 1919 to 1925 the trees had yielded very well. But since then the orange moth has been proving a very destructive pest year after year. During the year under report though the fruiting was heavy most of it was destroyed by the above pest. The chickoo and figs have been recently planted and seem to be doing well. The papaya plantation has proved quite a success in this tract. And there is always a large demand for reliable seed from the farm. The papaya trees on the farm gave 16,083 lbs. of fruits per acre.

51. *Nursey*:—A small section is maintained on the farm. It caters for the demands for fruit plant grafts or seedlings. But in view of the increasing interest in fruit culture the nursery of the farm is too small to meet the requirements. It is therefore necessary to increase the area of the farm.

(a) *Visitors*:—During the year under report 250 persons visited the station.

52. The working cost of the station during the year was Rs. 5,053-13-1 and the receipts were Rs. 1,879-6-0.

Expenditure and receipts.

3. AMRELI AGRICULTURAL STATION.

53. This station is in the Amreli District. It is situated at Amreli about a mile from the station and town. The area of the farm is divided into two blocks by an important road to Lala-wadar passing through it. It comprises an area of 67 bighas i. e. about 39.5 acres. The soil is medium black with underlying murum. The depth varies from six inches to two feet and this variation is wide and very uneven. There are three wells but only two have sufficient water supply for use.

Area, soil and object.

(a). The work on the station is mainly directed towards carrying out of tests intended to indicate possibilities of improvement in crops grown in the district. A horticultural section is attached to the farm to find out the suitability of the tract for such fruits as lemons, mosambi, santra, papaya, figs, grape vines and pomegranate.

54. The monsoon of the year was feeble. The total rain was 15.15 inches. Excepting a couple of a fairly heavy rains in October most of the rain was made up of a few cents a day which was insufficient for vigorous plant growth. There were 2.29 inches in July in very small amounts in 13 days widely spread over the period, August gave 5.68 that also was widely spread. A long break followed in September but rain extended into October, when 3.82 inches were received. The uneven distribution will be seen from the following table :—

S. No.	Month.	Rainy days.	Amount 1931-32.
1	2	3	4
1	June	3	0.35
2	July	13	2.29
3	August	17	5.68
4	September	7	2.93
5	October	8	3.82
6	November	1	0.08
	Total	49	15.15

Details of the rainfall of the year are given in Appendix XI.

(a) *Crop conditions* :—As there was not sufficient rain in July not much sowing could be done. However, not to loose a crop, cotton sowing were done with what moisture was available. The crops were helped by occasional small falls but the long break in September necessitated irrigation of the bajri. This and some rain then gave hopes of fairly

good harvest of khariff crops until the heavy fall in October badly damaged the crops. This heavy rain proved a blessing in disguise, as these late rains helped the rabi crops of til and gram and resulted in a good harvest of rabi crop.

55. *Cotton* :—The Dhulia No. 1 having been found decidedly superior to the local Mathio, only that strain is grown on the station to keep up a supply of pure seed. However Jalgaon, Verum and Mathio are grown on a very small scale to serve as an object lesson. Lalio and Wagad are not now kept up as the strains were found unsuitable to the conditions of the tract. Early sowing of cotton in May is being tried.

(a) *Bajri* :—Two types Baroda and local are being tried. During the year the local yielded 229 lbs. as against 175 lbs. per bigha of the Baroda type.

(b) *Groundnut* :—The trial of pea-nut, Small Japan, Pondicherry and Big Japan was continued. So far the experience is that the small seeded varieties are better than the large seeded ones. Results will be considered after the tests cover a sufficient period.

(c) *Jowar* :—As any late type is unsuitable to the season of the tract, the test of imported types have been dropped and improvement in the local variety is being tried by selection and grading of grain.

(d) *Wheat* :—Pusa 4 and 52 strains and Deccan 162 have been under trial to find out their suitability to replace the local red and white types. The yields of these types are tabulated below ;—

S. No.	Type.	Out-turn per bigha lbs. 1931-32.
1	2	3
1	Pusa 4	284
2	Do. 52	444
3	Deccan 162	446
4	Local red	569
5	Do. white	290

(e) *Sugarcane*:—The testing of varieties H. M. 544, D.109 striped mauritius, local red and white was continued. The imported types are tending to become popular. One of the results of the cane growing on the station has been the demonstration that cane can be grown once in three years in the same field with suitable rotation and manure, breaking down the prevalent belief that a crop of sugarcane cannot be taken in the same field except at an interval of 15 years.

(f) A small area is allotted to the trial of such other miscellaneous crops like onions, potato, turmeric, ginger and yams.

(g) *Rotations*:—The results of the tests in this direction are not yet available.

Details of the cropping of the farm are given in Appendix XII.

56. Some crop out-turns of principal crops grown on the farm are given below:—
Some crop out-turns.

S. No.	Crop.	Area B. V.	Average yield per bigha. lbs. 1931-32.
1	2	3	4
1	Cotton	5-10	99
2	Bajari	6-15	321
3	Groundnut... ..	2- 0	264
4	Wheat	2- 0	396
5	Jowar	3- 0	360

57. Of the area of the farm 1 bigha is set aside for fruit culture. Lemons, mosambi, santra, guava, pomegranate, custard apple, figs, grape vines are being grown. A few mangoes of grafted types and chickoo are also planted. They are all doing well. Pomegranates, figs, guava and custard apple are very promising and bear fruit of good quality. The rest have not yet reached

Horticulture.

the bearing stage. The section has been attracting considerable attention from the public and a small nursery is maintained for supply of plants.

58. The Prant Panchayet has in its possession 10 bighas of land. This area is being used for growing pure cotton seed and raising fruit and shade tree seedlings. The management is entrusted to the Farm. During the year 617 plants were sold from this nursery as shown below:—

S. No.	Item.	Number 1931-32.
1	2	3
1	Neem	451
2	Mango	40
3	Gunda	24
4	Jambul	50
5	Sour lime	52
	Total	617

(a) The reason for the decrease in the number of mango seedlings is probably due to the unfavourable season for tree planting.

59. The utility of improved types of implements used on the farm was as usual frequently demonstrated to the visitors to the farm.

Implements — use Demonstrated.

(a) The power sugarcane crusher was demonstrated. The power gin on the farm was made available for cultivators to gin their cotton crop.

60. The expenditure incurred on the station was Rs. 8,017-4-9 and the income obtained Expenditure and receipts. Rs. 1,465-11-2.

(3) PROPAGANDA.

61. The work of the propaganda section of the Department is usually carried on mainly through three agencies viz. (1) the District staff-Agricultural Inspectors, (2) Demonstrations and Shows, and (3) Publications. To this has been added this year the rural reconstruction centre at Kosamba and it will be reported upon first.

Agencies for propaganda work.

(1) RURAL RECONSTRUCTION CENTRE.

62. For a long time it has been generally acknowledged that unless the rural problem is simultaneously attacked on all fronts affecting rural welfare a mere departmental handling of the problem by Development Departments would not go very far. The inter-relation of these must be borne in mind, brought home to the country side and efforts made to interest the village leaders in taking interest in all matters affecting their well-being.

Object.

63. A centre of this kind therefore was sanctioned and eventually opened at Kosamba (Navsari) from 1st February 1932. An experienced man from the Y. M. C. A. of South India Mr. Jacobi, has been put in charge of the Centre. Mr. Jacobi has had experience of this kind for a long time. He has further been given the assistance of an Agricultural Graduate Mr. D. G. Kelkar who had worked as Assistant Superintendent on the Baroda Farm for more than a year. He had also been sent to obtain practical training in subsidiary occupations at the summer classes of the Y. M. C. A. Ramnathpuram (Coimbatore) in South India.

A centre opened at Kosamba (Navsari).

64. The first item on the programme of the new scheme was the choosing of a suitable place for the centre. In co-operation with the Registrar Co-operative Societies and local Revenue Authorities, Kosamba in Mangrol Taluka of Navsari District after a thorough investigation was finally selected. A place near the Railway station

Preliminary work and opening of the centre by H. E. the Dewan Sahab.

belonging to Mr. Gopalji K. Desai, was obtained at an annual rent of Rs. 451. The place has buildings and a small area of agricultural land. The centre was equipped with materials for the beginning of a poultry section and a formal opening was kindly performed by His Excellency the Dewan Saheb who has been mainly responsible for initiating the rural reconstruction work in our territory.

65. The out-lines of work as decided on, are (1) setting up of village councils with a chief board for a group of villages, (2) putting up of useful sections at the centre to serve as a training place for the village population in subsidiary occupations like poultry, bee-keeping, weaving, printing and dyeing, kitchen gardening, etc., and (3) through the village council induce the rural population to take practical and active interest in all matters of their economic welfare leading to better sanitation, health, and citizenship and finally better economic condition. It is evident that the success not only depends on those working in this direction, but also on and mainly on the intensity of desire of the rural population to help in the uplift work.

66. An Advisory Committee of 8 members has been formed in Kosamba. This committee, has been already rendering every help to the centre. Ten villages have been explored by those in charge of the centre for organising councils and it is hoped that in the next winter these may be put into active work. A class for village boys has been opened during the present year. The number is limited to 10 students each receiving a scholarship of Rs. 6 p.m. Arrangements have been made to give them training in sanitation, hygiene, agriculture, co-operation, etc., and secondary occupations, like poultry, bee-keeping, weaving etc.

(a) *Poultry section*:—This occupies an area of 8,000 sq.ft. for 8 runs. This would be sufficient for accommodating 320 birds. The present strength of the section consists of 20 birds—12 white leghorns, 6 black minorcas and 2 local types. The observations so far go to show that white leghorns

would be more suitable for the tract than the minorcas. The statement below shows the egg laying of the different birds:-

Serial number.	Kind.	No. of birds, hens.	No. of eggs in 4 months April to July.	Average capacity.	Value.
1	2	3	4	5	6
1	White Leghorn (Etab) (W.L.)	4	167	41.7	9-13-9
2	Do. Baroda Farm.	5	196	39.0	6- 4-6
3	Black Minorca.	6	178	29.6	8-13-9
4	Country crossed with W.L.	2	49	24.5	1- 4-5

The average cost of feeding during 112 days came to about Re. 0-6-0 per bird per month.

67. The poultry section has attracted the attention of villagers in the neighbourhood particularly the mahomedan population. Poultry keeping has attracted considerable attention. The centre has been rendering useful help to them in the care of their birds and in a number of instances the centre has been responsible in saving a large number of birds belonging to those villagers.

68. Bee-keeping has been found a useful subsidiary occupation elsewhere and hence at this Apiculture section. centre also a section has been put up. Efforts were made to obtain a natural hive of *Apis Indica*-type suitable for artificial rearing-locally but the attempt not proving successful a hive of Indian bees was imported from Ramnathpuram (Coimbatore) the Y. M. C. A. centre of rural work. The hive since its location at the centre has made good progress and a good quantity of honey is expected in the coming winter. The section has created a good interest

and inquiries are being constantly received for setting up private apiaries. Efforts will be made to obtain from the Vyara forests natural hives of the Indian Bee and make them available for distribution to persons interested in setting up apiaries.

69. The centre has attracted wide attention of villagers round about and 760 persons from 26 villages visited the centre during the period from April to July.

A large number of visitors.

70. The work of this kind requires special facilities in the direction of sufficient clerical staff to deal with a vast amount of office work leaving the workers quite free to do the real work of extension and reconstruction. Further relaxation of very strict account and other rules is absolutely necessary in any work of this kind to make it successful. It is hardly necessary to lay a stress on the necessity of the co-operation of all departments, which has been and is being unstintingly given for which thanks are due to them particularly the local revenue authorities, Co-operative, Sanitary and Commerce and other departments.

Special facilities and co-operation of all concerned necessary.

71. The expenditure incurred on the centre during the year was as follows :—

Finance.

S. No.	Item.	Non-recurring.	Recurring.	Total.
1	2	3	4	5
1	Establishment ...	594- 3-6	4,151-14- 8	4,746- 2- 2
2	Poultry ...	1,017-13-6	161- 4- 6	1,179- 2- 0
3	Bee-keeping ...	33- 6-0	21- 7- 9	54-13- 9
	Total ...	1,645- 7-0	4,334-10-11	5,980- 1-11

(2) WORK BY THE DISTRICT STAFF.

NAVSARI.

72. This district grows the finest indigenous cotton in this country. It is therefore natural and desirable that the work in cotton should have received more emphasis than other activities. Principal propaganda work in this connection is to extend the cultivation of the suitable strain 1027 A. L. F., maintaining its purity and organising a constant supply of pure seed. For this purpose the post of Cotton Officer was created. For some time past the duties of this officer have been entrusted to the Agricultural Inspector of the district. Conditions have however arisen now which make the filling of the Cotton Officer's post necessary. The trade has been complaining for sometime that the Navsari cotton is degenerating and getting mixed. An enquiry in co-operation with the officers of the Bombay Department of Agriculture was therefore made with the result that considerable admixture of Goghari was found to prevail in some villages of the Navsari taluka.

(a) As a result of this enquiry and that carried out by the British Department in their sections a conference of gin owners and cotton merchants was convened at Surat on 3rd March 1932, by the Bombay Department. It was decided at the conference that (1) the purchasing merchants should give lower prices for the mixed crop, and (2) the departments should make arrangements to make available to the cultivators pure seed. In order to meet the resolutions so far as we were concerned orders for opening two seed depots were solicited and obtained and two depots were opened at Vesma and Maroli. The seed for these depots was obtained from the Bombay Department and we were able to distribute 59,400 lbs of pure 1027 seed from these stores. The cost of working these depots came to Rs. 2,005-7-9 and the transaction resulted in a net loss of Rs. 102-8-9, on expenditure incurred. This was due to the necessity of lowering the prices of seed according to the general market prices. The Navsari

Khedut Mandal was good enough to make a contribution of Rs. 68 towards the loss thus the net loss to the department comes to only Rs. 34-8-9. It may be noted that the amount shown above does not include the establishment cost which for the two depots was Rs. 108-3-11. Besides the above quantity 45,875 lbs. of seed was obtained by our cultivators from convenient Bombay Departmental stores thus bringing the total of pure seed obtained to 1,05,275 lbs.

(b) A casual enquiry of the wilt trouble in cotton which is particularly prevalent in Vyara and Kamrej talukas was made and possible methods of attack were indicated.

Appendix NO. XIII gives in detail the distribution of cotton seed.

73. The number of cotton sale societies that functioned upto the end of December 1931, was
 Cotton sale societies and help given. 17. Of these 7 according to the recommendation of the Co-operative department were given a subsidy of Rs. 300 from the Agricultural Improvement Committee's Funds. The societies of Parujan, Kapura, and others were given certificates of pure crop growing.

74. *Cotton* :—Every year some field tests to see if a fertilizer like Sulphate of Ammonia could be advantageously used for cotton are made. So far the experience had been that the effect of the fertilizer is not uniform owing to the variations of the season. Two such tests were laid out during the year with the same result. Hence it has been decided to drop such tests. However, the use of bone-meal for cotton according to the results of trials on the Baroda Farm, was tried during the year under report with a promising result. To further ascertain the usefulness of the manure, 4 trials have been put up in cultivators' fields in the present year.

Field tests of fertilizers.

(a) *Paddy* :—Though Sulphate of Ammonia is not very effective for cotton, it has been found very useful for paddy. The tests in the year under report further confirmed

the previous experience. 569 lbs. of the fertilizer had been distributed for these tests. Four of these tests showed that as a result of the use of Sulphate of Ammonia there was an increase of paddy from 4 to 14 maunds per bigha.

(b) The use of Sulphate of Ammonia for rice is now becoming general and 6,800 lbs. were supplied departmentally. There are other agencies no doubt which supply the manure direct to the farmer.

(c) *Onions*:—This crop responds to artificials very distinctly. Hence to popularise the use of these for the crop annually a number of tests were laid out. During the year in the 3 tests there was an increase of 30 to 100 maunds per bigha due to the use of Sulphate of Ammonia at the rate of 2 maunds i. e. 80 lbs. per bigha.

(d) *Sugarcane*:—Ammonium Sulphate for sugarcane has long been known to give very definite and heavy increases. In the 3 departmental trials on farmers' fields during the year this fertilizer used at the rate of 120 lbs. per bigha gave an increase of 25 to 30 maunds of gul per bigha. How the use of this fertilizer for the above and the other garden crops like parwar, plantains, etc. has been extended can be seen from the fact that 20,840 lbs. had been taken up during the year under report. Bone meal for fruit trees is being advised and 2,240 lbs. of this were used in the Vyara Taluka.

75. *Early Kolam*:—The local early type of rice is Kada but even this occasionally fails if the rains at the latter part of the season are not sufficient. To get a crop therefore earlier than Kada and to replace it with a better variety Early Kolam imported from Konkan is being advised with great advantage. In the 2 tests of the year the early Kolam ripened 10 days earlier than Kada and gave 6 maunds more yield per bigha. These tests were taken at Tantithayya in Palsana and Ponsra in Navsari. However, the increased out-turns are not uniformly obtained and the prices too, have often not been better than Kada. So it has been decided to try other strains of the Early Kolam—184 and 401. The seed of these has been distributed this season and results are awaited.

(a) *Kolam 42* :—This is a late type but much finer than the corresponding local variety. The extension of this was continued. Also 4 departmental tests were made. In two of these, where the local had also been grown for comparison 3 and 17 maunds increases per bigha were obtained. Besides, 818 lbs. were given departmentally for extension. Two more types of late but of finer quality *Kolam 226* and *412* are also being tested.

76. *Jowar* :—A reference to tests regarding a selection of the *Surat Farm-Budh Perio No. 53* was made in the last year's report. The results were not encouraging particularly because of the season being unfavourable for jowar. Hence further tests are put up during the present season.

77. *Sugarcane* :—In the *Gandevi, Vyara and Navsari Talukas* of the district sugarcane is extensively grown but no special care seems to be taken regarding seed stock. Consequently, the crop has been deteriorating and there is need for importing and testing better stock. Efforts are therefore instituted to see if varieties like *H. M. 89, C. O. 290, P. O. J. 2878* from the *Manjri Sugarcane Station* in the *Poona District* would prove suitable. Four tests have been laid out during the current season.

78. It is now three years that the farmers of the district have been taking to improved types of implements. The stimulus is being kept up by the annual subsidy given by the *Agricultural Improvement Committee*. During the year 16 implements were so supplied the number last year being 12. In this connection special reference must be made to the cotton plant puller. As a part of the campaign against the *Boll-worm* early and speedy removal of cotton stalk is being vigorously advised by the *Bombay Department of Agriculture* and a suitable implement has been evolved for the purpose. It is particularly useful in the black soil, we distributed 45 of these at the commencement. The implement has been found so useful that the

farmers have taken to it readily. It is estimated that 700 to 1,000 of these were purchased through other sources. Moreover, the local smiths too, have begun to manufacture them as part of their other village equipments. Appendix XIV.

79. The conditions of soil, climate and the seasons of the district are very favourable for fruit culture. In this district, some private nurseries too are situated. The department helps the extension by obtaining reliable fruit plants, giving advice regarding care, treatment for diseases or pests. During the year under report 150 fruit plants were departmentally supplied.

Specially favourable conditions for horticultural work.

BARODA.

80. *Bajri*:—The Baroda Farm has evolved by mass and general selection a useful strain of Bajri. During the year 5 field tests with this seed—3 in Baroda and 2 in Petlad Talukas were done. Except in the last place, the resulting crop was damaged by the heavy rains of the season. In Petlad, the test showed an increase of 80 lbs. per acre of the crop from the farm seed over the local crop.

Field tests of bajri, wheat and rice.

(a) *Wheat*:—Pusa 4 seed was given in two places at Desar, Savli Taluka. The crop was taken after the kharif rice. But the yield was only 8 maunds per acre due to a severe attack of rust.

(b) *Rice*:—Two years back a fine quality rice—Badshai bhog—was obtained from Bihar and tested at Dabhoi and Savli. But the strain proved to be a very late one and quite unsuitable to our season. Hence during the year 2 types—Kudai and Panvel from Konkan were imported and tried at Dabhoi and Karjan (Juni Jithardi). But the crop was entirely destroyed by the heavy and flooding rains, along with the local crop. On the Baroda Farm the strains yielded well, Kudai giving 1920 and Panvel 3136 lbs. per acre. More field tests with these types have been laid out during the present season,

(c) Kolam 42 was tested at Kothai in Sojitra but though the crop yielded well, and brought a good price it was found that the strain was a late ripening one and unsuitable to the place.

81. *Cotton* :--The extension of Broach 9 was continued on demand only. The Department makes available a stock of pure seed annually from the small area grown on the Baroda Farm with this type. 2,370 lbs. of pure seed was supplied during the year under report from the Baroda Farm and it is estimated that about 9000 lbs. were issued through private efforts. Attempts are being made to have registered seed growers and two such have agreed voluntarily to grow a pure crop and make available the resulting seed for distribution if necessary through the department. There was a total demand of 11,000 lbs. of seed for 1932-33. But this demand was received rather late and arrangements were made to supply at least a part through the two growers one at Dabhoi and the other at Motipura (Samlaya).

(a) *Pure crop growers at Dabhoi* :--A reference has been made in the last year's report to a conference at Dabhoi to devise a method for the extension of Broach 9 according to the desire of the prominent merchants of the place. As a result of this conference, half of the available pure seed was given at a reduced price to eight growers. These persons had voluntarily come forward to grow pure crops and distribute pure seed. They were, landlords, cultivators and gin owners. The result can be judged from the fact that the small price of the seed supplied had to be recovered from these well-to-do land-lords through the Vahiwatdar after almost a year.

(b) *Tobacco No. 6* :--No special extension work could be done. But enquiries were made at 2 places--Nar and Gorwa in Petlad and Baroda talukas to see the possibility of its extension. A separate report regarding the enquiry has been submitted by the Agricultural Inspector. It seems from this that no cogent reasons appear to exist for the discontinuance of the cultivation of the strain. At Gorwa 4 bighas of

the crop were grown and the grower had submitted a written report, making out the following points :—

- (1) the strain gives 2 to 3 maunds more per 1000 plants than the local;
- (2) it is of a better quality;
- (3) it should be planted wider than usual and that 1 to 2 waterings are necessary, and
- (4) that the prominent veins and thick stalk do not prove much of a difficulty in the disposal in the market.

(c) *Wheat Pusa 4* :—Though the variety has created general interest no rapid extension is possible. The difficulty is that, in a year of severe rust attack the type is not completely immune and that the type does not uniformly give a good yield as a second crop after kharif harvest, mainly due to conditions in which the kharif crop is grown.

82. No fertilizer tests were carried out as the results of those on the Baroda Farm were not yet available. It may be noted that during the present season a number of these have been put up.

(a) The Imperial Chemical Industries have been carrying out propaganda on a large scale for the spread for the fertilizers supplied by them. This has resulted in a very extensive and general use of these in the district. This will be seen from the following figures, for some of the places :—

Place.	Quantity.	Crop for which used.
1	2	3
Padra taluka ...	8,800 lbs.	Bajri, kodra, chillies and vegetables.
Baroda ,, ...	8,000 lbs.	Tobacco and vegetables.

(b) The fertilizer mainly used is Sulphate of Ammonia. The Company sold between 1st August 1931 and 31st July 1932, 36 tons of the above fertilizer and 5 tons of Niciphos. As there is no arrangement of a special departmental store, the department through the Baroda Farm caters

for the needs of persons with small and urgent demands. 403 lbs. of fertilizers were supplied during the year.

83. The general depression in crop prices and the very favourable seasons in recent years have given a general stimulus to fruit culture. Interest in horticulture on the increase. Annually increasing enquiries regarding fruit culture are received. 134 enquiries including 43 regarding fruit tree growing, as against a total of 89 in the preceding year were received and replied. The department supplied 1,644 fruit plants from the Baroda Farm and 48 from outside nurseries as against 1,198 in 1930-31.

84. Efforts to make trials of implements of improved types were made but in spite of promises made and implements supplied the persons concerned did not care to use them. There is a desire generally to make use of improved implements but the main difficulties that come in the way of a wide use of these are,

- (1) That the cost is generally beyond the means of ordinary farmer;
 - (2) Difficulty of transport from the village to the outlying field in the season;
 - (3) Limit to the use—a modern implement is designed for a particular purpose and for special conditions.
- (a) To meet the first difficulty the Co-operative Societies are advised to take trials of useful implements and a list of those suitable to different places is made available to them. The Baroda Farm annually rents out some implements. During the year half a dozen of these were so rented out. Moreover in the present season towards the end of the year under report 5 heavy and light ploughs and cultivator were sold through the department.

MEHSANA.

85. The District grows a large area under wheat and cotton and hence the departmental efforts are mainly directed towards the replacing of the local wheat Wajia which is susceptible to rust, with Pusa types which are not so, and also the local Wagad cotton with a better strain of it—Wagad No. 8. Extension of cultivation of Pusa wheat and Wagad 8 cotton.

(a) *Wheat*:— The efforts in the past have resulted in a wide extension of the cultivation of pusa variety. Therefore, a constant supply of pure seed from the Jagudan Farm in the district is maintained. The farm distributed mainly through co-operative societies 3, 200 lbs. of seeds as against 2, 720 lbs. in last year. Besides, 2, 400 lbs. from a pure seed grower and 2, 000 lbs. from the Dohad Farm were also given out, bringing the total to 7,600 lbs. In the year the Wajia suffered heavily from rust, the pusa remaining almost un-affected.

(b) *Cotton*:— Though no need arose to open depots for seed distribution as in the last year, 2, 000 lbs. of pure seed of Wagad No. 8 was obtained from Viramgam breeding station and distributed.

86. 1027 A. L. F. strain:— A reference has been made in the report of the last year about the promising result of a test of the above fine Navsari strain of cotton at Randheja. During the year under report 6,000 lbs. of this type was obtained from Surat and distributed to 3 persons including the Co-operative Society of Randheja. The resulting crops grown by them, though rather spoiled by untimely rain, gave an out-turn of 1,144 lbs. per bigha. This experience of the second year being fairly satisfactory further trials will be continued.

Tests of cotton 1027 and Broach 9 in suitable places.

(a) *Broach No. 9 strain of cotton*:— Tests with this strain in Dehgam Taluka have proved promising and further work will be taken up next year.

87. *Tobacco No. 6*:— A further test with this type at Chanasma in 10 bighas proved very satisfactory; and a demand for the seed was created. So arrangements were made to obtain 280 lbs. of seed enough for 1,000 to 1200 bighas and supplied in Chanasma.

Extension of tobacco No. 6 in Chanasma.

88. *Rice*:— Some seed of Kolam 42 was supplied to the Co-operative society of Meda-Adrej Taluka Kadi. The crop grown with this seed with the help of a watering or two yielded 1200 lbs. per bigha. The price realised for this was

Rice-Kolam 42 proves suitable in Kadi.

Rs. 2 as against Rs. 1-2-0 per maund for the local Elaychi type.

89. *Manure pits*:— Apart from advice on tour by the Agricultural Inspector, a special effort was made at the Sandar Co-operative Gathering.

Miscellaneous other activities.

(a) *Fertilizers*:— So far, fertilizers like Sulphate of Ammonia have not proved advantageous in the sandy soil of the district.

(b) *Smut in Jowar*:— There is a considerable area under semi-winter Jowar. The prevalence of smut is also on a large scale. Annually therefore, the copper sulphate treatment is advocated and a supply of the same is handed round in various places. This year too, in more than 12 villages the material was supplied. Moreover, under instructions of M. Suba Saheb a leaflet was prepared and distributed in all the villages. He also arranged to obtain estimate of the damage due to this disease in Jowar. This came roughly about 1,88,103 maunds. One pice per bigha for copper sulphate would prevent all this damage.

90. In this district too, the fruit tree growing has created a considerable interest. The chief demand is for sour lime plants. The papaya cultivation is growing rapidly. The Jagudan Agricultural Experimental Station caters for the public demands by supplying dependable papaya seed and reliable lime plants. During the year 635 plants of sour lime were given from the Jagudan Farm. In suitable places oranges, figs, chickleos are also being tried.

Horticulture.

91. Efforts to introduce improved types were made but the difficulties referred to previously in this report preclude general adoption. The Jagudan Farm rented out to 6 villages light ploughs during the year.

Difficulties experienced in introducing new implements.

AMRELI.

92. *Cotton* :—Dhulia No. 1 has proved itself very suitable to replace the local Mathio. Hence all attempts are directed towards securing its extension. This extension work is helped to a great extent by the pure seed growing association at Amreli. This Mandal had supplied 3,840 lbs. of pure seed to its members and it was expected that a very large quantity of seed would be available for supply in 1931-32. But the season turned out to be poor for the cotton crop and only a small quantity was available during the year. The total quantity of seed of Dhulia distributed in 1931-32, came to 8,370 lbs.—500 lbs. from the Amreli Farm, 1280 lbs. from the Mandal and 6,590 lbs. from private growers. This amount would make an area of 800 bighas of Dhulia cotton in the present season.

(a) *Wheat* :—Pusa 4 type has not proved very useful to replace the local varieties. The Deccan 162 strain is likely to prove more suitable. Some distribution of the seed of this type was made in Damnagar and Amreli Talukas. But further tests are continued on the Farm to definitely ascertain its superiority over the local.

(b) *Groundnut* :—A steady extension in cultivation of this crop is observed. As a result of tests on the Farm the small seeded types seem more suited than the others. Particularly Pea-nut variety has attracted attention and its cultivation is encouraged by making available good seed from the Farm. During the year 220 lbs. were supplied to farmers.

(c) *Sugarcane* :—Five types of sugarcane are being tested on the Amreli Farm. Seeds of those found suitable so far are also given out for trials. During the year under report 12,385 sets of good varieties were so distributed and the results are awaited with interest.

93. The subsidy offered by Government for implements continued to attract the cultivators and 12 light iron ploughs were taken up as against 17 during the preceding year. The results of the subsidy having proved very satisfactory, orders have been obtained to continue the offer for 2 years more. Appendix No. XV,

Implements-subsidy
found useful—12 iron
ploughs sold.

(a) *Poona furnace* :--This has now become a permanent feature in Kodinar Taluka. To further extend its use it was demonstrated in Dammagar and Amreli Talukas also.

94. The interest of the general farmer in fruit culture continued to be on the increase. The Horticulture. plantation of different trees—Mosambi, figs, lime, guavas, pomegranate etc. on the farm has been promising and through its success, a high expectation of pushing forward fruit tree growing in this practically tree-less tract are entertained. During the year 1,177 fruit plants as against 955 in 1930-31, were departmentally supplied.

95. Owing to the uncertainty of the seasons and lack of sufficient water supply the use of fertilizers is very limited. But it has been found that the use of Ammonium Sulphate for sugarcane is likely to be advantageous. Fertilizers useful for sugarcane.

(3) DEMONSTRATIONS AND SHOWS.

96. During the year the department availed of special opportunities at four places by putting Shows held. up stalls and arranging lectures and demonstrations at an expenditure of Rs. 971-15-6. Some details are given below:--

(1) *Industrial Exhibition at Baroda* :-- This had been organised by Messrs. Indian Art Exhibitors of Surat. The show was held at Baroda in December 1931. It continued for a period of 12 days from 3rd to 15th December 1931. A departmental stall with agricultural and other exhibits, depicting the activities of the department was put up. The expenditure incurred in this connection came to Rs. 116-7-0.

(2) Panchayet Week Celebration was held by the Navsari Mahal at Navsari, and Vesma in December from 15th to 22nd and the department participated by putting up a stall and lectures at a cost of Rs. 99-13-0.

(3) *The Agricultural and Cattle Show at Amreli* :--This show was much a larger function and organised by the Amreli Prant Panchayat and received a grant of Rs. 500 in addition

to expense incurred in putting up a departmental exhibit at the show costing Rs. 155-11-6. The show was held from 20th to 22nd February 1932.

(4) A Baby Week and Health Show was organised at Palsana in June 1932, and the department co-operated with a stall at an expenditure of Rs 100 or so and the Agricultural Inspector, Navsari arranged for demonstrating the activities of the Department with the help of the Agricultural Improvement Committee.

97. In addition to the set programmes described above some field demonstrations were held as a part of the propaganda work of the Department. The following deserve a special note in that connection:—

(a) *Navsari District*:—The mango trees generally suffer very severely from sugary disease and an insect pest of hoppers. Sulphur dusting has been found effective against these. With the special sprayer supplied by Agricultural Improvement Committee the method of using sulphur was demonstrated at departmental expense on trees in villages of Navsari, Gandevi, Palsana, Kamrej and Vyara Talukas. The cost of material per tree comes to one anna only. The number of trees sprayed was 262.

(b) *Baroda District*:—At Karkhadi in Padra Taluka a Brinjal crop had been seriously attacked by aphides and a chilli crop with mite. There spraying with fish oil soap for the brinjals and lime sulphur wash for the chillies were demonstrated in 4 bighas.

(c) *Mehsana District*:— In Sidhpur Taluka at Rajpur a field test of Pusa wheat had been laid out. In a field near by where the local Wajia had been grown the rust was very severe, while the Pusa crop was quite free. A demonstration was held in this field on 9th March 1932, and cultivators from 20 villages had been invited. About 100 farmers attended with the result that a demand of nearly 3,200 lbs of Pusa wheat was put in for the next season.

(d) A similar demonstration was arranged at the Jagudan Farm which was attended by cultivators from about 5 villages round about.

(4) PUBLICATIONS.

98. The yearly Agricultural Calendar (Khedut Panchang) was prepared and published as usual. The quarterly "Village life, Co-operation and Agriculture" is now being published by the Sayaji Sahakar Sevak Sangh. No new leaflets were published during the year. A complete list of departmental publications is given in Appendix XVI.

Agricultural Calendar published.

(5) AGRICULTURAL EDUCATION.

99. During the year under report the Annual Agricultural class at the Baroda Farm was started on 15th June 1931, and closed at the end of April 1932. The Kathor Agricultural Class had been discontinued as the Imperial Chemical Industries Ltd. with whose co-operation the class had been started, could not spare a suitable Instructor for the class. Hence the class was merged into that at Baroda. It commenced with 27 students on roll and closed with 18.

(a) The instruction work, practical and the theoretical was as usual done mainly by the farm and other departmental staff. The Co-operative and Sanitation Departments gave lessons in their respective fields. The Sanitation Department had arranged for magic lantern and cinema lectures on health, sanitation etc. and we are indebted to the Sanitary Commissioner for this keen personal interest.

(b) The students finishing the course came from the following classes and districts:—

Class.	Baroda District.	Navsari District.	Mehsana District.	Amreli District.	Total.
1	2	3	4	5	6
Patidar.	4	...	2	1	7
Brahmin.	1	3	1	...	5
Bania.	...	1	...	1	2
Rajput.	1	...	...	...	1
Musalman.	1	...	...	1	2
Prabhu.	1	...	...	...	1
Total.	8	4	3	3	18

100. As usual, agriculture, co-operation, carpentry, smithy, sanitation, oil engine and tractor work, poultry, Dairying, Bee-keeping, and Veterinary were the subjects dealt with.

Subjects taught and special lectures arranged. In addition to the usual set lectures of the course, the students were given special opportunities of being addressed by Heads of Departments as Development Commissioner, Registrar of Co-operative Societies, Sanitary Commissioner and Rural Reconstruction Officer on different occasions.

101. An instructive and interesting tour was arranged for the students and included visits to Poona, Bombay, Surat, Pardi, Kathor and other neighbouring places of agricultural importance. They also attended the short term of horticultural classes opened at Anand by the Bombay Department and some of them secured prizes at the final examination.

102. This was the sixth year of the class and a gathering of past and present students was held on 27th and 28th April 1932. Mr. Manibhai Nanavati who had always taken a special interest in this direction as Development Commissioner kindly accepted our invitation to address the gathering and we are obliged to him for the inspiring talk. His continued interest in the work is evidenced by his having announced a prize next year for the best work in agriculture done by a student of the class. The Government had sanctioned a special grant for prizes and other expenses of the gathering and the students also contributed their unit to the success of the gathering.

103. During the year the Education Department had arranged for lectures to the village teachers at different centres in October 1931 and May 1932. The Departmental Officers were deputed to give lectures on different agricultural subjects at these centres. Also lectures on agricultural subjects were given to the students of the Male Training College, Baroda. They also paid weekly visits to Baroda Farm for practical lessons.

Arrangements have also been made to give a regular course of agricultural lessons to the vernacular schools at Amreli and Jagudan.

104. The Annual Tractor and Oil Engine Class was as usual held from August to October on the Baroda Farm and 36 students including those of the agricultural class were given the necessary training.

Special courses.

(a) It is also intended to organize a short course in rural reconstruction work at the newly opened centre at Kosamba.

(B) AGRICULTURAL ENGINEERING.

105. The charge of the section continued with Mr. H. C. Gandhi as Agricultural Engineer. The activities of this section may be divided for convenience as follows:—

Charge and activities of the section.

- (1) Boring and dynamiting of wells.
- (2) Water Finder.
- (3) Tractor work, and
- (4) Oil Engine and Pumps.

106. The statement below shows the machinery available and that used for boring work during the year:—

Serial No.	District.	Cawnpore hand type on hand 19.	Power Mus- to patent on hand 2.	Calyx po- wer drill on hand 2.	Total.
1	2	3	4	5	6
1	Baroda... ..	2	...	...	2
2	Navsari	1	...	...	1
3	Mehsana	4	1	...	5
	Total...	7	1	...	8

Details will be found in Appendices No. XVII to XX.

(a) Total number of wells bored came to 29 including 8 applications pending from last year against 36 received last

year. Out of these 17 wells were successful giving an increase of $28\frac{1}{2}$ koses of water. Some details are given in the statement below:--

Serial No.	Class.	Baroda.	Mehsana.	Navsari.	Amreli.
1	2	3	4	5	6
1	Successful.	8	6	3	...
2	Un-successful.	...	2	...	...
3	Abandoned on request.	...	...	1	...
4	Incomplete.	3	5	1	...
	Total.	11	13	5	...

(b) The details of the depth and the size of bores are shown below:--

Serial No.	Size of pipe used.	Feet bored approximately.
1	2	3
1	$2\frac{1}{2}$ inches.	173
2	3 "	450
3	4 "	1,680
	Total.	2,303

Details will be found in Appendix No. XXI.

(c) The number of successful wells during the year include one artesian well at Kamboi in Chansma and one tube well. The total number of artesian wells bored by the Department is now 8, and that of tube wells is 16.

(d) After the work on the well at Unjha had reached 625 feet, water was struck with gushing sand. An Air Compressor of Messrs. Ingersoll Rand & Co. was tried for cleaning the hole but it proved too small for the purpose. A bigger one will be obtained and work proceeded with.

107. The demand for sinking wells with dynamite was even larger than last year. The number of applications was 92 as against 84 in the previous year. The work done is shown in the statement below :—

No. S.	Items.	Navsari District.	Amreli District.	Baroda District.	Total.
1	2	3	4	5	6
1	Number of wells dealt with.	4	84	2	90
2	Wells in which water increase was obtained.	3	68	2	73
3	Increase in koses.	2½	64	1	67½
4	Work in cubic feet.	607'-9"	32595'-9"	471'-5"	33674'-11"
5	Cartridges used.	118	5887	63	6074 (620 lbs.)
6	Detonators used.	40	1346	16	1402

A more detailed information will be found in Appendix No. XXII.

(2) WATER FINDER.

108. The use of the Schimat Water Finder is proving popular. It indicates water currents and their strength but cannot give any indication as to the depth or quality of the water. But it is a very useful help in digging new wells. During the year 30 applications were received and 72 sites were examined. The details are given in the statement below:—

S. No.	District.	Applications received.	Sites attended to.
1	2	3	4
1	Amreli	7	30
2	Mehsana	4	6
3	Baroda	13	11
4	Navsari	6	7
	Total	30	54 + 18 sites for test

Of the sites examined for the new wells, in 12 cases water has been obtained.

(3) TRACTOR WORK.

109. The equipment of this branch of the Engineering section consists of 2 Fordson Tractors, 3 Ploughs, 1 Cultivator and 1 Tandem disc-harrow. This machinery is in charge of the tractor operator. The older of the 2 tractors is being used for the tractor class. The other is mainly utilised for cultivation on the Baroda Farm. During the year it was used on the Farm aggregating about 110 acres for various tillage operations. It also worked 23 acres of the Makarpura Dairy.

110. The tractor was demonstrated at 4 places in Baroda. The tractor operator's services were utilised for a considerable repair work. 12 tractors of private ownership were set right during the year. Tractor owners in our territory were advised by a general circular at the end of the monsoon to get their machines overhauled departmentally, but the response received was inconsiderable. A rough survey showed that of the tractors in our territory, 17 are in working order and 21 are lying idle mainly due to the high cost of cultivation and lowering of prices of agricultural produce.

(a) As the disc harrow and cultivator can be used far more frequently than a plough it is intended to demonstrate their use with the tractor.

(4) OIL ENGINES AND PUMPS.

111. There are 400 power pumping sets in our territory and without a special mechanic it is not possible to render efficient and timely service to the owners. However, the Boring Assistants, and the Tractor Operator were used for this work. Repair work in Navsari, inspection and repair work on sets on the Government Farms at Baroda, Palace Dairy and Amreli were attended to.

(a) A number of applications for electrical pumping sets were received from places round about Baroda. They have been sent to the Electrical Engineer. The applicants require that the cost of erecting lines to their fields should be borne by the Electrical Department.

(b) Enquiries from the Co-operative Societies for pumping water were promptly attended to.

112. During the year 8 installations of oil engines or pumps were done.

Installations of 8
new pumping plants.

113. As the Persian wheel is useful only for depths upto 25 feet no considerable expansion has taken place and no addition to the number already taken up was made during the year.

No extension in
Persian wheels.

(C) ANIMAL HUSBANDRY.

114. The section may be divided into two branches :--

Sub-heads of the
section.

- (1) Breeding, and
- (2) Veterinary relief.

(1) BREEDING.

- (a) Palace Dairy and Makarpura Cattle Breeding Farm.
- (b) Poultry adjunct to Baroda Farm.
- (c) Premium bulls.

(a) CATTLE BREEDING FARM AND PALACE DAIRY.

115. The institution is situated at a distance of 4 miles from the city. The main object is to cater for the palace requirements in dairy produce. The station is also used for breeding Gir cows and Charotar buffaloes. A farm of 48 bighas i. e. about 28 acres is attached to the institution for raising fodder. In addition to this area, 1000 bighas of beed land

Location, object and
area.

at Nimetha and Karamshia in Vaghodia have been assigned for the provision of dry grass. A plot of about 18 bighas belonging to the Garden Department, adjoining the Electric Power House (Makarpura) is also rented for facilities of green grass for silage at a rental of Rs. 223 :—

116. The strength of the herd at the end of July 1932, Strength of the herd. was 109, distributed as follows :—

No.	Class.	Number on 31st July 32.	Number on 31st July 31.
1	2	3	4
1	Milch cows	21	24
2	Do. buffaloes	27	27
3	Young stock	54	61
4	Bulls	2	2
5	Bullocks	5	6
	Total	109	120

Details are given in Appendix No. XXIII.

117. The general health of the farm stock was good except for an attack of H. S. The herd Health of stock. was inoculated once in October and once in November. This prevented serious inroads of the disease but eight animals fell victims to H. S. alone in a total mortality of 14 during the year.

118. The statement below gives the figures of milk production of the herd during the year of the report and that preceding it :—
Production per milking animal and herd average for cows and buffaloes.

Class.	1931-32.				1930-31.			
	No. on hand.	Average number in milk.	Average milk yield on the herd per animal lbs.	Average milk yield on milking animals per animal lbs.	No. on hand.	Average number in milk.	Average milk yield on the herd per animal lbs.	Average milk yield on milking animals per animal lbs.
1	2	3	4	5	6	7	8	9
Cows ...	23-0	15-9	2514-5	3,637	23-2	15-2	2,483	3,737
Buffaloes ...	26-8	16-0	1887-2	3,136	25-2	16-6	2,398	3,640

119. The total quantity of milk produced was 1,08,409.5 lbs.
which was disposed off as follows :—

Total milk produced
and its disposal.

S. No.	Items.	Quantity supplied lbs.	
		1931-32.	1930-31.
1	2	3	4
1	Palace	128	6,800
2	Royal Family	142	2,344
3	Hospital	32,809	54,541
4	General custom	72,820	40,365
5	Cream made	3,68.5	11,545
6	Fed to young stock	562	358
7	Wastage in handling or otherwise.	1,580	1,593
	Total ...	1,08,409.5	1,17,546

120. The total fodder fed to animals came to 7,64,105 lbs.
of which 5,64,790 lbs. were produced on
the farm and 1,99,315 lbs. of dry grass
were purchased from the contractor.

Fodder consumed
and concentrates fed.

Details are given in table below :—

S. No.	Kind of produce.	In 1931-32.	In 1930-31.
1	2	3	4
1	Sundhia	99,810	27,290
2	Bajri	38,580	...
3	Maize ... ..	...	12,180
4	Math	31,530	40,840
5	Lucerne	97,380	1,26,560
6	Silage	1,27,380	70,830
7	Grass green... ..	1,98,110	2,17,080
	Total ...	5,62,790	4,94,830
8	Grass dry from Contractor.	1,99,315	2,12,380
	Grand total ...	7,62,105	7,07,210

- (a) In addition 1,29,016 lbs. of concentrates were fed as compared with 1,32,130 lbs. in the previous year.
- (b) Details regarding concentrates fed are given in Appendix XXIV.

121. The expenditure and receipts for the year and that preceding it are as given below :—

	1931-32.	1930-31.
Expenditure.	26,779- 3-9.	27,681- 5-3.
Receipts.	13,112-12-1.	14,677-12-1.

Details are given in Appendix XXV.

(b) POULTRY ADJUNCT TO BARODA FARM.

122. During the year an Adjunct of poultry and bee-keeping was added to the class. Mr. D. G. Kelkar, Assistant Superintendent, Baroda Farm had been sent to the Y. M. C. A. summer classes at Ramnathpurum (Coimbatore) to get training in poultry and bee-keeping. On his return the above adjunct was started. In the poultry section, a start was made with a few white Leghorns and country birds. The subsequent work has resulted in the stock being increased to a strength of 28 birds at present. The objects kept in view in the working of the section are training of the students in the useful secondary occupation, show how improvement in country types is possible by crossing with a better breed like Leghorn and incidentally arouse interest in poultry keeping in general. The performance of the leghorn birds seems promising, one bird having given 226 eggs in 319 days.

(a) In the bee-keeping section a start was made by securing a working hive of *Apis Indica* from Coimbatore. It worked well for some time and some honey was extracted. But later on the colony was very heavily attacked by wax-moth and was entirely destroyed. Efforts were made to establish local working hives from Chhota Udepur; however, the wax-moth pest proved so serious that it was thought advisable to postpone bee-keeping for some time to come in this severely infected area.

123. The expenditure for the section was as follows :--

Expenditure.

Non-recurring.	Rs. 140- 6- 3.
Recurring.	Rs. 176-12-10.

(c) PREMIUM BULLS AND STALLION.

124. At Amreli the Kathi stallion continued to be useful; Stallion and premium bulls. it covered 19 mares during the year.

(a) *Bulls*:—During the year 6 new Kankrej bulls from the Chharodi Cattle Farm were purchased and distributed as premium bulls. The total number of premium animals has now reached 34. Out of these 2 had gone out of service on account of accident or otherwise. Hence at the end of the year 32 bulls are in distribution, mostly in Navsari District. One buffalo bull has also been given out.

Details of the distribution of the premium bulls are given in Appendix XXVI.

(2) VETERINARY RELIEF.

125. In opening three new dispensaries the Government policy of rapid extension of veterinary relief to agricultural cattle was kept up. Progress maintained and 3 new dispensaries opened. The number of dispensaries is now 24 located as below :—

Baroda District.	Navsari District.	Mehsana District.	Amreli District.	Total.
1	2	3	4	5
Baroda. Dabhoi. Sankheda. Petlad. Bhadran. Karjan. Sinor.	Orna. Vesma. Vyra. Karchelia. Mangrol.	Mehsana. Pattan. Sidhpur, Vijapur. Kadi. Chansma. Unjha. Kalol.* Vadnagar.*	Amreli. Kodinar. Dhari.*	
7	5	9	3	24

* New Dispensaries.

(a) The Dispensary at Kathor has been transferred to Orna where it is hoped to render better service.

126. The statement shows the cases treated during the year with figures for 1930-31 ;—
Cases treated.

Serial No.	Particulars.	1931-32.	1930-31
1	2	3	4
1	Treated at the dispensaries.	34,159	33,280
2	Treated on tour.	8,549	6,666
3	Inoculated.	4,724	7,239
	Total.	47,432	47,185

(a) The average daily attendance of out-door and in-door patients was 524.35 and 14.7 as against 460.0 and 11.7 respectively in the previous year.

(b) Of the cases treated at the dispensaries 19,733 were from the mofussil giving a percentage of 57.7.

127. The statement below shows the classes of patients given relief by suitable treatment :—

Classes of animals treated.

S. No.	Class.	Cases treated.	
		1931-32.	1930-31.
1	2	3	4
1	Horses	3,262	2,911
2	Cattle	25,216	26,464
3	Others	5,681	3,905
	Total	34,159	33,280

128. The number of cases treated for different diseases at the dispensaries are shown below:—
 Diseases treated and operations done.

S. No.	Disease.	Number of cases treated.	
		1931-32.	1930-31.
1	2	3	4
1	Digestive	3,992	3,806
2	Specific	2,658	3,496
3	Skin	2,772	2,306
4	Cancer of the horn	1,073	1,113
5	Eye and ear	1,000	1,094
6	Skeleton... ..	1,186	724
7	Others	21,478	20,741
	Total	34,159	33,280

Details are given in Appendices XXVII & XXVIII.

(a) Operations:—2,445 operations as against 2,553 in the previous year were performed. Of these, 1,246 were minor and 1,209 major operations.

129. The total number of castrations by Burdizzo method was 2,351. Of these, 1,168 were done on tour, 646 by the Castration Officer in Songadh and Vyara Talukas in Navsari, and 537 at the dispensaries.

130. During the year the number of out-break reports was 97 as against 326 in the last year. Of these, the more serious were 44 of Haemorrhagic Septicaemia and 25 of rinderpest. The number of inoculations against H. S. and rinderpest was 4,724.

(a) The epidemic reports are classified below :—

S. No.	Epidemic.	Number of reports.			
		Baroda.	Navsari.	Mehsana.	Amreli.
1	2	3	4	5	6
1	Rinderpest ...	8	6	1	10
2	Foot and mouth ...	8	...	• 13	1
3	Haemorrhagic Septicæmia.	32	9	3	...
4	Other diseases ...	3	2	1	...
	Total ...	51	17	18	11

Details are given in Appendices XXIX & XXX.

131. The relief afforded by the Veterinary Surgeons is increasing as can be seen from the fact that 1,057 villages were visited and 7,381 cases treated as against 704 and 4,056 respectively during the previous year. Castrations done on tour numbered 1,168 as against 291 in the previous year. Details will be found in Appendix No. XXXI.

Miscellaneous items of importance.

132. The Veterinary Inspector Mr. Vasavada returned from Mysore and a scheme for better organization of the Veterinary section is being formulated and will be submitted for sanction.

(a) During the year the Racharda Panjrapole in Kalol requisitioned the services of the Veterinary branch and 4 Veterinary surgeons who were deputed inoculated at the panjrapole 2,857 animals against rinderpest and H. S.

Inspection of dispensaries.

133. The Veterinary Inspector inspected all the dispensaries during the year and made satisfactory arrangements for the opening of the new dispensaries.

134. Expenditure on Veterinary relief came to Rs. 38,437-3-6, as against Rs. 37,406-0-0 in the previous year.

Expenditure

Details are given in Appendix No. XXXII.

POINTS MENTIONED IN THE LAST REVIEW AND ACTION TAKEN.

135. It was suggested by the Pragati Adhikari that the report should contain information regarding area of important crops and crop yields and in paragraph 4 of the review the Department was desired to embody the information in the departmental report. This is a large matter and does not fall in the purview of the departmental report as the Department as such has little hand in checking the area or the yield. On representing the matter to Government in this light, we have been directed by Agri. M. No. 25/1 of 1st October 1932, that no changes need be made in the present method of framing the report. The information is already being published in the Statistical Abstract and so no duplication here is necessary.

136. In paragraph 7, Government have directed that we make an increasing use of the cultivators' fields for demonstration purposes with the help of Revenue Officers. We have kept this in mind and have made use of them wherever possible as in the sugarcane types distributed for trial at Vyara. Here four cultivators have been given four types of canes for trial. It is to be seen how the experiment turns out in the end.

137. In paragraph 8, Government have desired that we take a survey of soils using artificial manures with a view to see and check if any detrimental changes have thereby taken place. It is true that artificial manures are coming into greater use but it is still in too small a proportion of the area under crops that this happened. It is doubtful whether the people be so accustomed to the use of artificials as to use it year after year on the same spot. The

Department has besides no facilities of having these soils analysed. The point made however will be kept in view and any tendency of that nature will be looked into without delay.

138. In paragraph 10 of the review, reference is made to the opinion of the Pragati Adhikari regarding the Jagudan Farm (Mehsana) being badly located and too small for its purposes and Government directed that proposals may be submitted for its expansion or removal to some other suitable place, if necessary. The matter has been investigated and proposals to expand the Farm will soon be submitted to Government.

Suggestion about the Jagudan Farm.

139. Paragraph 11, of the review refers to the view that particular localities should be specialized for rearing particular types of fruits instead of trying all types of fruits at all places. The question of fruit culture has hardly reached a stage in Gujarat or for the matter of that in India to localise and have such specialization, where it is a question of having a variety of fruits, trials of possible fruits must be made and it is on the basis of these preliminary results that specialization or localization of special types can proceed. We are however in this matter almost at the beginning of things. The point made however is thought-provoking and will be kept in view.

Specialization in fruit culture.

140. In paragraph 14, reference is made to the insufficient number of premium bulls, which number 25 and the Department is directed to try to increase the number and submit a scheme for the breeding of other useful animals such as the horse and the donkey. The number of premium bulls cannot be increased until the Department has provision of breeding them departmentally or in the alternative to have a bull raising scheme by buying pedigreed young stock and rearing them till they are fit for service. The whole question is one of finance and until relief in that direction is available, little progress can be made. A scheme for donkey breeding is being prepared, but for horse breeding little demand exists,

141. Paragraph 15 refers to the difficulties of tractor repairs and similar implements. The Tractor Operator and Agricultural Engineer have been desired to make special efforts to assist the owners of tractors but the fact that tractors are used on fields and often very roughly must not be lost sight of. Beyond asking the Tractor Operator and Agricultural Engineer to give the relief more readily, nothing further seems possible at present.

142. The suggestions made by Government in para 16, are being attended to. The scope for New implements. persian wheels however is limited. Labour saving machinery and up-to-date agricultural implements are brought for trial and if successful are demonstrated. The winnower and the plough are instances in point but the most suitable plough for Gujarat yet remains to be devised.

143. The co-operative idea in the propaganda work is steadily kept in view but the results are not commensurate with the efforts and energy utilized. All such efforts require to be proved financially sound and for that certain financial assistance or guarantee of loss is necessary. Until this is forthcoming little progress can be made in this important sphere.

144. As suggested in para 18 of the review the Department has been able to secure assistance from the Imperial Council of Agricultural Research and Indian Central Cotton Committee fund in carrying out a 3½ year study of the economics of cotton production in one district of the Baroda State. It is intended to approach the Imperial Council of Agricultural Research for assistance in tobacco breeding for cigarette purposes but our handicap would be of the necessary breeding staff for the purpose.

(a) The idea of entertaining a Tobacco Breeder is worthy of consideration from this point of view,

145. The question of sugarcane extension referred to in para 19 and sugar making as a village industry are already on hand and necessary proposals for trial of sugarcane types will be duly placed before Government for orders.

Sugar and sugarcane studies already on hand.

CONCLUSION.

146. The report of the year's work is now completed, and only the pleasant duty of acknowledgement remains. Where all have done their best in helping on the policy of this Department, it would be unfair to mention only a few names and drop others. I take this opportunity, therefore, of thanking all in the Department who have enabled us to do with little we can in making the farmer do better than before. There are two exceptions that I would like to make to this general position.

- (a) The preparation of the annual report entails, both intelligence and industry and it will not be out of place, to mention the assistance rendered by Mr. Kathavate in the direction.
- (b) The work at this office has been steadily on the increase, without commensurate additional staff. And Mr. Shevde, as the chitnis of this office has naturally to bear the brunt of the burden, and I wish therefore to specially commend to Government his capacity to meet new demands, with a readiness that is very gratifying.

Baroda.
Dated 19th December 1932.

C. V. SANE,
Director of Agriculture,
Baroda State.

ANNEXURE A.

(Para 1. P. 1.)

**Important posts in the Department of Agriculture
on 31st July 1932.****I. AGRICULTURAL SECTION.**

- | | | |
|----|--|--|
| 1. | Mr. V. N. Likhite,
B.A., B.Sc., D.Sc. | Deputy Director of Agriculture,
Baroda District. |
| 2. | „ P. P. Patel, B.Ag. | Agricultural Inspector, Amreli
District and Superintendent,
Amreli Farm. |
| 3. | „ R. G. Patel, B.Ag. | Agricultural Inspector, Kadi
District, and Superintendent,
Jagudan Farm. |
| 4. | „ V. M. Kathavate,
B.Ag. | Agricultural Inspector, Baroda
District. |
| 5. | „ R. S. Patil, B.Ag.,
B.Sc. | Superintendent, Baroda Farm. |
| 6. | „ G. G. Nawathe, B.Ag. | Agricultural Inspector, Navsari
District and Cotton
Officer. |

II. AGRICULTURAL ENGINEERING SECTION.

- | | | |
|----|-------------------|------------------------|
| 7. | Mr. H. C. Gandhi. | Agricultural Engineer. |
| 8. | „ N. L. Desai. | Boring Overseer. |

III. VETERINARY SECTION.

- | | | |
|-----|---------------------------------|-------------------------------|
| 9. | Mr. S. M. Vasavada,
G.B.V.C. | Veterinary Inspector. |
| 10. | „ R. K. Pathak,
G.B.V.C. | Baroda Veterinary Surgeon. |
| 11. | „ A. M. Mehta,
G.B.V.C. | Dabhoi Veterinary Surgeon. |
| 12. | „ D. B. Pandya,
G.B.V.C. | Karchelia Veterinary Surgeon. |

IV. CATTLE BREEDING AND DAIRY SECTION.

13. Mr. N.K. Jadhav. Superintendent, Cattle Breeding and Dairy.

Temporary.

V. COTTON ROOT ROT SCHEME.

1. Mr. V. N. Likhite, Officer in charge Cotton Root
B.A., B.Sc., D.Sc. Rot Scheme.
2. „ M. S. Pandya, B.Ag. Cotton Breeder.
3. „ P. R. Desai, B.Ag. Cotton Test Officer.
4. „ A. F. Patel, B.Ag. Plant Breeding Assistant.
5. „ D. G. Limaye, B.Ag. Mycological Assistant.

VI. RURAL RECONSTRUCTION CENTRE.

1. Mr. I. M. Jacobi. Superintendent, Rural Reconstruction Centre.
2. „ D. G. Kelkar. Assistant Superintendent, Rural Reconstruction Centre.

ANNEXURE B. (Para. 5 P. 2)

Statement showing detail of touring work of the Director of Agriculture in the year 1931—32.

S. No.	Item.	Baroda District	Navsari District	Mehsana District.	Amreli District.	Bombay.	Poona Belapur etc.	Surat.	U. P.	Simla.	Total.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12	13
1	Number of days.	12	42	15	17	15	18	2	19	10	150	
2	Number of journeys.	4	6 -1	2	2 -1	4 -1	1 -1	1	1	1	22 -4	-Sign shows the number of journeys from one District to another.

ANNEXURE. C (Para 6 P. 3)

Statement showing the number of papers received and disposed of in the Agriculture Department during the year 1931—32.

S. No.	Item.	Last year's pending papers.	Number of papers received during the year.				Total No. of papers.	Number of papers disposed of.				Total No. of papers disposed of.	Remain- ed pending at the end of the year.	Remarks.
			1st quarterly.	2nd quarterly.	3rd quarterly.	4th quarterly.		1st quarterly.	2nd quarterly.	3rd quarterly.	4th quarterly.			
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1	Papers re: Agriculture	11	309	295	300	492	1407	302	310	295	486	1,393	14	
2	„ Farms.	14	413	425	350	467	1669	408	420	344	485	1,657	12	
3	„ Agricultural Engineering and Boring.	10	272	250	315	415	1262	267	240	331	413	1,251	11	
4	„ Veterinary Dis- pensaries.	19	461	475	450	506	1911	448	487	440	518	1,893	18	
5	„ Government servants.	12	342	330	400	397	1481	331	330	403	408	1,472	9	
6	„ Miscellaneous.	45	323	395	500	490	1953	337	410	506	483	1,736	17	
7	„ Applications.	11	91	90	150	109	451	57	125	144	125	451	0	
8	„ Cattle Breeding and Dairy.	9	158	116	94	154	531	168	115	88	153	524	7	
Total.		131	2,369	2,376	2,559	3,030	10,465	2,318	2,437	2,551	3,071	10,377	88	

ANNEXURE. D (Para 13 P. 5.)

Statement showing Tagavi advances recommended and given
to the cultivators in the year 1931-32.

S. No.	Name of the cultivator.	Village.	Taluka.	Amount recommended.	Amount granted.	For the purchase of.	Remarks.
1	2	3	4	5	6	7	8
1	Bai Mani, Nagar Vallab's daughter.	Morthana	Kamrej	1,500	...	Oil Engine and Pump.	
2	Jivan Kanji.	Kholvad	Do.	2,000	2,000	Do.	
3	Ahmed Saleman Saluji.	Do.	Do.	700	700	Do.	
4	Kala Makan.	Vihan	Do.	19,00	1,900	Do.	
5	Madhavbhai Bhatkibhai Patel.	Orna	Do.	3,000	2,400	Do.	
6	Manibhai Dullabh.	Parujan	Navsari	2,000	2,000	Do.	
7	Vasanji Gopalji.	Navsari	Do.	1,500	1,500	Do.	
8	Manchersha Manekji Chavda.	Mangrol	Do.	2,500	2,500	Do.	
9	Bhimbhai Vasantji.	Gadat	Gandevi	2,000	2,000	Do.	
10	Patel Shivabhai Dadabhai.	Dudhwada.	Padra	3,000	3,000	Do.	
11	Patel Parshottam Ranchhod.	Samsipura.	Baroda	1,000	...	Do.	
12	Kachhia Bhaua Dullav.	Lilora.	Vaghodia	2,000	...	Do.	
13	Javeri Nanchand.	Motilal Dabla.	Vijapur	7,000	...	Tractor and other implements.	
	Total.			30,100	18,000		

ANNEXURE No.

Statement showing expenditure and receipts of the Department

S. No.	Branch.	Pay.	Travelling allowance.	Experiments and Demonstrations.	Other charges.
1	2	3	4	5	6
1	Head Office ...	17,062- 0- 2	1,815-14- 6	987-10-10	9,270-11- 6
2	Agricultural Engineering ...	8,378- 8- 7	2,274-10- 9	230-12- 3	8,349- 9- 5
3	Baroda Farm ...	5,056-10- 9	244- 8- 9	43- 2- 0	11,204- 3- 2
4	Jagudan Farm ...	1,812- 0- 0	189- 2- 0	...	3,052-11- 1
5	Amreli Farm ...	2,617-10- 6	71-15- 5	87- 3- 0	5,240- 7-10
6	Inspectors ...	8,472- 4- 9	1,457- 5- 6	348-10- 3	225- 3-11
7	Cotton Branch ...	475- 0- 0	17-14- 0	...	40- 0- 0
8	Agricultural School Baroda.	...	...	...	3,897-13- 3
	Kathor ...	...	...	...	1,324- 6- 7
9	Makarapura Dairy.	6,960-14- 3	804- 8- 0	...	19,013-13- 6
10	Veterinary Branch...	...	...	...	38,437- 3- 6
11	Deputy Director.	6,530- 9- 8	346- 3- 6	277- 2- 9	573- 6- 2
12	Rural Reconstruction Centre ...	2,421- 6- 3	245-10- 6	1,233-15- 9	2,079- 1- 5
	Total ...	59,787- 0-11	7,467-12-11	3,208- 8-10	1,02,708-11- 4

E (Para 15 P. 6)

of Agriculture for the year 1931-32.

Total expenditure.	Receipts.	For 1930-31.		Remarks.
		Expenditure.	Receipts.	
7	8	9	10	11
29,136- 5- 0	8,013-13-11	31,299- 3- 3	5,648-14- 3	* Does not include the share of the India Central Cotton Committee for the Cotton Root Rot scheme Baroda and Cotton Tests Navsari for the year amounting to Rs. 5311-5-4 and Rs. 791-3-6 respectively.
19,233- 9- 0	2,630- 6-10	19,703-11- 6	2,069- 5- 0	
16,548- 8- 8	5,857-12-10	16,998-14- 1	8,280-13- 0	
5,053-13- 1	1,879- 6- 0	5,587- 1- 8	2,049-11- 5	
8,017- 4- 9	1,465-11- 2	8,556-14-10	1,969-13- 8	
10,503- 8- 5	11-11- 0	9,270-10- 1	1- 4- 0	
532-14- 0	...	615-13- 6	...	
3,897-13- 3	...	4,008-14- 8	...	
1,324- 6- 7	...	1,605- 7- 7	...	
26,779- 3- 9	13,112-12- 1	27,681- 5- 3	14,677-13- 1	
38,437- 3- 6	...	37,406- 0- 0	28-10- 9	
7,727- 6- 1	...	...	...
5,980- 1-11	25-13- 0	...	...
1,73,172- 2- 0	32,997- 6-10	1,62,734- 0- 5	34,726- 5- 2	

APPENDIX No. I (Para 17 P. 7)

Statement showing rainfall in different Taluka of the State
during the year 1931—32.

Name of the Taluka.	Rainfall of 1931-32.	Average of last ten years.	Name of the Taluka.	Rainfall of 1931-32.	Average of last ten years.	Remarks.
1	2	3	4	5	6	7
Baroda District.			Mehsana District.			
Baroda City ...	56.40	38.21	Kadi Taluka ...	33.21	26.19	
Baroda Taluka ...	58.46	37.61	Kalol " ...	25.99	26.90	
Padra " ...	50.01	33.23	Dehgam " ...	38.28	33.03	
Karjan " ...	51.16	37.19	Attarsumba " ...	31.82	32.38	
Dabhoi " ...	54.64	37.27	Visnagar " ...	27.94	23.99	
Sankheda " ...	62.23	39.98	Mehsana " ...	25.09	23.81	
Tilakwada " ...	48.97	35.17	Kheralu " ...	31.03	25.84	
Sinor " ...	56.94	40.47	Sidhpur " ...	26.21	23.40	
Chandod " ...	42.49	29.01	Patan " ...	22.52	22.89	
Petlad " ...	37.65	35.52	Harij " ...	23.25	20.42	
Bhadran " ...	42.33	33.64	Vijapur " ...	36.36	28.66	
Savli " ...	40.56	37.23	Chansra " ...	21.97	23.87	
Vaghodia " ...	66.44	47.49				
Navsari District.			Amreli District.			
Navsari Taluka ...	71.49	53.25	Amreli Taluka ...	15.48	18.02	
Gandevi " ...	77.42	60.39	Bhimkatta " ...	24.46	19.86	
Palsana " ...	64.80	53.02	Dhari " ...	11.55	19.56	
Mangrol " ...	38.00	42.36	Khambha " ...	13.78	18.05	
Kamrej " ...	53.53	41.01	Damnagar " ...	20.00	16.42	
Vyara " ...	92.81	53.83	Ratanpur " ...	21.09	19.45	
Songadh " ...	81.63	56.17	Kodinar " ...	21.63	26.66	
Mahuva " ...	77.34	42.78	Okhamandal " ...	13.08	11.93	
			Beyt " ...	11.86	12.98	

APPENDIX No. II (Para 28 P. 11)

Statement showing the area and value of crops grown on the Agricultural Experimental Station Baroda in the year 1931-32.

S. No.	Crop.	Area.		Yield.		Value.		Remarks.
		A.	G.	Grain or other principal product.	Fodder or by-product.	Rs.	As. P.	
1	2	3	4	5	6	7	8	
				Mds. Srs.	Mds. Srs.	Rs.	As. P.	
1	Cotton ... May sown	...	20	2-15	...	5-10-10		
2	Cotton ...	5	20	105-27	...	298- 9- 6		
3	Cotton and Tali.	1	...	14- 0	1- 1 Tali.	41-15- 0		
4	Gawar ...	3	11	16- 8	31-20	36- 5- 4		
5	Kodra mix	1	...	28-17 Kodra.	...	51- 8-11		
	Tur ...	...	...	7-38	...	...
	Tali ...	...	...	8- 3	...	...
	Gotar ...	...	...	8- 0	...	...
	Kulthi ...	...	...	0-17	...	...
6	Davato ...	2	...	13-31	27- 0 Sudan fodder.	17- 2- 7		
	Castors ...	...	...	6- 3	...	...
	Val ...	...	...	0- 5	...	...
	Sudan grass seed.	...	...	1- 9	...	...
	Kulthi ...	...	...	0-27	...	...
	Gotar ...	...	...	1-20	...	...

APPENDIX No. II (Para 28 P. 11)—Contd.

S. No.	Crop.	Area.		Yield.		Value.	Remarks.
		A.	G.	Grain or other principal product.	Fodder or by-product.		
1	2	3	4	5	6	7	8
				Mds. Srs.	Mds. Srs.	Rs. As. P.	
7	Bajri	6	20	84-18	3,095 bundles.	308- 1-10	
	Jiru ... ..	...	...	1-22	...	...
	Wheat ... ..	...	...	41- 5	...	...
	Onions ... ..	...	...	140-35	...	...
8	Tobacco... ..	3	...	85-14	...	216- 9- 2	
9	Sundhia... ..	3	38	11-14 seeds.	471-25 green fodder 811 bundles dry.	125-11- 6	
10	Castors	4	...	27-22	...	53- 1- 9	
	Kulthi ... ..	...	...	5-27	...	...
11	Wheat	3	9	104-35	6,215 bundles.	193- 2- 9	
12	Lucerne... ..	4	16	3-15 seed 2,091-16 grass.	...	636- 9- 9	
13	Out side chaidi ...	2	20	...	...	83- 0- 0	Rented out.
14	Seed bed, Fruit Seedlings, and vegetables ...	...	30	...	...	705-10- 3	
15	Fruit trees	10	36	...	...	990- 3- 6	Sold by auction

APPENDIX No. II (Para 23 P. 11)—Concl'd.

S. No.	Crop.	Area.		Yield.		Value.	Remarks.
		A.	G.	Grain or other principal product.	Fodder or by-product.		
1	2	3	4	5	6	7	8
16	School area (different crops) ...	2	10	...	...	68- 8-10	
17	Groundnut ...	...	20	41-35 green.	...	117-10- 6	
	Garlic ...	...	...	8-11	...	...
18	Potatoes ...	1	...	131-10	...	115-15- 8	
19	Flowers ...	3	1	...	...	681-13- 6	Sold by auction
20	Miscellaneous ...	1	20	...	...	97- 3-10	

APPENDIX No. III (Para 29 P. 12)

Statement showing the rainfall measured on the Baroda Agricultural
Experimental Station during the year 1931-32.

Date.	June.	July.	August.	Septem- ber.	October.	Novem- ber.	Remarks.
1	2	3	4	5	6	7	8
	In. C.	In. C.	In. C.	In. C.	In. C.	In. C.	
1	0-0	0-52	0-4	0-23	0-0	0-0	
2	0-0	0-0	0-69	2-4	0-0	0-0	
3	0-0	2-42	1-28	0-1	0-49	0-34	
4	0-0	0-96	0-0	0-15	1-2	0-13	
5	0-0	0-58	0-1	0-0	0-0	0-0	
6	0-0	0-0	0-0	0-0	0-18	0-0	
7	0-0	0-0	0-3	0-0	0-45	0-0	
8	0-0	0-0	0-0	0-0	0-0	0-0	
9	0-0	0-55	1-28	0-0	0-0	0-0	
10	0-0	0-0	0-20	0-0	0-5	0-0	
11	0-0	2-78	0-68	0-0	0-40	0-0	
12	0-0	0-0	1-7	0-0	0-25	0-0	
13	0-0	0-0	2-76	0-0	0-10	0-0	
14	0-0	0-0	0-50	0-0	0-66	0-0	
15	0-0	0-0	0-36	0-0	0-19	0-0	
16	3-96	0-0	0-10	0-0	0-0	0-0	
17	0-0	0-19	1-21	0-0	0-0	0-0	
18	0-0	0-83	5-56	0-0	0-0	0-0	
19	0-0	0-88	0-49	0-0	0-0	0-0	
20	0-0	0-64	0-6	0-36	0-0	0-0	
21	0-0	0-23	0-8	0-34	0-0	0-0	
22	0-0	0-24	0-10	1-91	0-0	0-0	
23	0-0	0-2	0-95	0-0	0-0	0-0	
24	0-0	0-0	4-60	0-0	0-0	0-0	
25	0-0	0-0	0-45	0-0	0-0	0-0	
26	0-0	0-0	0-2	0-0	0-0	0-0	
27	0-0	0-48	0-0	0-0	0-0	0-0	
28	0-0	0-7	0-78	0-0	0-0	0-0	
29	0-0	0-8	2-12	0-0	0-0	0-0	
30	0-0	2-26	0-38	0-0	0-0	0-0	
31	0-0	2-56	0-25	0-0	0-0	0-0	
Total.	3-96	16-29	26-05	5-04	3-79	0-47	Total Rain for the season 55-60.

APPENDIX No. IV (Para 35 P. 14)

Statement showing trials of wheat on the Agricultural Experimental

Station Baroda in the year 1931-32.

Plot No.	Preliminary irrigation.	Sowing date.	Date of 1st watering.	No. of waterings.	Harvest.	Out-turn per acre.	Remarks.
1	2	3	4	5	6	7	8
11-12 51-4	Green manure nil.	19-11-31	31-12-31	4	9-3-32	1,104	
59-62		Do. 4-11-31	12-11-31	12-12-31	5	6-3-32	1,389
9-10	After Bajri nil.	9-12-31	2-1-32	5	16-3-32	704	

APPENDIX No.

Statement showing results of fertilizer experiments of Bajri,
Baroda for the years 1929-30,

Name of Crop.	Treatment per acre.	Yield in lb per acre			
		1929	1930	1930	1931
		Grain.	Straw.	Grain.	Straw.
1	2	3	4	5	6
1 BAJRI (B. M. F.) (Pennise tum Typhoideum.)	10 C. lds F. Y. M. (Control)	1,956	5,684	1,084	5,764
	5 C. lds F. Y. M. plus 80-lb S/Ammonia	1,920	5,956	1,536	6,188
	5 C. lds F. Y. M. plus 120-lb S/Ammonia.	2,030	6,250	1,792	6,604
	5 C. lds F. Y. M. plus 80-lb Leunaphos	1,910	6,060	1,414	5,973
2 WHEAT Pusa No. 4	No Manure (Control)	1,312	1,960	864	1,024
	120-lbs Sulphate of Ammonia	1,596	2,278	1,403	1,556
	200-lbs do.	1,598	2,084	1,640	1,792
	120-lbs Leunaphos	1,444	1,983	1,376	1,436
3 COTTON Broach No. 9	No Manure (Control)	550		248	
	100-lbs Sulphate of Ammonia	628		288	
	150-lbs do.	802		1,172	
	100-lbs Leunaphos	848		520	
4 TOBACCO Nadiad No. 6	20 C. lds F. Y. M. (Control)	983		1,033	
	10 C. lds F. Y. M. plus 150-lb S/Ammonia	1,206		1,131	
	10 C. lds F. Y. M. plus 250-lb S/Ammonia	1,559		1,432	
	10 C. lds F. Y. M. plus 200-lb Leunaphos	944		1,216	

V (Para 36 P. 15)

Wheat, Cotton and Tobacco on Agricultural Experimental Station,
1930-31, and 1931-32.

of 3 years.		Average yield of the three years 1929-30-31-32.		Increase in lb. per acre.		Percentage Increase.
1931	1932	Grain.	Straw.	Grain.	Straw.	
Grain.	Straw.					Grain.	Straw.	Grain.	Straw.
7	8	9	10	11	12	13
290	672	1,110	4,040	...	...	...
456	780	1,304	4,308	194	268	17.4
386	960	1,403	4,605	293	562	26.4
302	906	1,209	4,315	99	275	9.0
648	1,300	941	1,428	...	...	...
1,072	1,988	1,359	1,941	418	513	44.4
972	2,581	1,403	2,152	462	724	49.1
1,032	2,020	1,284	1,796	343	368	36.4
570		456		...		...
793		570		114		25
836		937		481		105.4
847		738		282		61.8
896		971		...		...
1,072		1,136		165		17
1,188		1,393		422		43.4
1,066		1,075		104		10.7

APPENDIX No.

Statement showing results of fertilizer experiments of Bajri
Baroda for the years 1929-30,

Name of Crop.	Treatment per acre.	Gross value of outturn per					
		Grain.			Straw.		
		Rs.	As.	P.	Rs.	As.	P.
1	2	14			15		
1 BAJRI (B. M. F.) (Pennisetum Typhoideum.)	10 C. lds F. Y. M. (Control)	55-	8-	0	6-	1-	0
	5 C. lds F. Y. M. plus 80-lb S/Ammonia.	65-	3-	2	6-	7-	4
	5 C. lds F. Y. M. plus 120-lb S/Ammonia.	70-	2-	5	6-	14-	6
	5 C. lds F. Y. M. plus 80-lb Leunaphos.	60-	7-	2	6-	7-	6
2 WHEAT Pusa No. 4	No Manure (Control)	52-	14-	10	1-	12-	6
	120-lbs Sulphate of Ammonia.	76-	7-	1	2-	6-	9
	200-lbs do.	78-	14-	8	2-	10-	10
	120-lbs Leunaphos.	72-	3-	7	2-	4-	0
3 COTTON Broach No. 9	No Manure (Control)	Rs.	45-	9-	7		
	100-lbs Sulphate of Ammonia.	Rs.	57-	0-	0		
	150-lbs do.	Rs.	93-	11-	2		
	100-lbs Leunaphos.	Rs.	73-	12-	9		
4 TOBACCO Nadiad No. 6	20 C. lds F. Y. M. (Control)	Rs.	121-	6-	0		
	10 C. lds F. Y. M. plus 150-lb S/Ammonia.	Rs.	142-	0-	0		
	10 C. lds F. Y. M. plus 250-lb S/Ammonia.	Rs.	174-	2-	0		
	10 C. lds F. Y. M. plus 200-lb Leunaphos.	Rs.	134-	6-	0		

REMARKS. C. ld-Cartload-1,600 lb.

MARKET VALUE. Tobacco Rs. 5-0-0 per maund of 40 lb (dry)
Cotton Rs. 4-0 0 do.
Bajri (Grain) Rs. 2-0-0 do.
Bajri (Straw) Rs. 1-8-0 per 100 bundles of 10 lb each
Wheat (Grain) Rs. 2-4-0 per maund of 40 lb.
Wheat (Straw) Rs. 0-8-0 per 100 bundles of 4 lb each

V (Para 36 P. 14)—Concl'd.

Wheat, Cotton and Tobacco on Agricultural Experimental Station
1930-31, and 1931-32.

Acre.	Cost of treatment per acre.		Nett value of outturn per acre.		Profit per acre.	Percentage return on fertiliser expenditure.	Remarks.
	Rs.	As. P.	Rs.	As. P.			
Total.	Rs.	As. P.	Rs.	As. P.	Rs.	As. P.	
16	17	18	19	20	21		
61- 9- 0	15- 0- 0	46- 9- 0	...	...	
71-10- 6	13- 8- 0	58- 2- 6	11- 9- 6	85			
77- 0-11	16- 8- 0	60- 8-11	13-15-11	84.5			
66-14- 8	16- 8- 0	50- 6- 8	3-13- 8	24.2			
54-11- 4	...	54-11- 4	...	...	
78-13-10	9- 0- 0	69- 1-10	15- 2- 6	166.6			
81- 9- 6	15- 0- 0	66- 9- 6	11-14- 2	80			
74- 7- 7	13- 8- 0	60-15- 7	6- 4- 3	46.3			
	...	45- 9- 7	...	...	
	7- 8- 0	49- 8- 0	3-14- 5	53.3			
	11- 4- 0	82- 7- 2	36-13- 7	329			
	11- 4- 0	62- 8- 9	16-15- 2	151			
	30- 0- 0	91- 6- 0	...	...	
	26- 4- 0	115-12- 0	24- 6- 0	92.8			
	33-12- 0	140- 6- 0	49- 0- 0	145			
	37- 8- 0	96-14- 0	5- 8- 0	14.6			

F. Y. M. —Rs. 1-8-0 per cartload.

S/Ammonia. —Rs. 6-0-0 per 80-lb.

Leunaphos. —Rs. 9-0-0 per 80-lb.

Rotation-Tobacco-Cotton-Bajri-Wheat.

APPENDIX No. V (contd) (Para 36 (a) P. 14)

Statement showing fertilizer trials of cotton on Agricultural Experimental Station, Baroda in the year 1931-32.

Plots 33-34 (B) 27-28 (E)

Plot.	Treatment per acre.	Produce per acre lbs.	Value at Rs. 2-13-0 per 40 lbs.	Cost of cultivation.	Weight per 100 plants.	Difference.
1	2	3	4	5	6	7
			Rs. As. P.	Rs. As. P.		
B 1	Nil	544	38- 5- 0	101- 3- 6	14.7	
B 2	S. A. 100 ...	828	58- 4- 0	Do. 7- 8- 0	15.2	52%
B 3	Do. 150 ...	816	56- 5- 0	101- 3- 6 11- 4- 0	20.5	50%
B 4	L. P. 100 ...	900	63- 4- 6	101- 3- 6 11- 4- 0	16.6	41.5%
E 1	As in B 1 ...	676	47- 3- 5	90- 7- 2	21.2	
E 2	As in B 2 ...	678	47-10- 6	Do. 7- 8- 0	23.8	
E 3	As in B 3 ...	856	60- 3- 0	90- 7- 2 11- 4- 0	32.6	26.6%
E 4	As in B 4 ...	794	55-13- 2	90- 7- 0 11- 4- 0	20.5	17.4%

Abbreviations:—S. A. :—Sulphate of Ammonia.

L. P. :—Leuna Phos.

Note :—Figures in *italics* show the cost of fertilizer used and which is not included in the cost of cultivation given.

APPENDIX No. V (contd) (Para 36 (b) P. 14)

Statement showing fertilizer trials of tobacco on Agricultural Experimental Station, Baroda during the year 1931-32.

Plots 35-36 (A) 29-30 (D)

Plot No.	Treatment per acre.	Produce per acre lbs.	Value at Rs. 5 per 40 lbs.	Cost of cultivation.	Difference.
1	2	3	4	5	6
			Rs. As. P.	Rs. As. P.	Rs. As. P.
A 1	20 C. L. F. Y. M.	1,104	138- 0- 0	180- 7- 8	52- 7- 8
A 2	10 C. L. S. A. 180.	1,288	161- 0- 0	165- 7- 8 <i>11- 4- 0</i>	Minus.
A 3	10 C. L. S. A. 250.	1,448	181- 0- 0	165- 7- 8 <i>18-12- 0</i>	Minus.
A 4	10 C. L. L. P. 100.	1,264	158- 0- 0	165- 7- 8 <i>22- 8- 0</i>	Minus.
D 1	As in A 1.	688	86- 0- 0	152- 0- 4 <i>137- 0- 4</i>	Minus.
D 2	As in A 2.	856	107- 0- 0	<i>11- 4- 0</i>	Minus.
D 3	As in A 3.	928	116- 0- 0	137- 7- 4 <i>18-12- 0</i>	Minus.
D 4	As in A 4.	868	108- 8- 0	137- 0- 4 <i>22- 8- 0</i>	Minus.

Abbreviations :—F. Y. M. :—Farm Yard Manure.

C. L. :—Cart Load.

S. A. :—Sulphate of Ammonia.

Note :—Figures in *italics* show the cost of the fertilizer used and which is not included in the cost of cultivation given.

APPENDIX No. V—Contd. (Para 36 (c) P. 14.)

Statement showing fertilizer trials of Bajri on Agricultural Experimental Station, Baroda in the year 1931-32.

Plots 31-32 (C) 25-26 (F.)

Plot.	Treatment per acre.	Yield per acre lbs.	Average per acre lbs.	Value at Rs. 1-4-0 per 40 lbs.	Cost of cultivation.
1	2	3	4	5	6
				Rs. As. P.	Rs. As. P.
C 1	10 C. L. F. Y. M.	Grain 304	...	...	...
		Fodder 200	...	...	...
F 1	Do.	Grain 276	290	9- 1- 0	101- 1-10
		Fodder 248	224	3- 5- 9	...
C 2	5 C. L. F. Y. M.	Grain 504	...	...	...
	80 S. A.	Fodder 240	...	...	...
F 2	Do.	Grain 408	456	14- 4- 0	93- 9-10
		Fodder 280	260	3-14- 4	6- 0- 0
C 3	5 C. L. F. Y. M.	Grain 380	...	...	...
	120 S. A.	Fodder 304	...	...	...
F 3	Do.	Grain 352	386	11- 7- 0	93- 9-10
		Fodder 336	320	4-12- 9	9- 0- 0
C 4	5 C. L. F. Y. M.	Grain 324	...	...	...
	80 L. P.	Fodder 280	...	...	...
F 4	Do.	Grain 280	302	9- 7- 0	93- 9-10
		Fodder 312	296	4- 7- 1	9- 0- 0

Abbreviations:—C. L.—Cart Load.

F. Y. M. :—Farm Yard Manure.

S. A. :—Sulphate of Ammonia.

L. P. :—Leuna Phos.

Note:—Figures in italics show the cost of the fertilizer used and which is not included in the cost of cultivation given.

APPENDIX No. V—Contd. (Para 36 (d) P. 15.)

Statement showing fertilizer trials of wheat on Agricultural Experimental Station, Baroda in the year 1931-32.

Plots 31-32 (C) 25-26 (F.)

Plot.	Treatment per acre.	Out-turn per acre lbs.	Value at Rs. 1-10-0 per 40 lbs.			Cost of cultivation.		
			Rs.	As.	P.	Rs.	As.	P.
1	2	3	4			5		
C 1	Control ...	Grain 352	22-	6-	9	79-	13-	2
		Straw 1,088	7-	7-	4	...		
C 2	120 S. A. ...	Grain 992	44-	9-	9	79-	13-	2
		Straw 1,720	12-	1-	7	9-	6-	0
C 3	200 S. A. ...	Grain 968	39-	5-	2	79-	13-	2
		Straw 2,330	15-	2-	10	15-	0-	0
C 4	120 L. P. ...	Grain 992	40-	4-	9	79-	13-	2
		Straw 1,760	12-	8-	9	13-	8-	0
F 1	As in C 1 ...	Grain 744	30-	3-	7	45-	7-	0
		Straw 1,512	11-	1-	0	...		
F 2	As in C 2 ...	Grain 1,152	46-	12-	9	45-	7-	0
		Straw 2,256	15-	12-	1	9-	0-	0
F 3	As in C 3 ...	Grain 976	39-	10-	5	45-	7-	0
		Straw 2,832	18-	10-	6	15-	0-	0
F 4	As in C 4 ...	Grain 1,072	43-	8-	9	45-	7-	0
		Straw 3,280	14-	14-	4	13-	8-	0

Abbreviations :—S. A. Sulphate of Ammonia.
L. P.:—Leuna Phos.

Note:—Figures in italics show the cost of fertilizer used and which is not included in the cost of cultivation given,

APPENDIX No. VI (Para 44 P. 17.)

Statement showing the prices for the Agricultural Experimental Station

Baroda, products and average cost of manures purchased

during the year 1931-32.

S. No.	Name.	Average rate per 40 lbs.	Manures.	Average rate per 40 lbs.	Remarks.
		Rs. A. P.		Rs. A. P.	
1	2	3	4	5	6
1	Bairi	1- 4-0	Super phosphate.	1-14-0	
2	Wheat	1-10-0	Sulphate of Potash.	3-10-6	
3	Cotton	2-13-0	Sulphate of Ammonia	2- 7-0	
4	Gawar	2- 0-0	Soda Nitrate.	3- 8-0	
5	Castors	1-10-0	Bone-meal.	2- 8-0	
6	Tur	1- 8-0	Castor cake.	1- 4-0	
7	Bawata	0-12-0	Farm yard manure.	1- 4-0	
8	Kodra	0-10-0	Niciphos No. I.	4-14-0	
9	Jiru	7- 8-0	Niciphos No. II.	3- 8-0	
10	Mug	1- 6-0	Nitro-chalk.	3- 5-3	
11	Tobacco	2-13-0			
12	Ground-nut... ..	1- 8-0			
13	Seasamum	2- 8-0			
14	Lucerne green	0- 3-6			
15	„ seed	40- 0-0			
16	Sundhia 100 bundles.	2- 8-0			
17	Sundhia seed	1- 8-0			
18	Bajri bundles per 100.	1- 8-0			

APPENDIX No. VII (Para 44 P. 17.)

Statement showing rate of labour on the Agricultural Experimental Station
Baroda, Farm during the year 1931-32.

Item.	Charges.			Remarks.
	1929-30.	1930-31.	1931-32.	
1	2	3	4	5
	Rs. As. P.	Rs. As. P.	Rs. As. P.	
Labour.				
Farm men, prisoners,	0- 7- 0	0- 7- 1½	0- 7- 0	
Daily labour.	0- 5- 6	0- 5- 5½	0- 5- 2	
	Other charges.			
Engine.	0- 8- 6	0- 9- 0	0- 8- 6	Per one hour.
Bullocks.	1- 7- 0	1- 8- 0	1- 3- 0	Per one bullock.
	Miscellaneous.			
Including watching. general cleaning etc.	19- 0- 8	20- 2- 3	23- 3- 6	Per acre.

APPENDIX No. VIII (Para 46 P. 18.)

Statement showing the rain-fall measured on the Agricultural Experimental
Station Jagudan during the year 1931-32.

Date.	June 1931.	July. 1931.	August 1931.	September 1931.	October 1931.	Remarks.
1	2	3	4	5	6	7
	In. C.	In. C.	In. C.	In. C.	In. C.	
1	0-0	0-0	1-88	0-62	0-0	
2	0-0	0-0	1-28	0-20	0-0	
3	0-0	0-0	0-0	0-8	0-0	
4	0-0	0-0	0-0	0-0	0-0	
5	0-0	0-0	0-32	0-0	0-0	
6	0-0	0-0	0-0	0-0	0-0	
7	0-0	0-0	0-0	0-0	0-0	
8	0-0	0-0	0-10	0-0	0-0	
9	0-0	0-0	0-17	0-0	0-0	
10	0-0	0-50	0-55	0-0	0-21	
11	0-0	0-27	0-30	0-0	2-24	
12	0-0	0-0	5-36	0-0	0-11	
13	0-0	0-0	2-25	0-0	0-4	
14	0-0	0-0	0-38	0-0	0-21	
15	0-0	0-0	0-15	0-0	0-4	
16	0-0	0-0	4-62	0-0	0-0	
17	0-0	0-15	1-0	0-0	0-0	
18	0-0	0-96	3-22	0-0	0-0	
19	0-0	0-26	0-74	0-0	0-0	
20	0-0	0-17	0-10	0-0	0-0	
21	0-0	0-0	0-5	2-5	0-0	
22	0-0	0-17	0-0	0-0	0-0	
23	0-0	0-0	0-0	0-0	0-0	
24	0-0	0-0	1-23	0-13	0-0	
25	0-25	0-0	1-15	0-0	0-0	
26	0-0	0-0	0-12	0-0	0-0	
27	0-0	0-0	0-0	0-0	0-0	
28	0-0	0-16	0-8	0-0	0-0	
29	0-0	0-0	1-5	0-0	0-0	
30	0-0	0-0	0-18	0-0	0-0	
31	0-0	0-0	0-37	0-0	0-0	
Total.	0-25	2-47	26-70	3-8	2-75	Total rain 35-25

APPENDIX No. IX (Para 48 P. 19)

Statement showing the produce and value of the produce per plot of the Agricultural Experimental Station, Jagudan during the year 1931-32.

S. No.	Plot No.	Area.		Crop.	Produce.		Value of produce.	Remarks.
		B.	V.		Grain or fruits.	Bundles.		
1	2	3	4	5	6	7	8	9
					Mds. Srs.		Rs. As P.	
1	1-10	3	...	Lemon gooties.	635 No. of gooties.	...	158- 0- 0	
				Lemons.	141-14½	...	169- 3- 3	
				Papaya.	1-28½	...	2- 9- 0	
				Dhana.	5-12	...	13-14- 0	
				Castors.	1-33	...	3- 3- 0	
				Caul flower.	...	129	6- 0- 9	
2	11-12	1	...	Tobacco.	...	974 Padas.	243- 8- 0	
3	13-15	1	10	Bajri.	18-31	533	34- 2- 0	
	"	1	10	Wheat.	43-12	1.100	75-15- 0	
4	16-18	1	10	Cotton.	38-17	...	130- 0- 0	
5	19-20	1	...	Cotton.	19- 4	...	65- 0- 0	
6	21-22	1	...	Jowar.	10-36	357	25- 3- 0	
7	23-25	1	10	Jowar.	27- 0	562	49- 7- 6	
8	26-30	1	5	Bajri.	13-13	392	24- 8- 9	
	"	1	5	Wheat.	40-38	835	69-12- 3	
9	26-30	1	5	Bajri.	5-37	332	14- 0- 9	
	1							
	"	1	5	Wheat.	33- 2	810	57-11- 0	

APPENDIX No. IX (Para 48 P. 19.)—Contd.

S. No.	Plot No.	Area.		Crop.	Produce.		Value of produce.	Remarks.
		B.	V.		Grain or fruits.	Bundles.		
1	2	3	4	5	6	7	8	9
					Mds. Srs.		Rs. As. P.	
10	31	...	15	Bajri.	6-21	204	12- 3- 9	
	"	...	15	Wheat.	25- 4	550	43- 2- 0	
11	<u>31</u> 1	...	15	Potatoes.	31-10½	...	38-15- 3	
12	32-33	1	...	C.tton.	25- 9	...	84- 0- 0	
13	34	...	10	Jiru.	0-31	...	6- 3- 3	
	"	...	10	Bajri.	5-23	165	10- 4- 0	
14	35	1	10	Papaya.	352- 6	...	544-14- 6	
				Cabbage (red).	7-23	...	3-15- 2	
				Knol-khol.	...	156	1- 3- 6	
15	36	1	5	Chillies green.	8-15	...	7- 3- 6	
				Dry.	3-20	...	12-10- 6	
				Mustard.	23- 0	...	34- 8- 0	
16	37	...	10	Ginger.	11- 4	...	37-10- 9	
				Turmeric dry.	2-24	...	9- 8- 0	
				" green.	5- 0	...	5- 0- 0	
17	38	1	...	Lucerne grass.	463-10	...	72- 7- 6	
				Lucerne seeds.	0-20	...	15- 0- 0	

APPENDIX No. IX (Para 48 P. 19.)—Concl'd.

S. No.	Plot No.	Area.		Crop.	Produce.		Value of produce.	Remarks.
		B.	V.		Grain or fruits.	Bundles.		
1	2	3	4	5	6	7	8	9
					Mds. Srs.		Rs. As. P.	
18	39	...	5	Cabbage.	31-16 $\frac{1}{4}$	...	18-13- 0	
19	40	...	5	Oranges.	65 fruits	...	1- 3- 9	
				Lemons.	2-36	...	5-12- 0	
20	Nursery	5	...	Jowar.	...	101	4- 0- 0	
				Guwar.	7-15	...	9-10- 9	
				Castors.	16- 2	...	28- 0- 0	
				Mahuda.	12-27	...	6- 5- 6	
21	Extra field No. 1	7	...	Jowar.	17-13	940	54-15- 0	
22	Extra field No. 2	7	...	Bajri.	5-20	391	13-11- 0	
				Mug.	7- 8	...	12- 7- 0	
23	...	...	...	Green grass.	...	...	98- 4- 0	
				Miscellaneous.	...	...	4-12- 2	

APPENDIX No. X (Para 48 P. 19.)

Statement showing some average figures of expenditure incurred per Bigha
on the Agricultural Experimental Station Jagudan during the year
1931-32.

S. No.	Item.	Average rate of expense per bigha.	Remarks.
1	2	3	4
1	Depreciation for general Dead stock.	0- 7- 0	
2	Depreciation on watering facilities per watering	0- 2- 0	
3	Land assessment	3- 0- 0	Per bigha.
4	Miscellaneous expenses like cleaning field boundaries etc.	6- 5- 6	
5	Permanent labourer... ..	0- 7- 7	Per day.
6	Daily labourer	0- 3- 9	„
7	Bullock charge including depreciations... ..	0- 9- 0	„

APPENDIX No. XI (Para 54 P. 21.)

Statement showing the rainfall measured on the Agricultural Experimental Station Anreli during the year 1931-32.

Date.	June. 1931.	July. 1931.	August 1931.	Septem- ber 1931.	October 1931.	Novem- ber 1931.	Remarks.
1	2	3	4	5	6	7	8
	In. C.	In. C.	In. C.	In. C.	In. C.	In. C.	
1	0-0	0-6	0-11	0-23	0-11	0-0	
2	0-0	0-0	0-43	0-0	0-0	0-0	
3	0-0	0-2	0-0	0-0	0-0	0-8	
4	0-0	0-34	0-0	0-0	0-0	0-0	
5	0-0	0-23	0-5	0-3	0-5	0-0	
6	0-0	0-0	0-17	0-0	0-0	0-0	
7	0-0	0-0	0-19	0-0	0-0	0-0	
8	0-0	0-0	0-10	0-0	0-0	0-0	
9	0-0	0-0	0-34	0-0	0-0	0-0	
10	0-0	0-0	0-5	0-0	0-46	0-0	
11	0-0	0-9	0-0	0-0	0-34	0-0	
12	0-0	0-2	0-16	0-0	0-4	0-0	
13	0-0	0-0	0-55	0-0	0-4	0-0	
14	0-0	0-0	0-9	0-0	1-11	0-0	
15	0-22	0-0	0-3	0-0	0-0	0-0	
16	0-0	0-0	0-0	0-8	1-67	0-0	
17	0-0	0-0	0-16	0-0	0-0	0-0	
18	0-0	0-45	1-22	0-0	0-0	0-0	
19	0-0	0-21	0-1	0-9	0-0	0-0	
20	0-0	0-0	0-0	0-58	0-0	0-0	
21	0-0	0-6	0-0	1-25	0-0	0-0	
22	0-0	0-0	0-0	0-67	0-0	0-0	
23	0-0	0-0	0-0	0-0	0-0	0-0	
24	0-0	0-0	0-0	0-0	0-0	0-0	
25	0-0	0-0	0-0	0-0	0-0	0-0	
26	0-0	0-0	0-0	0-0	0-0	0-0	
27	0-0	0-40	0-0	0-0	0-0	0-0	
28	0-0	0-25	0-0	0-0	0-0	0-0	
29	0-4	0-3	1-84	0-0	0-0	0-0	
30	0-9	0-0	0-18	0-0	0-0	0-0	
31	0-0	0-12	0-0	0-0	0-0	0-0	
Total.	0-35	2-29	5-68	2-93	3-82	0-8	Total Rain 15-15

APPENDIX No. XII (Para 55 P. 23.)

Statement showing the area and value of crops grown on the Agricultural
Experimental Station Amreli in the year 1931-32.

S. No.	Name of the crop.	Area.		Yield.		Value.	Remarks.
		Bi-ghas.	Vasas.	Grain or other principal product	Fodder etc.		
1	2	3	4	5	6	7	8
				Mds. Srs.	Mds. Srs.	Rs. As.P.	
1	Cotton	5	10	13-22½	...	57-10-3	
2	Cotton mixture...	5	...	6-26	0-30 fodder	61- 3-6	
	Gram ... ..	...	...	4- 5	...	...
	Groundnut ... ..	...	...	9- 9	11-38 creepers	...	
	Tali ... ..	...	...	0-11	...	...
	Adadi ... ..	...	...	0- 7	...	...
3	Bajri	6	15	54- 5	941 bundles	132- 6-0	
4	Bajri mixture ...	1	...	9-26	130 bundles	22-14-0	
					2- 0 Mug creepers		
5	Wheat	2	10	24-31	...	46-13-9	
6	Groundnut	2	...	14-29	25-20 creepers	43- 3-0	
7	Adadi mixture ...	1	...	0-11	1- 0	21- 2-3	
	Groundnut ... ..	...	...	7- 7	8- 0 creepers	...	
8	Jowar	3	...	26-39	641 bundles	62- 6-3	

APPENDIX No. XII (Para 55 P. 23.)—Contd.

S. No.	Name of the crop.	Area.		Yield.		Value.	Remarks.
		Bi-ghas.	Vasas.	Grain or other principal product.	Fodder etc.		
1	2	3	4	5	6	7	8
				Mds. Srs.	Mds. Srs.	Rs. As.P.	
9	Til (Rabi) ...	...	10	2-12	...	7- 8-3	
10	Chillies ...	...	7½	4-25	...	13-15-0	
11	Tobacco...	...	7½	3-30	...	12-11-6	
12	Spices Ajmo ...	...	15	1-36	...	39- 5-6	
	Onions ...	...	...	61-16	...	...
13	Papaya and lucerne...	...	15	46- 0	...	} 26-11-9	
	Tur ...	...	...	1-19	...		...
14	Lucerne...	...	15	244-20	...	} 123- 9-3	
	Mustard...	...	...	0-26	...		...
15*	Sugarcane ...	1	...	...	...	137- 7-0	
	Tur ...	...	...	2-23	...	} 23- 5-6	
	Castors ...	...	..	5-25	...		...
	Walol ...	...	...	1-12	...		...
16	Fallow for sugarcane ...	1	...	...	...	...
	Mug ...	...	...	1- 0	27- 0 creepers	} 10-12-0	
	Maize ...	...	...	...	7- 0		...
17	Fruit trees and vegetables ...	4	...	...	...	223- 3-9	

* Rs. 60-0-0 by auction and
Rs. 77-7-0 by selling seed.

APPENDIX No. XII (Para 55 P. 23.)—Concl'd.

S. No.	Name of the crop.	Area.		Yield.		Value.	Remarks.
		Bi-ghas.	Vasas.	Grain or other principal produce.	Fodder etc.		
1	2	3	4	5	6	7	8
				Mds. Srs.	Mds. Srs.	Rs. As.P.	
STRIP AREA.							
1	Groundnut ...	1	...	3-32	15- 6 creepers	13- 4-6	
2	Bajri ...	...	10	4- 3	71 bundles	9-15-6	
3	Cotton ...	...	10	0-23	...	2- 7-0	
4	Papaya and seed beds ...	...	10	...	...	27- 4-0	
5	Jowar fodder and vegetables ...	1	...	...	99-20	33-14-0	
6	Til (Rabi) ...	1	...	0-37	...	3- 0-0	
7	Gram ...	..	10	2-25½	...	3- 4-9	
8	Ginger, Yam, Turmeric etc. ...	...	6	...	...	4-11-3	
9	Castors small ...	...	3	0-16	...	1- 3-3	
CATTLE AREA.							
1	Groundnut ...	7	...	40-24	47-35 creepers	113- 7-6	
2	Cotton ...	7	...	13-10¼	...	57- 0-0	
PANCHAYET NURSERY.							
1	Plants re: Neem, Mango etc. ...	2	...	617 plants	...	48-15-0	
2	Jowar ...	7	...	14-22½	1,371	84-14-9	
KIRKOL MISCELLANEOUS.							
1	F. Y. M. 20 cart-loads ...	...	...	...	...	20- 0-0	

APPENDIX No. XIII (Para 72 P. 30.)

Statement showing pure cotton seed (1,027 A) distributed in different Taluks of the Navsari District in the year 1931-32.

S. No.	Name of Taluka.	Quantity distributed lbs.	Remarks.
1	2	3	4
1	Navsari	67,550	
2	Mahuwa	6,825	
3	Gandevi	900	
4	Vyara	30,000	
	Total	1,05,275	

APPENDIX No. XIV (Para 78 P. 33.)

Statement showing improved implements purchased in Navsari District in the year 1931-32.

S. No.	Name of cultivator.	Village.	Taluka.	Name of implement.	Total expenditure.	Amount of subsidy.
1	2	3	4	5	6	7
1	Bhagubhai Parbhudas ...	Popda.	Navsari.	Mc Cormick cultivator 2.	65- 5-0	33- 5-0
2	Chhaganlal Gulabbhai ...	Bagumara.	Palsana.	Oliver plough 1.	12- 0-0	6- 0-0
3	Sheth Dinshw Ratanaji Dabu.	Dhanori.	Gandevi	" 2.	24- 0-0	0- 0-0
4	Shah Dalichand Gamnaji...	Kanpura.	Vyara.	Malwa cultivator 1.	18- 4-0	9- 4-0
5	P. Motiram Jairam ...	Valan.	Kamrej.	Oliver plough 1.	12- 2-0	6- 2-0
6	Paragaji Mohanbhai ...	Dhamdacha	Gandevi.	" 1.	12- 2-0	6- 2-0
7	Gulam Mahamad Saleji ...	Mangrol.	Mangrol.	Leveller plough 1.	22-12-0	10-12-0
8	Motiram Shankerji ...	Valan.	Kamrej.	Oliver plough 1.	12- 0-0	6- 0-0
9	Sheth Ibrahim Ismail ...	Kosamba.	Mangrol.	Oliver plough 1.		
10	Nathubhai Bhimbhai ...	Maroli.	Navsari.	Chaffcutter 1.	82- 7-3	41- 7-3
11	P. Bhagabhai Bhaktibhai ...	Orna.	Kamrej.	{ Mc Cormick cultivator 1.	79- 8-0	40- 0-0
12	P. Chaturbhai Lallubhai ...	Tarsadi.	Mangrol.	{ " 1.		19- 8-0
13	P. Gordhanbhai Tulsibhai.	"	"	{ Chaffcutter 1.	63- 2-0	19- 2-0
				{ Chaffcutter hand plough 1.		9- 0-0
	Totat ...	...	...	16	403-10-3	206-10-3

APPENDIX No. XV (Para 93 P. 39.)

Statement of improved ploughs sold by help of the Department in Amreli District in the year 1931-32.

S. No.	Item.	Place.	Taluka.	Kind of plough.	Amount given as help.	Remarks.
1	2	3	4	5	6	7
1	Narshi Pradhan.	Velva.	Kodinar.	B. T. 2 (Sankheda make)	6- 4-0	
2	Latib Ali.	Giria.	Amreli.	Chatanooga 55 American	13- 8-0	
3	Naran Bhagwan.	Saram- bhada.	Amreli.	„	13- 8-0	
4	Laxman Lakha.	Lassa.	Khamba.	„	13- 8-0	
5	Jadav Jiva.	Kubda.	Dhari.	„	13- 8-0	
6	Jivraj Gopal.	Govindpur.	Dhari.	„	13- 8-0	
7	Ahmed Virji.	Harmadia.	Kodinar.	„	13- 8-0	
8	Ramji Ismail.	Harmadia.	Kodinar.	„	13- 8-0	
9	Hari Khima.	Trimbak- pur.	Dhari.	„	13- 8-0	
10	Harising Dosaji.	Kathma.	Amreli.	„	13- 8-0	
11	Koli Vira Jina.	Harmadia.	Kodinar.	„	13- 8-0	
12	Govind Varsing.	Adpokar.	Kodinar.	„	13- 8-0	

APPENDIX No. XVI (Para 98 P. 42.)

Statement showing the list of leaflets published from the Department.

AGRICULTURE.

- 1 Bone meal as manure for cotton.
- 2 Lucerne grass.
- 3 Papaya plantation.
- 4 Re: Organizing co-operative cotton sale societies.
- 5 Use of Sod um Nitrate for onions.
- 6 Use of Sodium Nitrate for tobacco as top dressing.
- 7 Treatment of smut in Jowar.
- 8 Suitability of nine-one cotton for Kahnram tract in Baroda District and its distribution.
- 9 Silo pits.
- 10 Method of using Sodium Nitrate for tobacco.
- 11 Cattle urine and its importance as manure.
- 12 Leaflet regarding cabbage cultivation.
- 13 Care of roots of Fruit trees.
- 14 Early Kolam.
- 15 Sann as green manure for Kharip crops in Gujarat.
- 16 Protection of wheat from rust.
- 17 Improved variety of tobacco No. 6.
- 18 Use of Poona furnace for improved kind of Gul boiling.
- 19 Ammonium Sulphate as manure for Sugar Canes.
- 20 Practical method of storing Farm Yard Manure.
- 21 Use of Sulphur for removing Anjia from Jowar.
- 22 Dry farming.
- 23 Silo and silage making.

AGRICULTURAL ENGINEERING.

- 1 Working of the Agricultural Engineering.
- 2 Improved types of iron implements.
- 3 Use of Dynamite in blasting wells.
- 4 Bucket pump or Persian wheel.

VETERINARY.

- 1 Common diseases of cattle and their country remedies.
- 2 Some helpful hints for treating sick animals.
- 3 Epidemic diseases and their indigenous remedies.
- 4 Helpful hints for care of healthy animals.
- 5 General instructions regarding working of the Veterinary Dispensaries.
- 6 Necessity of improvements in cattle breeding.
- 7 Burdizzo castrator or the bloodless method of castration.
- 8 Epidemic diseases and their principal preventive remedies.
- 9 Importance of pure breed bulls for breeding purposes.

APPENDIX No. XVII (Para 106 P. 44.)

Statement showing the list of applications received for Boring during the year 1931-32.

Serial No.	Name of Taluka.	Last year's Balance.	Received this year.	Total.	Boring done.	Applications cancelled.	Owners unwilling.	Balance at the end of the year.	Remarks.
1	2	3	4	5	6	7	8	9	10
Baroda District.									
1	Savli	1	...	1	...	...	...	1	
2	Sankheda	1	...	1	...	...	...	1	
3	Petlad	1	1	2	2	...	...	...
4	Baroda ... ..	...	5	5	5	...	...	...
	Total	3	21	9	7	...	...	2	
Navsari District.									
1	Gandevi... ..	1	3	4	2	...	1	1	
2	Palsana... ..	...	1	1	...	...	...	1	
3	Mangrol... ..	...	1	1	1	...	...	...
	Total	1	5	6	3	...	1	2	
Mehsana District.									
1	Mehsana ... ..	...	3	3	3	...	...	...
2	Kheralu... ..	1	...	1	1	...	...	...
3	Sidhpur	1	...	1	1	...	...	...
4	Patan ... ..	...	1	1	1	...	...	...
5	Chansma ... ..	...	1	1	1	...	...	...
6	Kadi	1	4	5	4	...	...	1	
7	Vijapur ... ..	...	1	1	1	...	...	...
8	Dehgam... ..	1	...	1	1	...	...	...
	Total	4	10	14	13	...	...	1	
	Grand Total	8	21	29	23	...	1	5	

APPENDIX No. XVIII (Para 106 P. 44.)

Statement showing the number of Bore-holes made during the year 1931-32.

Serial No.	Village.	Taluka.	Successful.	Unsuccessful.	Abandoned at the request of well owners.	Incomplete.	Total.	Water in Koses.	Remarks.
1	2	3	4	5	6	7	8	9	10
WITH CAWNPORE SET.			Baroda District.						
1	Baroda	Baroda.	1	...	...	...	1	1	
2	Makarpura	"	1	...	...	1	2	1	
3	Bil	"	1	...	...	...	1	4	
4	Sayajipura	"	1	...	...	...	1	1	
5	Chhani	"	1	...	...	...	1	1	
6	Madhavpura ... ..	"	...	...	...	1	1	...	
7	Por ... ..	"	...	...	...	1	1	...	
8	Kanzat	Padra.	1	...	...	...	1	4	
9	Dalli	Petlad.	1	...	...	...	1	5	
10	Sojitra	"	1	...	...	...	1	2	
		Total ...	8	...	...	3	11	19	
WITH CALYX DRILL.			Navsari District.						
1	Borkhadi	Vyara.	...	...	1	...	1	...	
WITH CAWNPORE SET.									
2	Nimalai... ..	Navsari.	...	...	...	1	1	...	
3	Kosamba	Mangrol.	1	...	...	...	1	1	
4	Atalia	Gandevi.	2	...	...	...	2	1	
		Total ...	3	...	1	1	5	2	

APPENDIX No. XVIII (Para 106 P. 44.)—Contd.

Serial No.	Village.	Taluka.	Successful.	Unsuccessful.	Abandoned at the request of the well owners.	Incomplete.	Total.	Water in Koses.	Remarks.		
1	2	3	4	5	6	7	8	9	10		
			Mehsana District.								
			WITH MUSTO PATENT.								
1	Unja	Sidhpur.	...	...	...	1	1	...	
			WITH CAWNPORE SET.								
2	Jorangan	Mehsana.	2	...	...	...	2	2	
3	Zulasan... ..	"	1	...	...	...	1	1	
4	Vadnagar	Kheralu.	...	1	...	...	1	...	
5	Manund... ..	Patan.	...	...	...	1	1	...	Arte sian well.
6	Kamboi	Chansma.	1	...	...	...	1	1	
7	Thadod (Thodmal pura)	Kadi.	...	...	...	1	1	...	
8	Rajpur	"	1	...	...	1	2	1½	
9	Khorajnadoda ... ..	"	...	...	...	1	1	...	
10	Vasai	Vijapur.	1	...	...	...	1	2	
11	Magodi	Dehgam.	...	1	...	...	1	...	
			Total ...	6	2	...	5	13	7½		
			Grand Total ...	17	2	1	9	29	28½		

APPENDIX No.
Statement showing Boring work done

Serial No	Name of well owner.	Name of village.	Name of Taluka	Depth of well.	Depth of Boring.	Water before boring in koses.	Water after boring in koses.	No. of working days.
1	2	3	4	5	6	7	8	9
							BARODA	
1	Patel Motibhai Trikamdas.	Kanzat.	Padra.	60'-0"	111'-0"	1	4	75
2	Parsharam Balvant Ganpule.	Sayajiganj Baroda.	Baroda.	0'-0"	73'-6"	...	1	18
3	Makarpura Dairy Farm.	Makarpura.	Baroda.	54'-0"	54'-0"	1	1	33
4	Patel Motibhai Nathabhai.	Dali.	Petlad.	52'-0"	71'-0"	1	5	19
5	Nathabhai Garbadbhai Patel.	Bill.	Baroda.	48'-0"	44'-0"	2	4	19
6	Makarpura Dairy Farm.	Makarpura.	Baroda.	54'-0"	84'-0"	1	...	27
7	Ramchandra More-swar Khale.	Sayajipura.	Baroda.	90'-0"	26'-0"	$\frac{1}{4}$	1	11
8	Patel Rambhai Somabhai.	Sojitra.	Petlad.	40'-0"	75'-0"	1	2	4
9	Amin Nathabhai Motibhai.	Chhani.	Baroda.	50'-0"	117'-6"	1	1	31
10	Sardar Ramchandra Narayan Ambe-gaokar.	Madhav-pura.	Baroda.	0'-0"	116'-6"	...	...	85
11	Patel Maganbhai Isvarlal.	Por.	Baroda.	90'-0"	69'-0"	2	...	15
			Total.	2 $\frac{1}{2}$ ' 4"	26'-0" 815'-0"	...	19	337
					841'-6"			

XIX (Para 106 P. 53.)
during the year 1931-32.

Diameter of Bore.	Departmental charges.	Labour charges.	Total cost.	Cost per foot.	Purpose of Boring.	Result.	Remarks.
10	11	12	13	14	15	16	17
DISTRICT.							
4"	0- 0-0	363- 8-0	363- 8-0	3- 4- 5	Agriculture.	Successful.	
4"	80- 0-0	137- 7-0	217- 7-0	2-15- 8	Private.	"	
4"	0- 0-0	228- 8-0	228- 8-0	4- 3-10	Agriculture.	"	
4"	19- 9-0	96- 4-0	115-13-0	1-10- 1	"	"	
4"	0- 0-0	48-12-0	48-12-0	1- 1- 9	"	"	
4"	0- 0-0	185-10-0	185-10-0	2- 3- 8	"	Incomplete.	
2½	0- 0-0	46-15-0	46-15-0	1-13- 6	"	Successful.	
4"	7- 0-0	16- 0-0	23- 0-0	0- 4-10	"	"	Hole cleaned.
4"	35- 0-0	155-12-0	190-12-0	1-10- 0	"	"	
4"	61- 0-0	359- 4-0	420- 4-0	3-10- 0	"	Incomplete.	
4"	0- 0-0	77- 4-0	77- 4-0	1- 1-11	"	"	
...	202- 9-0	1715- 4-0	1917-13-0	2- 4- 0			

Serial No.	Name of well owner.	Name of village.	Name of Taluka.	Depth of well.	Depth of Boring.	Water before boring in koses.	Water after boring in koses.	No. of working days
1	2	3	4	5	6	7	8	9
NAVSARI								
1	Rustomji Jamsaji Gardaji.	Nimalai.	Navsari.	50'-0"	95'-6"	2	...	24
2	Bamanshao Merwanji.	Borkhadi	Vyara.	35'-0"	29'-8"	1	...	21
3	Ibrahim Ismail Dandji.	Kosamba	Mangrol.	22'-0"	76'-6"	$\frac{1}{4}$	1	3
4	Bachubai Arde-sharji Bilimoria.	Antalia.	Gandevi.	53'-0"	55'-0"	1	$\frac{1}{2}$	25
5	Bachubai Arde-sharji Bilimoria.	"	"	53'-0"	44'-6"	$1\frac{1}{2}$	$\frac{1}{2}$	10
Total.				4"	301'-2"	...	2	83
MEHSANA								
1	Patel Khusaldas Jethidas.	Jorangan.	Mehsana.	36'-0"	105'-0"	$\frac{1}{2}$	1	21
2	Patel Khusaldas Jethidas.	"	"	36'-0"	44'-0"	$1\frac{1}{2}$	1	3
3	Patel Gangaram Narsidas.	Zulasan.	"	25'-0"	74'-6"	$\frac{1}{2}$	1	12
4	Patel Manchand Kuberdas.	Vadnagar	Kheralu.	60'-0"	0'-0"	...	...	...
5	Barot Pratapsingh Vaghajibhai.	Unja.	Sidhpur.	50'-0"	30'-6"	...	...	14

NIX (Para 106 P. 53.)

Diameter of Bore.	Departmental charges.	Labour charges.	Total cost.	Cost per foot.	Purpose of Boring.	Result.	Remarks.
10	11	12	13	14	15	16	17
DISTRICT.							
4"	0-0-0	103-4-0	108-4-0	1-2-3	Agriculture.	Incomplete.	
4"	0-0-0	27-7-0	27-7-0	0-15-1	"	Abandoned at the request of the well owner.	
4"	0-0-0	8-4-0	8-4-0	0-1-9	"	Successful.	Hole cleaned.
4"	0-0-0	95-8-0	95-8-0	1-11-9	"	"	
4"	0-0-0	32-8-0	32-8-0	0-11-10	"	"	
...	0-0-0	271-15-0	271-15-0	0-14-5			
DISTRICT.							
4"	25-0-0	81-2-0	106-2-0	1-0-2	Agriculture.	Successful.	
4"	0-0-0	18-12-0	18-12-0	0-6-9	"	"	
4"	0-0-0	33-11-0	33-11-0	0-7-3	"	"	
4"	...	...	...	...	"	Unsuccessful. Abandoned at the request of well owner.	
2½"	0-0-0	250-12-0	250-12-0	8-11-5	"	Incomplete.	

APPENDIX No.

Serial No.	Name of well owner.	Name of village.	Name of Taluka.	Depth of well.	Depth of Boring.	Water before boring in koses.	Water after boring in koses.	No. of working days.
1	2	3	4	5	6	7	8	9
6	Shah Keshavlal Chunilal.	Manund.	Patan.	48'-0"	20'-0"	3	...	3
7	Patel Magan Bhairchand and Patel Shiva Jeram.	Kamboi.	Chansma.	From the ground level.	180'-0" 117'-0" 297'-0"	...	1	62
8	Haribhai Muljibhai.	Thadod (Thodmalpura.)	Kadi.	32'-0"	0'-0"	...	...	...
9	Patel Khusaldas Jesingdas and Mohan Jesingdas.	Rajpur.	..	50'-0"	87'-0"	½	1½	11
10	Patel Shankerdas Muldas.	"	"	40'-0"	181'-0"	¼	...	33
11	Patel Motibhai Govindbhai.	Khoraj Nadoda.	..	30'-0"	72'-0"	¼	...	35
12	Patel Chhaganlal Sakalchand.	Vasai.	Vijapur.	30'-0"	181'-9"	½	2	33
13	Patel Jijidas Bhajidas.	Magodi.	Dehgam.	33'-0"	68'-5"	¼	...	73
			Total.	2½" 3" 4"	1161'-2" 147'-6" 449'-9" 563'-11" 1161'-2"	...	7½	300
		Grand Total.	Total.	2½" 3" 4"	173'-6" 449'-9" 1680'-7" 2303'-10"	...	28½	720

XIX (Para 106 P. 44.)

Diameter of Bore.	Departmental charges.	Labour charges.	Total cost.	Cost per foot.	Purpose of Boring.	Result.	Remarks.
10	11	12	13	14	15	16	17
4"	0- 0- 0	12- 3-0	12- 3-0	0- 9- 9	Agriculture.	"	
4" 2½"	0- 0- 0	156- 1-0	156- 1-0	1- 0-11	"	Successful.	Artesian well.
4"	...	...	...	...	"	Incomplete.	
3"	0- 0- 0	29-10-0	29-10-0	0- 5- 5	"	Successful.	
3"	0- 0- 0	100- 5-0	100- 5-0	0- 8-10	"	Incomplete.	
4"	0- 0- 0	80- 4-0	80- 4-0	1- 1-10	"	"	
3"	0- 0- 0	118-14-0	118-14-0	0-10- 5	"	Successful.	
4"	14- 0- 0	303-13-0	317-13-0	4- 4-11	"	Unsuccessful.	
...	39- 0- 0	1185-7-0	1224-7-0	...			
...	241- 9-0	3172-10-0	3414-3-0	1- 8- 0			

APPENDIX No. XX (Para 106 P 44)

Statement showing the number of wells bored in different Talukas till the end of 1931-32.

Serial No.	Name of District and Taluka.	From 1911-12 to 1930-31.					For 1931-32.					Total to the end of 1931-32.					Remarks.
		Successful.	Water in koses.	Unsuccessful.	Incomplete.	Total.	Successful.	Water in koses.	Unsuccessful.	Incomplete.	Total.	Successful.	Water in koses.	Unsuccessful.	Incomplete.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
BARODA DISTRICT.																	
1	Petlad ...	207	717½	24	3	234	2	7	...	...	2	209	724½	24	3	236	
2	Bhadran ...	110	472	14	1	125	...	...	...	...	...	110	472	14	1	125	
3	Padra...	72	210½	12	2	86	1	4	...	...	1	73	214½	12	2	87	
4	Baroda ...	143	301	29	11	183	5	8	...	3	8	148	309	29	14	191	
5	Vaghodia ...	11	15	5	...	16	...	...	...	...	...	11	15	5	...	16	
6	Savli ...	14	22	8	...	22	...	...	...	...	...	14	22	8	...	22	
7	Karjan ...	28	64½	2	1	31	...	...	...	...	...	28	64½	2	1	31	
8	Sinor ...	5	12	...	...	5	...	...	...	...	...	5	12	...	...	5	
9	Dabhoi ...	1	1	5	...	6	...	...	...	...	...	1	1	5	...	6	
10	Sankheda ...	8	7½	...	1	9	...	...	...	...	...	8	7½	...	1	9	
	Total ...	599	1,823	99	19	717	8	19	...	3	11	607	1,842	99	22	728	

MEHSANA DISTRICT.

11	Visnagar ...	143	254½	48	5	196	...	...	...	...	...	143	254½	48	5	196
12	Dehgam ...	102	208½	20	1	123	...	...	1	...	1	102	208½	21	1	124
13	Mehsana ...	42	74½	11	4	57	3	3	...	...	3	45	77½	11	4	60
14	Vijapur ...	33	68	6	2	41	1	2	...	...	1	34	70	6	2	42
15	Kalol ...	16	25	4	1	21	...	...	...	...	...	16	25	4	1	21
16	Sidhpur ...	13	23½	8	3	24	...	...	...	1	1	13	23½	8	4	25
17	Atarsumba ...	9	13	1	...	10	...	...	...	...	...	9	13	1	...	10
18	Kadi ...	46	62½	14	9	69	1	1½	...	...	3	47	64	14	12	73
19	Chansma ...	15	20½	8	5	28	1	1	...	...	1	16	21½	8	5	29
20	Patan ...	12	16	7	2	21	...	...	...	1	1	12	16	7	3	22
21	Kheralu ...	1	1	10	2	13	...	...	1	...	1	1	1	11	2	14
22	Harij... ...	...	...	1	1	2	...	...	...	...	...	...	...	1	1	2
	Total ...	432	767	138	35	605	6	7½	2	5	13	438	774½	140	40	618
NAVSARI DISTRICT.																
23	Navsari ...	59	89	9	4	72	...	...	...	1	1	59	89	9	5	73
24	Gandevi ...	26	46½	3	...	29	2	1	...	...	2	28	47½	3	...	31
25	Kamrej ...	15	17½	4	...	19	...	...	...	...	...	15	17½	4	...	19
26	Mahuva ...	10	16	5	3	18	...	...	...	...	...	10	16	5	3	18
27	Palsana ...	17	37	1	...	18	...	...	...	...	...	17	37	1	...	18
28	Vyara ...	7	9½	3	5	15	...	...	1	...	1	7	9½	4	5	16
29	Kantswell (Bansda State.)	1	1	1	...	2	...	...	...	...	...	1	1	1	...	2
30	Mangrol ...	1	1	1	...	2	1	1	...	...	1	2	2	1	...	3
	Total ...	136	218	27	12	175	3	2	1	1	5	139	220	28	13	180

APPENDIX No. XX (Para 106 P. 44.)

Serial No.	Name of District and Taluka.	From 1911-12 to 1930-31.					For 1931-32.					Total to the end of 1931-32.					Remarks.
		Successful.	Water in koses.	Unsuccessful.	Incomplete.	Total.	Successful.	Water in koses.	Unsuccessful.	Incomplete.	Total.	Successful.	Water in koses.	Unsuccessful.	Incomplete.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
				AMRELI DISTRICT.													
31	Okha Mandal ...	13	9½	6	...	19	...	...	...	...	...	13	9½	6	...	19	
32	Amreli ...	7	11	4	3	14	...	...	...	...	...	7	11	4	3	14	
33	Kodinar ...	2	...	...	...	2	...	...	...	...	...	2	...	...	...	2	
34	Bet ...	2	1	...	...	2	...	...	...	...	...	2	1	...	...	2	
35	Khambha ...	1	1	1	...	2	...	...	...	...	...	1	1	1	...	2	
36	Damnagar ...	2	3	2	1	5	...	...	...	...	...	2	3	2	1	5	
	Total ...	27	25½	13	4	44	...	...	...	...	...	27	25½	13	4	44	
	Grand Total ...	1,194	2,833½	277	70	1,541	17	28½	3	9	29	1,211	2,862	280	79	1,570	

APPENDIX No. XXI (Para 106 b. P. 45).

Abstract of Boring work done during the year 1931-32.

Serial No.	Particulars.	District.				Total.
		Baroda.	Navsari.	Kadi.	Amreli.	
1	2	3	4	5	6	7
1	Bores made ...	11	5	13	...	29
2	Bores successful ...	8	3	6	...	17
3	Bores unsuccessful ...	...	...	2	...	2
4	Bores abandoned at the request of the well owner ...	...	1	...	...	1
5	Bores incomplete ...	3	1	5	...	9
6	Total depth bored					
	2½"	26'-0"	0'-0"	147'-6"	...	173'-6"
	3"	0'-0"	0'-0"	449'-9"	...	449'-9"
	4"	815'-6"	301'-0"	563'-11"	...	1680'-7"
7	Percentage of success	72-8	60-0	75-0	...	58-6
8	Water in koses ...	19	2	7½	...	28½
9	No. of applications ...	6	5	10	...	21
10	Average number of working days per each bore ...	30	16	23	...	24
11	No. of accidents ...	2	1	8	...	11
12	Accidents removed ...	2	1	8	...	11
13	Average number of feet bored in one day ...	2'-6"	3'-7"	3'-11"	...	...

APPENDIX No. XXII (Para 107 P. 46).

A statement showing the number of wells exploded by Dynamite in the year 1931-32.

Serial No.	Name of Taluka.	Number of wells taken.	Number of cartridges used.	Number of detonaters used.	Diametre of well.	Number of feet sunk.	Number of cubic feet sunk.	Water in Koses.	Departmental charges.	Expense per cubic feet.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
BARODA DISTRICT.											
Savli Taluka.											
1	Sherpura (Vakilpura).	1	36	10	10'- 0''	1'-6''	117'-10''	‡	9-14- 0	0- 1- 4	
2	Moti Bhandar ...	1	27	5	15'- 0''	2'-0''	353'- 7''	‡	6-15- 0	0- 0- 3	
NAVSARI DISTRICT.											
Vyara Taluka.											
1	Ghat	1	38	13	7'- 0''	6'-6''	250'- 3''	1	11- 3- 0	0- 0- 9	
2	Dolvan Panchayat ...	1	48	16	7'- 0''	3'-6''	134'- 9''	1	24- 0- 0	0- 2-10	
3	Dhani Panchayat ...	1	11	4	8'- 0''	...	...	...	5-12- 0	...	
Mangrol Taluka.											
1	Mangrol (Vakilpura)...	1	21	7	9'- 0''	3'-6''	222'- 9''	‡	6- 2- 0	0- 0-5	

Amreli Taluka.				AMRELI DISTRICT.								
1	Amreli	...	...	1	27	7	15'x12'	4'-0''	720'- 0''	$\frac{1}{2}$	4- 4- 0	0- 0- 1
2	Amreli	...	...	1	93	18	12'x11'	6'-0''	792'-0''	$\frac{1}{2}$	13-14- 0	0- 1- 1
3	Amreli	...	...	1	90	22	10'x10'	5'-6''	550'- 0''	1	14- 0- 0	0- 0- 4
4	Amreli	...	...	1	51	9	11'x10'	5'-0''	550'- 0''	1	7- 8- 0	0- 0- 2
5	Amreli	...	...	1	60	10	11'x10'	6'-0''	660'- 0''	1	8-12- 0	0- 0- 2
6	Amreli	...	...	1	159	41	12'x11'	9'-0''	1,188'-0''	$\frac{1}{2}$	25- 0-0	0-0- 4
7	Amreli	...	...	1	31	5	12'x10'	2'-6''	300'-0''	1 $\frac{1}{2}$	4- 8-0	0-0- 3
8	Amreli	...	...	1	36	6	9'x 8'	2'-6''	180'-0''	$\frac{1}{2}$	5- 4-0	0-0- 5
9	Amreli	...	...	1	30	5	8'x 8'	2'-6''	160'-0''	1	4- 6-0	0-0- 5
10	Amreli	...	...	1	120	20	12'x12'	7'-0''	1,008'-0''	$\frac{1}{4}$	17- 8-0	0-0- 2
11	Amreli	...	...	1	87	16	12'x 0'	3'-6''	396'-0''	$\frac{1}{4}$	12-14-0	0-0- 6
12	Amreli	...	...	1	108	19	12'x 0'	5'-0''	565'-8''	$\frac{1}{2}$	15-14-0	0-0- 5
13	Amreli	...	...	1	221	58	12'x10'	8'-0''	960'-0''	...	34-14-0	0-0- 7
14	Amreli	...	...	1	36	6	22'x 8'	2'-6''	440'-0''	$\frac{1}{2}$	5- 4-0	0-0- 2
15	Amreli	...	...	1	36	6	16'x16'	2'-0''	512'-0''	1	5- 4-0	0-0- 2

APPENDIX No. XXII (Contd.)

Serial No.	Name of Taluka.	Number of wells taken.	Number of cartridges used.	Number of detonater used.	Diametre of well.	Number of feet sunk.	Number of cubic feet sunk.	Water in Koses.	Departmental charges.	Expense per cubic feet.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
16	Kerianagas ...	1	37	11	12'x 6'	1'-0''	72'-0''	2	6- 0-0	0-1- 4	
17	Kerianagas ...	1	70	13	11'x 7'	2'-6''	192'-6''	½	10- 6-0	0-0-10	
18	Kerianagas ...	1	70	15	8'x 5'	4'-6''	180'-0''	½	10-10-0	0-0-11	
19	Kerianagas ...	1	16	4	10'x 6'	1'-6''	90'-0''	1	2- 8-0	0-0- 5	
20	Mota Akadia...	1	326	78	12'x11'	12'-6''	1,650'-0''	...	50- 8-0	0-0- 6	
21	Mota Akadia...	1	102	23	11'x 0'	10'-0''	950'-8''	1	15-10-0	0-0- 3	
22	Mota Akadia...	1	24	5	17'x 9'	3'-0''	459'-0''	1	3-10-0	0-0- 1	
23	Mota Akadia...	1	24	7	12'x 9'	2'-6''	270'-0''	...	3-14-0	0-0- 3	
24	Mota Akadia...	1	39	8	10'x 9'	2'-6''	225'-0''	½	5-14-0	0-0- 5	
25	Sanosara ...	1	66	11	9'x 8'	3'-6''	252'-0''	1	9-10- 0	0- 0- 7	
26	Sanosara ...	1	30	7	9'x 8'	1'-3''	90'-0''	...	4-10- 0	0- 0-10	

27	Sanosara	1	49	9	9'x 8'	3'-0''	216'-0''	1	7- 4- 0	0- 0- 6
28	Fatepur	1	66	14	13'x11'	7'-6''	1,072'-6''	3	10- 0- 0	0- 0- 2
29	Fatepur	1	42	10	12'x10'	2'-6''	300'-0''	1	6- 8- 0	0- 0- 4
30	Malvan	1	48	10	9'x 0'	4'-0''	254'-6''	1	7- 4- 0	0- 0- 5
31	Malvan	1	27	5	10'x10'	2'-6''	250'-0''	1	4- 0- 0	0- 0- 3
32	Mangvupal	1	48	12	9'x 7'	3'-6''	220'-0''	2	7- 8- 0	0- 0- 7
33	Mangvupal	1	45	10	9'x 6'	2'-6''	135'-0''	1	6-14- 0	0- 0- 9
34	Mangvupal	1	48	12	12'x 8'	2'-6''	240'-0''	1	7- 8- 0	0- 0- 6
35	Nana Machiala	1	135	29	7'x 6'	8'-6''	357'-0''	1	20- 8- -	0- 0-11
36	Nana Machiala	1	63	14	9'x 7'	5'-0''	315'-0''	1	9-10- 0	0- 0- 6
37	Nana Machiala	1	51	10	6'x 0'	3'-0''	84'-10''	$\frac{1}{4}$	7-10- 0	0- 1- 5
38	Iswaria	1	84	26	8'x 6'	5'-0''	240'-0''	1	13-12- 0	0- 0-11
39	Nana Ehandaria	1	30	10	9'x 8'	0'-0''	0'-0''	...	5- 0- 0	0- 0- 0
40	Champathal	1	45	10	7'x 6'	2'-6''	105'-0''	2	6-14- 0	0- 1- 0
41	Champathal	1	27	6	11'x 9'	2'-6''	247'-6''	2	4- 2- 0	0- 0- 3
42	Champatha I... ..	1	9	3	10'x 0'	1'-9''	137'-6''	1	1- 8- 0	0- 0- 2
43	Champathal	1	24	4	9'x 8'	2'-0''	144'-0''	1	3- 8- 0	0- 0- 4

APPENDIX No. XXII (Contd.)

Serial No.	Name of Taluka.	Number of wells taken.	Number of cartridges used.	Number of detonaters used.	Diametre of well.	Number of feet sunk.	Number of cubic feet sunk.	Water in Koses.	Departmental charges.	Expense per cubic feet.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
44	Nana Akadia... ..	1	30	5	15'x 8'	2'-6"	300'-0"	½	4- 6- 0	0- 0- 3	
45	Nana Akadia	1	9	2	8x' 8'	1'-6"	96'- 0"	½	1- 6-0	0- 0- 3	
46	Chakarghad	1	50	10	9x' 6'	2'-6"	135'- 0"	1	7- 8-0	0- 1- 2	
47	Chakarghad	1	87	27	11'x9'	3'-0"	297'- 0"	2	14- 4-0	0- 0- 9	
48	Rangpur	1	90	20	20'x12'	3'-0"	720'- 0"	1	13-12-0	0- 0- 3	
49	Dholarva	1	66	16	9'x7'	2'-6"	157'- 0"	1	10- 4-0	0- 1- 0	
50	Vithalpur (Kham- bhalia).	1	30	5	8'x6'	2'-6"	120'- 0"	1	4- 6-0	0- 0- 7	
51	Vithalpur (Kham- bhalia).	1	42	9	8'x8'	3'-0"	192'- 0"	1	6- 6-0	0- 0- 6	
52	Kamighad	1	24	6	10'x8'	3'-0"	240'- 0"	1½	3-12-0	0- 0- 3	
53	Kamighad	1	24	7	12'x9'	1'-0"	108'- 0"	½	3-14-0	0- 0- 7	

54	Kamighad	1	13	3	9'x7'	1'-0''	63'- 0''	$\frac{1}{4}$	2- 0-0	0- 0- 5
55	Kamighad	1	13	3	20'x12'	2'-6''	600'- 2''	$\frac{1}{2}$	2- 0-0	0- 0- 0
56	Varsada	1	26	5	10'x8'	3'-0''	240'- 0''	1	3-14-0	0- 0- 3
57	Varsada	1	30	5	9'x7'	3'-0''	189'- 0''	1	4- 6-0	0- 0- 4
58	Varsada	1	30	5	9'x7'	3'-0''	189'- 0''	$\frac{1}{2}$	4- 6-0	0- 0- 4
59	Varsada	1	36	6	12'x8'	3'-0''	288'- 0''	1	5- 4-0	0- 0- 4
60	Jetpur	1	261	71	14'x14'	11'-6''	2,254'- 0''	...	118- 8-0	0- 0-10
Damanagar Taluka.										
1	Damnagar	1	24	6	8'x7'	2'-6''	140'- 0''	1	3-12-0	0- 0- 5
2	Sakhpur	1	132	27	9'x8'	8'-6''	612'- 0''	2	19-14-0	0- 0- 6
3	Sakhpur	1	30	5	3'x0'	3'-0''	21'- 2''	1	4- 6-0	0- 3- 4
4	Sakhpur	1	11	3	15'x10'	3'-0''	450'- 0''	1	1-12-0	0- 0- 0
5	Virpur	1	24	8	9'x8'	2'-0''	144'- 0''	...	4- 0-0	0- 0- 5
6	Karkalia	1	56	17	12'x9'	3'-0''	32'4- 0''	$\frac{3}{4}$	10- 6-0	0- 0- 6
7	Dhamel	1	60	11	12'x10'	5'-6''	660'- 0''	1	8-14-0	0- 1- 9
8	Dhamel	1	30	5	8'x7'	2'-6''	140'- 0''	$\frac{1}{2}$	4- 6-0	0- 0- 6
9	Dhamel	1	49	10	9'x7'	3'-0''	169'- 0''	1	7- 6-0	0- 0- 7

APPENDIX No. XXII (Contd.)

Serial No.	Name of Taluka.	Number of wells taken.	Number of cartridges used.	Number of detonater used.	Diametre of well.	Number of feet sunk.	Number of cubic feet sunk.	Water in Koses.	Departmental charges.	Expense per cubic feet.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
10	Dhamel	1	30	5	8'x8'	3'-0''	192'- 0''	1	4- 6-0	0- 0- 4	
11	Chavad Panchayat ...	1	742	188	15'x15'	11'-0''	2,175'- 0''	...	326- 8-0	0- 2- 2	
12	Chavad Panchayat ...	1	132	22	12'x0'	9'-0''	108'- 3''	...	49- 8-0	0- 7- 4	
13	Chavad	1	24	4	8'x8'	2'-6''	160'- 0''	...	9- 0-0	0- 0-10	
14	Naranghad Panchayat.	1	118	33	8'x8'	5'-6''	352'- 0''	...	54- 4-0	0- 2-10	
	Khambha Taluka.										
1	Anida... ..	1	110	26	7'x6'	6'-0''	252'- 0''	‡	17- 0-0	0- 1-10	
2	Anida... ..	1	10	3	7'x6'	2'-0''	84'- 0''	...	1-10-0	0- 0- 4	
3	Vankia	1	99	31	8'x6'	3'-0''	144'- 0''	‡	16- 4-0	0- 1-10	

Dhari Taluka.											
1	Trambakpur ...	...	1	117	25	12'x 9'	8'-0''	864'- 0''	1	17-12- 0	0- 0- 4
2	Do. ...	...	1	120	29	9'x 5'	7'-6''	337'- 6''	...	18-10- 0	0- 0-10
3	Bhalgam ...	...	1	56	12	10'x10'	2'-6''	250'- 0''	$\frac{1}{2}$	8- 8- 0	0- 0- 6
4	Do. ...	...	1	115	22	10'x10'	5'-2''	550'- 0''	...	45- 4- 0	0- 0- 4
Panchayat.											
5	Devla Panchayat ...	...	1	40	10	8'x 0'	2'-0''	100'- 6''	...	17- 8- 0	0- 0- 9
6	Dhari ,, ...	...	1	24	6	8'x 0'	2'-6''	125'- 0''	...	10- 8- 0	0- 0- 6
7	Dhari... ..	...	1	30	8	15'x 8'	2'-6''	300'- 0''	$\frac{1}{2}$	4-12- 0	0- 0- 1
For trial.											
	Dwarka ...	...	...	3	1	...	...	...	...	...	...
	Material used in Navsari and Baroda Districts.	...	6	181	56	...	...	...	$3\frac{1}{2}$	...	63-14- 0
	Found short in boxes. (Taking average of 50 in each box.)	...	...	6	...	...	...	...	...	...	...

Water in 5 wells.

APPENDIX No. XXII (Contd.)

Serial No.	Name of Taluka.	Number of wells taken.	Number of cartridges used.	Number of detonater used.	Diametre of well.	Number of feet sunk.	Number of cubic feet sunk.	Water in Koses.	Departmental charges.	Expense per cubic feet.	Remarks.
1	2	3	4	5	6	7	8	9	10	11	12
	Material used in Amreli District.	84	5,887	1,346	...	...	...	64 Water in 68 wells.	...	1308-2-0	
	Found short in boxes.	...	117	...	...	...	...	...	...	...
	Grand Total ...	90	6,191	1,402	...	...	33674'-11"	67½ Koses water in 69 wells.	1372-0-0	...	

Farmers' Bill... ... Rs. 711- 4- 0

Panchayat Bill ... Rs. 660-12- 0

APPENDIX No. XXIII (Para 116 P. 49)

Statement showing the strength of the herd of the Makerpura Palace Dairy on 31st July 1932.

Serial No.	Description.	Strength on 1st August 1931.	Changes during the year 1931-32.								Total number of animals on 31st July 1932.
			Sold	Dead.	Born.	Bought.	Transferred from heifers to cows and buffaloes.	Transferred from calves to heifer young bull.	Animals sent to Panjara pole.		
1	1	2	3	4	5	6	7	8	9	10	11
1	Cows ...	24	2	...	...	...	3	...	4	21
2	Heifers ...	5	...	...	...	...	3	...	...	2
3	Cows female youngs ...	9	8	...	9	...	...	...	...	10
4	Cows male youngs	19	13	3	11	...	...	...	...	14
5	Stud bulls ...	1	...	...	...	1	...	...	1	1
6	Buffaloes ...	27	2	2	...	3	1	...	...	27
7	B. Heifers ...	2	...	...	...	...	1	...	...	1
8	B. F. calves ...	13	5	5	10	3	...	...	...	16
9	B. M. calves ...	13	9	3	10	...	...	...	...	11
10	Stud bulls ...	1	...	...	...	...	...	...	...	1
11	Bullocks ...	6	...	1	...	...	...	...	...	5
	Total ...	120	39	14	40	7	8	...	5	109	

APPENDIX No. XXIV (Para 120 P. 51)

Statement showing the articles of food stuffs, weight and total price of concentrates fed to the Dairy cattle during the year 1931-32.

Serial No.	Name of the food stuff.	Total weight fed.	Total price.	Remarks.
1	2	3	4	5
		Mds. Srs.	Rs. As. Ps.	
1	Cotton seed ...	849-35	919- 4- 2	
2	Kormu ...	713-18	1,068-12-11	
3	Bran ...	656-26	1,340- 1- 6	
4	Gawar ...	476-32	846-10- 3	
5	Oil cake ...	461- 4	815-14- 4	
6	Salt ...	66-21	87-15- 2	

APPENDIX No. XXV (Para 121 P. 51)

Statement showing the figures of expenditure under different heads of the Makerpura Palace Dairy in the year 1931-32.

16 A. R.	Fodder by contract.	Concentrates and water.	Medi-cal.	Attendance.	Transport.	Supervision.	Cost of fodder production on the farm.	Bhatta and Bhada.	Kirkol.	Stationary and Dead stock.	Cattle purchase.	Refund.
	1	2	3	4	5	6	7	8	9	10	11	12
	Grass by contractor. 1,637-4-9	Concentrates. 4,570-6-0	46-1-9	2344-8-11	2,078-15-7 with Motor Driver's pay.	3,297-5-1	3,278-14-3 with field man's pay.	804-8-0	2,059-2-1	441-8-1	443-9-0	
	Bid charges. 1,077-9-0	Water. 332-1-0										
	Engine house. 223-0-0	4,209-7-0										
	Dairy farm grass. 4,144-6-3											
	7,082-4-0											
	Total expenditure Rs. 26,779-3-9.											

APPENDIX XXVI (Para. 124 P. 52).

Statement showing the distribution of premium bulls and stallions.

Kind.	Navsari District.	Mehsana District.	Baroda District.	Amreli District.
1	2	3	4	5
Bulls Vadhiar 27.	Vyara Taluka. Kapura. Kalkuva. Ghat. Dolvan. Singpur. Chikhalda. Mypur. Kanpura. Songadh Taluka. Vajarda. Vajba. Kharsi. Vekur. Jamapur. Mahuva Taluka. Amchak. Ghadol. Koni Hatia. Karchelia. Vaghara. Gagdia. Vadia.	Patan Taluka. Adola. Kadi Taluka. Kadi.	Petlad Taluka. Petlad. Vaghodia Taluka. Devalia.	

<p>Bull buffalo Jafarabadi 1. Bulls gir 4.</p>	<p>Odach. Kamrej Taluka. Pardi. Variav. Umbhel.</p>			<p>Amreli Taluka. Vankia. Chandagadh. Devalia. Dhari Taluka. Kabda. Amreli.</p>
<p>Stallion 1.</p>				

*Stationed at the Veterinary Dispensary.

APPENDIX No. XXVII.

Statement showing the number of patients treated in the dispensary and mortem performed

S. No.	Name of the District and dispensary.	Last year's cases remained on hand.	Out-door.				In-door.				Grand	
			Equine.	Bovine.	Others.	Total.	Equine.	Bovine.	Others.	Total.	Equine.	Bovine.
1	2	3	4	5	6	7	8	9	10	11	12	13
Baroda D.												
1	Baroda ...	60	397	1147	601	2145	5	14	...	19	402	1161
2	Bhadran ...	19	52	1220	85	1357	...	...	...	...	52	1220
3	Dabhoi ...	58	151	1234	383	1768	...	...	...	...	151	1234
4	Karjan ...	21	111	791	38	940	...	...	...	...	111	791
5	Petlad ...	19	45	898	213	1156	...	...	...	...	45	898
6	Sinor ...	28	138	1306	286	1730	...	9	...	9	138	1315
7	Sankheda ...	12	91	1118	59	1268	3	11	...	14	94	1129
	Total ...	217	985	7714	1665	10364	8	34	...	42	593	7748
Mehsana D.												
1	Chanasma ...	30	177	1614	118	1909	...	...	...	...	177	1614
2	Kadi ...	13	133	1282	518	1933	...	...	...	...	133	1282
3	Kalol ...	...	71	561	253	885	1	11	2	14	72	572
4	Mehsana ...	43	110	576	223	909	15	99	...	114	125	675
5	Patan ...	50	229	1026	264	1519	...	...	...	...	229	1026
6	Sidhpur ...	33	166	2456	720	3342	...	...	...	...	166	2456
7	Unjha ...	28	44	1239	183	1466	...	1	...	1	44	1240
8	Vadnagar ...	...	126	609	234	969	8	6	1	15	134	615
9	Vijapur ...	25	167	845	229	1241	1	2	...	3	168	847
	Total ...	222	1223	10208	2742	14173	25	119	3	147	1248	10327

(Para 128 p. 54).

Castrations performed by Burdizzo method, other operations and post-
for the year 1931-32.

total.		Result.					Post mortem.	Operation.			Mofussil cases.	Castration by Burdizzo.	Daily average.	
Others.	Total.	Cured.	Relieved.	Died.	Remained on hand.	Major.		Minor.	Total.	Out-door.			In-door.	
14	15	16	17	18	19	20	21	22	23	24	25	26	27	
601	2164	1962	177	23	62	2	42	94	136	582	1	24.8	.9	
85	1357	1269	50	20	53	...	14	22	36	653	...	21.5	...	
383	1768	999	776	12	43	...	67	54	121	872	...	32	...	
38	940	717	228	2	14	...	24	23	47	820	6	18.5	...	
213	1156	1124	22	5	24	...	21	19	40	633	4	23	...	
286	1739	1544	189	11	23	...	23	43	66	837	10	22.2	.6	
59	1282	1203	55	6	30	...	23	39	62	1179	2	19	1	
1665	10406	8818	1497	79	249	2	214	294	508	5576	23	161	1.15	
118	1909	1648	237	2	25	...	144	153	297	833	14	49	...	
518	1933	1494	421	12	19	...	36	65	101	1152	4	22	...	
255	899	781	92	...	26	...	60	46	106	374	...	25	.8	
223	1023	756	249	16	45	...	83	59	142	621	8	39	...	
264	1519	1221	295	38	15	...	90	53	143	680	27	35	...	
720	3342	3278	67	49	16	...	89	46	135	2643	6	50	...	
183	1467	1243	190	28	26	...	61	40	101	743	2	27	...	
235	984	829	106	18	31	...	57	74	131	374	2	19	...	
229	1244	1165	364	...	40	...	35	33	68	671	11	19	.15	
2745	14320	12415	2021	163	243	...	655	569	1224	8091	74	285	.23	

APPENDIX XXVII.

S. No.	Name of the District and dispensary.	Last year's cases remained on hand.	Out-door.				In-door.				Grand	
			Equine.	Bovine.	Others.	Total.	Equine.	Bovine.	Others.	Total.	Equine.	Bovine.
1	2	3	4	5	6	7	8	9	10	11	12	13
	Navsari D.											
1	Karchalia ...	25	36	1132	385	1553	...	...	...	...	36	1132
2	Mangrol ...	5	198	456	24	678	...	...	...	...	198	456
3	Orna ...	13	36	599	89	724	...	...	...	...	36	599
4	Vesma ...	7	31	782	12	825	...	4	...	4	31	786
5	Vyara...	24	108	817	394	1319	...	...	...	...	108	817
	Total ...	74	409	3786	904	5099	...	4	...	4	409	3790
	Amreli D.											
1	Amreli ...	16	262	1134	168	1564	3	38	2	43	265	1172
2	Dhari ...	...	90	414	59	563	...	...	...	...	90	414
3	Kodinar ...	51	256	1764	138	2158	1	1	...	2	257	1765
	Total ...	67	608	3312	365	4285	4	39	2	45	612	3351
	Grand total ...	580	3225	25020	5676	33921	37	196	5	238	3262	25216

(Para 128 p. 54).—(Concl'd.)

total		Result.					Post mortem.	Operation.			Mofussil cases.	Castration by Burdizzo.	Daily average.	
Others.	Total.	Cured.	Relieved.	Died.	Remained on hand.	Major.		Minor.	Total.	Out-door.			In-door.	
14	15	16	17	18	19	20	21	22	23	24	25	26	27	
385	1553	1450	80	3	45	...	112	71	183	1268	61	49	...	
24	678	554	112	9	8	...	17	52	69	490	26	9.21	...	
89	724	626	80	6	25	...	49	25	74	450	10	19.5	...	
12	829	788	44	1	3	...	25	29	54	563	25	14	...	
394	1319	1186	124	12	21	...	64	21	85	754	42	27.9	...	
904	5103	4604	440	31	102	...	267	198	465	3525	164	118.35	...	
170	1607	1432	171	4	16	...	45	66	111	730	13	24	.5	
59	563	483	51	6	23	...	36	48	84	295	4	21	...	
138	2160	1767	413	4	27	...	19	34	53	1516	259	15	...	
367	4330	3682	635	14	66	...	100	148	248	2541	276	60	.5	
5681	34159	29519	4593	287	660	...	21236	1209	2445	19733	537	624.35	1.43	

APPENDIX No. XXVIII

Statement showing the classification of diseases of animals

S. No.	Name of the District and Dispensary.	Specific.	Nervous.	Circulatory.	Skeleton.	Eye and ear.	Skin.	Lymphatic.
1	2	3	4	5	6	7	8	9
	Baroda D.							
1	Baroda	47	162	5	13	38	165	63
2	Bhadran	78	2	6	1	48	39	...
3	Dabhoi	14	45	77	82	70	96	61
4	Karjan	81	...	...	5	33	10	3
5	Petlad	30	1	13	13	44	26	...
6	Sinor	180	121	52	14	44	9	2
7	Sankheda	24	2	8	26	29	47	1
	Total	454	333	161	154	306	392	130
	Mehsana D.							
1	Chanasma	35	16	34	219	34	903	31
2	Kadi... ..	40	3	...	12	37	23	...
3	Kalol	182	2	14	98	22	12	1
4	Mehsana	6	1	4	148	100	279	...
5	Patan	75	3	6	38	46	33	3
6	Sidhpur	1,227	155	97	47	42	201	...
7	Unjha	238	116	36	16	38	116	3
8	Vadnagar	115	16	53	56	19	180	1
9	Vijapur	70	3	...	51	42	94	...
	Total	1,988	315	244	685	380	1,846	39

(Para 128 p. 54).

in the dispensaries during the year 1931-32.

Digestive.	Respiratory.	Urinary.	Genetial.	Cancer of horn.	For Castration.	Miscellaneous.	Total.	Remarks.
10	11	12	13	14	15	16	17	18
535	1	78	6	72	1	978	2,164	
229	6	7	6	10	...	925	1,357	
231	44	40	33	36	...	939	1,768	
158	22	14	18	40	1	555	940	
184	1	12	6	14	4	808	1,156	
122	13	10	16	24	10	1,122	1,739	
83	10	19	2	28	2	1,001	1,282	
1,542	97	180	87	224	18	6,328	10,466	
199	55	15	20	156	11	176	1,909	
338	28	24	16	45	4	1,363	1,933	
83	5	9	28	48	...	395	899	
135	63	48	61	73	8	79	1,023	
181	17	20	30	107	1	959	1,519	
160	20	12	38	38	6	1,299	3,342	
86	29	11	18	66	2	692	1,467	
112	15	4	9	41	2	361	984	
211	4	16	8	51	11	683	1,244	
1,505	236	159	228	625	45	6,025	14,320	

APPENDIX No. XXVIII

S. No.	Name of the District and Dispensary.	Specific.	Nervous.	Circulatory.	Skeleton.	Eye and ear.	Skin.	Lymphatic.
1	2	3	4	5	6	7	8	9
	Navsari D.							
1	Karchalia	59	6	35	99	69	11	18
2	Mangrol	10	3	2	27	44	227	6
3	Orna	12	6	18	3	14	52	...
4	Vesma	18	...	92	53	32	6	...
5	Vyara	36	6	4	62	68	22	...
	Total ...	135	21	151	244	227	318	24
	Amreli D.							
1	Amreli	10	...	18	18	43	40	3
2	Dhari	33	13	47	75	30	173	22
3	Kodinar	38	2	5	10	14	3	5
	Total ...	81	15	70	103	87	216	30
	Grand Total ...	2,658	684	626	1,186	1,000	2,772	223

(Para 128 p. 54).—(Concl'd.)

Digestive.	Respiratory.	Urinary.	Genetial.	Cancer of horn.	For castration.	Miscellaneous.	Total.	Remarks.
10	11	12	13	14	15	16	17	18
118	14	5	6	35	61	1,017	1,553	
92	14	9	4	14	26	200	678	
142	32	8	28	33	10	366	724	
52	9	3	9	14	25	516	829	
122	11	6	8	23	42	909	1,319	
526	80	31	55	119	164	3,008	5,103	
240	65	47	93	55	14	961	1,607	
65	23	15	1	22	4	40	563	
114	30	2	6	28	259	1,644	2,160	
419	118	64	100	105	277	2,645	4,330	
3,992	531	434	470	1,073	504	18,006	34,159	

APPENDIX No. XXIX (Para 130 p. 55)

Statement showing the number of out-break reports received and attended during the year 1931-32.

Serial No.	Name of the District and dispensary.	Reports received.							Report attended.							Reports not attended.						
		Rinderpest.	Anthrax.	Foot and mouth.	Other diseases.	Haemorrhagic Septicaemia.	Surra.	Total.	Rinderpest.	Anthrax.	Foot and mouth.	Other diseases.	Haemorrhagic Septicaemia.	Surra.	Total.	Rinderpest.	Anthrax.	Foot and mouth.	Other diseases.	Haemorrhagic Septicaemia.	Surra.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
	Baroda D.																					
1	Baroda	...	...	...	...	7	...	7	...	...	...	...	7	...	7	...	...	...	...	...	...	...
2	Bhadran	...	...	4	3	7	...	14	...	...	4	3	7	...	14	...	...	...	...	...	...	...
3	Dabhoi	...	...	...	...	11	...	11	...	...	...	...	11	...	11	...	...	...	...	...	...	...
4	Karjan	...	...	3	...	2	...	5	...	...	3	...	2	...	5	...	...	...	...	...	...	...
5	Petlad	...	8	...	...	3	...	11	8	...	...	...	3	...	11	...	...	...	...	...	...	...
6	Sinor	...	...	1	...	1	...	2	...	...	1	...	1	...	2	...	...	...	...	...	...	...
7	Sankheda	...	...	...	...	1	...	1	...	...	...	...	1	...	1	...	...	...	...	...	...	...
	Total	...	8	...	8	3	...	32	8	...	8	3	32	...	51	...	...	...	...	...	...	...

Mehsana D.																					
1	Chanasma	...	...	...	2	1	1	...	4	...	...	2	1	1	...	4	...	...	...	...	...
2	Kadi	...	...	...	3	...	...	...	3	...	...	3	...	...	...	3	...	...	...	...	...
3	Kalol	...	1	...	...	...	1	...	2	1	...	...	...	1	...	2	...	...	...	...	...
4	Mehsana	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Patan	...	...	...	3	...	...	...	3	...	...	3	...	...	...	3	...	...	...	...	...
6	Sidhpur	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Unjha	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Vadnagar	...	...	...	3	...	...	...	3	...	...	2	...	...	...	2	...	...	1	...	1
9	Vijapur	...	...	...	2	...	1	...	3	...	...	2	...	1	...	3	...	...	...	...	...
Total		...	1	...	13	1	3	...	18	1	...	12	1	3	...	17	...	...	1	...	1
Navsari D.																					
1	Karchelia	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Mangrol	...	4	...	...	2	3	...	9	4	...	...	2	3	...	9	...	...	...	...	...

APPENDIX No. XXIX (Para 130 p. 55).—(Concl'd.)

Serial No.	Name of the District and dispensary.	Reports received.							Reports attended.							Reports not attended.						
		Rinderpest.	Anthrax.	Foot and mouth.	Other diseases.	Haemorrhagic Septicaemia.	Surra.	Total.	Rinderpest.	Anthrax.	Foot and mouth.	Other diseases.	Haemorrhagic Septicaemia.	Surra.	Total.	Rinderpest.	Anthrax.	Foot and mouth.	Other diseases.	Haemorrhagic Septicaemia.	Surra.	Total.
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
3	Orna	...	...	...	...	4	...	4	...	...	...	...	4	...	4	...	...	...	...	...	...	...
4	Vesma	...	1	...	...	1	...	2	1	...	...	...	1	...	2	...	...	...	...	...	...	...
5	Vyara	...	1	...	...	1	...	2	1	...	...	...	1	...	2	...	...	...	...	...	...	...
	Total	...	6	...	...	2	9	...	17	6	...	...	2	9	...	17	...	...	...	...	...	...
	Amreli D.																					
1	Amreli	...	3	...	...	...	...	3	3	...	...	...	...	...	3	...	...	...	...	...	...	...
2	Dhari	...	2	...	...	...	...	2	2	...	...	...	...	...	2	...	...	...	...	...	...	...
3	Kodinar	...	5	...	1	...	...	6	5	...	1	...	...	...	6	...	...	...	...	...	...	...
	Total	...	10	...	1	...	...	11	10	...	1	...	...	...	11	...	...	...	...	...	...	...
	Grand Total	...	25	...	22	6	44	...	97	25	...	21	6	44	...	96	...	...	1	...	...	1

APPENDIX No. XXX (Para 130 p. 55).

Statement showing the result of preventive inoculation by the Veterinary Surgeons during the year 1931-32.

Serial No.	Name of the District and dispensary.	Name of the disease against which inoculation was carried out.	Method of inoculation.	Number of out-break.		No. of animals which died uninoculated in course of outbreak.				No. of animals which were inoculated.				No. of animals which died after inoculation.				Remarks.
						Equine.	Bovine.	Others.	Total.	Equine.	Bovine.	Others.	Total.	Equine.	Bovine.	Others.	Total.	
1	2	3	4	5		6	7	8	9	10	11	12	13	14	15	16	17	18
	Baroda D.			H. S. & R. P.														
1	Baroda ...	Haemorrhagic Septi.	Hypodermic inoculation with serum and vaccin for H. S. & only serum for R. P.	7	0	...	49	60	109	...	382	...	382	...	...	...	...	...
2	Bhadran ...	"	"	7	0	...	8	...	8	...	100	...	100	...	...	...	...	...
3	Dabhoi ...	"	"	11	0	...	62	...	62	...	598	...	598	...	...	...	...	...
4	Karjan ...	"	"	2	0	...	49	...	49	...	60	...	60	...	...	...	...	...
5	Petlad ...	" & Rinder pest.	"	3	8	...	133	...	133	...	50	...	50	...	...	...	...	...
6	Sinor ...	"	"	1	0	...	10	...	10	...	...	...	...	...	...	...	...	...
7	Sankheda ...	"	"	1	0	...	6	...	6	...	...	...	...	...	...	...	...	...
	Total ...	...	...	32	8	...	317	60	377	...	1,190	...	1,190	...	...	...	...	...

APPENDIX No. XXX (Para 130 p. 55).

Serial No.	Name of the District and dispensary.	Name of the disease against which inoculation was carried out.	Method of inoculation	Number of out-break.	No. of animals which died uninoculated in course of out-break.				No. of animals which were inoculated.				No. of animals which died after inoculation.				Remarks.
					Equine.	Bovine.	Others.	Total.	Equine.	Bovine.	Others.	Total.	Equine.	Bovine.	Others.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Mehsana D.																	
1	Chanasma ...	Haemorrhagic septi.	...	1 0	...	...	...	...	...	5	...	5	...	...	...	...	...
2	Kadi ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
3	Kalol ...	H. S. & R. P.	...	1 1	...	2	...	2	...	2,857	...	2,857	...	1	...	1	...
4	Mehsana ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
5	Patan ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
6	Sidhpur ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
7	Unjha ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
8	Vadnagar ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9	Vijapur ...	H. S.	...	1 0	...	15	...	15	...	...	...	...	...	...	...	...	...
	Total ...	...	...	3 1	...	17	...	17	...	2,862	...	2,862	...	1	...	1	...
Navsari District.																	
1	Karchalia ...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
2	Mangrol ...	H. S. & R. P.	...	3 4	...	78	...	78	...	222	...	222	...	...	...	...	...

3	Orna	H. S.	...	4	0	...	37	...	37	...	127	...	127	...	...	...
4	Vesma	H. S. & R. P.	...	1	1	...	...	...	...	...	17	...	17	...	...	...
5	Vyara	H. S. & R. P.	...	1	1	...	26	...	26	...	13	...	13	...	...	...
	Total	...	...	9	6	...	141	...	141	...	379	...	379	...	...	...
	Amreli D.																
1	Amreli	R. P.	...	0	3	...	12	...	12	...	32	...	32	...	...	...
2	Dhari	"	...	0	2	...	4	...	4	...	68	...	68	...	...	...
3	Kodinar	"	...	0	5	...	86	...	86	...	193	...	193	...	...	...
	Total	...	...	0	10	...	102	...	102	...	293	...	293	...	...	...
	Grand Total	44	25	...	577	60	637	...	4,724	...	4,724	...	1	...	1

APPENDIX No. XXXI (Para 131 p. 55)

Statement showing the number of animals treated, villages visited, castration by Burdizzo performed and days spent on tour in the year 1931-32.

Serial No.	Name of the District and the dispensary.	Contagious.				Non-contagious.				Number of villages visited.	Days spent on tour.	Castration by Burdizzo performed on tour.				Remarks.
		Equine.	Bovine.	Others.	Total.	Equine.	Bovine.	Others.	Total.			Equine.	Bovine.	Others.	Total.	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
	Baroda D.															
1	Baroda ...	...	...	...	...	21	187	8	216	41	67	...	...	...	...	...
2	Bhadran ...	...	...	...	...	...	385	...	385	41	58	...	...	...	...	...
3	Dabhoi ...	...	...	...	...	...	...	...	...	11	14	...	...	...	...	...
4	Karjan ...	...	143	54	197	8	55	2	65	43	47	...	1	...	...	1
5	Petlad ...	...	352	...	352	...	34	...	34	78	94	...	...	...	...	...
6	Sinor... ..	...	34	...	34	31	702	41	774	15	96	...	1	...	...	1
7	Sankheda ...	...	...	...	...	1	5	...	6	36	29	...	2	...	...	2
	Total	...	529	54	583	61	1368	51	1480	265	405	...	4	...	...	4
	Mehsana D.															
1	Chanasma ...	...	696	...	696	...	829	...	829	41	117	...	...	...	...	...
2	Kadi ...	...	118	...	118	...	176	...	176	38	64	...	...	...	...	...
3	Kalol ...	...	80	60	140	1	77	12	90	24	39	...	...	...	...	...
4	Mehsana ...	...	...	...	...	...	403	...	403	54	67	...	42	...	...	42
5	Patan... ..	...	93	...	93	...	5	...	5	32	72	...	...	...	...	...

6	Sidhpur	...	...	...	...	3	673	437	1113	39	67	...	81	...	81
7	Unjha	...	...	...	...	57	153	...	154	23	51	...	...	...	...
8	Vadnagar	...	...	...	...	77	15	20	44	34	25	1	3	...	4
9	Vijapur	...	...	...	...	121	...	...	...	62	55	...	3	...	3
	Total	1242	60	1302	14	2331	469	2814	347	557	1	129	...	130
	Navsari D.															
1	Karchalia	...	...	...	...	...	38	...	38	22	26	...	...	...	...
2	Mangrol	...	...	...	...	...	104	...	104	42	51	...	...	...	...
3	Orna...	...	...	...	...	...	88	...	88	21	47	...	15	...	15
4	Vesma	...	...	...	...	...	...	...	...	26	31	...	45	...	45
5	Vyara...	...	...	...	...	...	540	...	540	30	33	...	131	...	131
6	Vyara castration	...	...	...	...	...	...	...	...	123	153	...	646	...	646
	Total	...	...	...	...	...	770	...	770	264	341	...	837	...	837
	Amreli D.															
1	Amreli	...	...	1	...	1	49	1	51	14	20	...	34	...	34
2	Dhari...	...	...	...	...	...	18	...	18	46	55	...	15	...	15
3	Kodinar	61	...	61	22	273	6	301	121	107	...	148	...	148
	Total	62	...	62	23	340	7	370	181	182	...	197	...	197
	Grand Total	1833	114	1947	98	4809	527	5434	1057	1485	1	1167	...	1168

APPENDIX No. XXXII.

Statement showing the receipt and expenditure of the

Serial No.	Name of the District and the dispensary.	Expenditure and receipt for the			
		Pay.	Travelling allowance.	Medicine charges.	Other expenditure.
1	2	3	4	5	6
	Baroda D.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Baroda... ..	2,323-15- 5	120- 3- 0	784- 1- 4	528- 8- 0
2	Rhadran	1,127- 3- 5	145- 5- 6	441-15- 9	487-15- 0
3	Dabhoi... ..	1,743-11- 2	28-14- 3	453- 9- 0	792-12- 0
4	Karjan	1,392- 0- 0	55- 3- 6	472- 4- 9	158-12- 0
5	Petlad	1,641- 0- 0	177- 4- 6	424-14- 8	439-12- 7
6	Sinor	1,465-10- 2	268-13- 3	385-11- 2	420- 6- 0
7	Sankheda	1,502- 9- 7	70- 9- 9	271- 5- 6	467-12- 0
	Total	11,196- 1- 9	866- 5- 9	3,233-14- 2	3,295-13- 7
	Mehsana D.				
1	Chanasma	1,368- 0- 0	239-12- 3	639- 4- 2	259- 8- 6
2	Kadi	1,475-11- 6	154- 4- 0	590-11- 3	299-15- 0
3	Kalol	1,167- 9- 9	92- 1- 6	398-13- 0	1,892- 1- 3
4	Mehsana	1,602- 2- 1	261-12- 3	516- 0- 0	429- 2- 3
5	Patan	1,906-14- 5	117- 1- 0	473- 5- 6	245-15- 0
6	Sidhpur	1,547- 6- 0	158- 4- 0	507- 3- 3	744- 5- 1
7	Unjha	1,447- 9- 3	155- 3- 3	609- 9- 8	767- 0- 0
8	Vadnagar	1,172-11- 9	95- 2- 6	439- 3- 0	1,876- 4- 0
9	Vijapur	1,548- 0- 0	125- 8- 6	414-15- 8	573-12- 0
	Total	13,236- 0- 9	1,399- 1- 3	4,589- 1- 6	7,087-15- 1

(Para 134 p. 56).

Veterinary Dispensaries for the year 1931-32.

year 1931-32.		Expenditure and receipt for the year 1930-31.		Expenditure and receipt for the year 1929-30.	
Total.	Receipt.	Expenditure.	Receipt.	Expenditure.	Receipt.
7	8	9	10	11	12
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
3,756-11-9	78-4-0	3,676-4-4	89-5-0	3,374-11-11	77-0-0
2,202-7-8	...	2,007-15-7	...	1,950-0-3	...
3,018-14-5	4-0-0	2,872-14-1	...	2,653-3-7	...
2,078-4-3	...	2,990-8-3	...	...	...
2,682-15-9	...	2,503-3-7	...	2,350-11-1	...
2,540-8-7	8-15-6	2,548-1-4	1-4-0	2,359-7-2	7-10-11
2,312-4-10	30-11-0	3,332-9-5	30-1-0	2,102-3-6	24-9-0
18,592-3-3	121-14-6	19,931-8-7	120-10-0	14,790-5-6	109-3-11
2,506-8-11	...	2,110-11-10	...	2,578-1-9	...
2,520-9-9	...	2,361-11-11	...	2,121-15-5	...
3,550-9-6	...	...	...	...	...
2,809-0-7	...	2,826-1-7	...	2,394-15-11	11-8-3
2,743-3-11	...	2,883-11-0	30-7-9	2,747-2-5	13-7-11
2,957-2-4	0-4-10	2,861-13-4	1-3-9	2,762-15-5	...
2,979-6-2	41-15-8	2,930-8-9	...	2,583-3-7	...
3,583-5-3	...	...	...	...	...
2,662-4-2	...	2,165-8-0	...	2,044-2-3	...
26,312-2-7	42-4-6	18,140-2-5	31-11-6	17,232-8-9	25-0-2

APPENDIX No. XXXII.

Serial No.	Name of the District and the dispensary.	Expenditure and receipt for the			
		Pay.	Travelling allowance.	Medicine charges.	Other expenditure.
1	2	3	4	5	6
	Navsari D.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
1	Karchalia ...	1,973- 0- 6	137-12- 0	492- 7- 2	234-10- 3
2	Mangrol ...	1,466- 7- 7	94-10- 3	370- 7- 6	330- 9- 6
3	Orna ...	1,411-15- 9	163-14- 0	323-15- 4	362- 5- 7
4	Vesma ...	1,474- 0- 0	88- 5- 0	292- 6- 5	256- 0- 0
5	Vyara ...	1,525- 0- 0	104- 6- 6	351-14- 6	227- 6- 0
6	„ castrator.	1,090- 7- 3	...	...	...
	Total ...	8,940-15- 1	588-15- 9	1,831- 2-11	1,410-15- 4
	Amreli D.				
1	Amreli ...	1,568- 4- 4	121- 3- 0	273- 1- 0	599- 8- 9
2	Dhari ...	987- 6- 2	130- 6- 0	412-14- 3	1,740- 2- 0
3	Kodinar ...	1,346- 0- 6	213- 4- 0	418- 2-11	423-11- 9
	Total ...	3,901-11- 0	464-13- 0	1,104- 2- 2	2,763- 6- 6
	Grand total ...	37,274-12- 7	3,319- 3- 9	10,758- 4- 9	14,558- 2- 6

(Para 134 p. 56).—(Concluded.)

year 1931-32.		Expenditure and receipt for the year 1930-31.		Expenditure and receipt for the year 1929-30.	
Total.	Receipt.	Expenditure.	Receipt.	Expenditure.	Receipt.
7	8	9	10	11	12
Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.	Rs. a. p.
2,837-13-11	6-14-0	3,118-12-1	13-9-0	2,640-11-6	27-14-9
2,262-2-10	...	3,421-6-2	7-13-0	...	...
2,262-2-8	3-8-0	2,636-2-11	6-3-0	2,200-3-4	7-3-0
2,110-11-5	4-8-0	2,270-1-2	6-1-0	2,964-9-6	30-8-6
2,208-11-0	59-4-1	2,293-15-1	13-9-0	2,089-9-2	6-13-0
1,090-7-3	...	1,069-0-10	...	659-1-2	...
12,772-1-1	74-2-1	14,809-6-3	47-3-0	10,554-2-8	72-7-3
2,562-1-1	40-0-0	2,623-11-10	8-6-0	2,385-7-8	9-0-0
3,270-12-5	...	...	...	...	...
2,401-3-2	10-0-0	3,025-7-8	...	...	...
8,234-0-8	50-0-0	5,649-3-6	8-6-0	2,385-7-8	9-0-0
65,910-7-7	238-5-1	58,530-4-9	207-14-6	44,962-8-7	215-11-4
				Actual Government expenditure & receipt.	
				25,824-10-5 | 31-6-6	

GOVERNMENT OF BARODA.

खेती, ५९.

DEWAN ORDER No. 59/29
2-5-1933.

1. Key-word :- निवेदन.

Resolved, dated 8-6-1933.
(Reviewed).

2. No., date and subject of the tippan:--

(1)	DEPARTMENT.	No.	DATE.
	Agriculture.	21	19-12-1932.
(2)	SUBJECT:--Annual administration report of the department of Agriculture for the year 1931-32.		

3. Summary of the tippan:--

Submits the report of the Agriculture department for the year 1931-32 to the Government,

Remarks of Professor K. G. Naik dated 26-1-1933:-- suggests that the experiments regarding the suitability of particular fertilizers for particular kinds of crops of fruits are necessary and need to be repeated. The tests conducted in connection with sugar cane are essential. It would be interesting to watch the results regarding experiments made to prevent the falling of mango-tree blossoms. It would be better if agricultural classes are continued in the four districts of the State.

Professor Shevde had no remarks to offer.

Opinion of the Pragati Adhikari under No. 77 dated 3-2-1933:--Offers his remarks on the various points stated in the report.

4. Resolution:--

The working of the Agricultural department falls into two main sections:--

Sections of the department.

- (1) Administrative,
- (2) Technical.

2. Under Administrative section the following points are worth noting.

Points worth noting.

1. The participation of the Baroda Government as a constituent part of the Imperial Council of Agricultural Research, State is allowed to depute two representatives to the Advisory Board of the Council and one representative to its Governing body. The Director of Agriculture and his deputy represent the State on the Advisory Board and the member in charge of the agriculture portfolio is a member of the Governing body.
 2. The departmental conference of the veterinary and the agricultural sections along with a joint meeting of the staff of the Co-operative department was held under the presidentship of the Development Commissioner. The work done during the year was discussed and a programme was outlined for the ensuing year.
 3. Two officers of the department were deputed to Lucknow for poultry study. A veterinary inspector was sent to Mysore to study the serum Institute. The introduction of serum simultaneous method of inoculation against rinderpest and the organization of veterinary service.
3. With a view to encourage fruit growing in the State, the Government at the initiation of His Highness the Maharaja Saheb, appointed a committee to consider and suggest the ways and means to improve fruit growing in the State. The committee after inviting suggestions from the public as well as from officers have submitted a report which is under the consideration of the Government.

Appointment of committees.

Committees were also instituted to report how to encourage the extension of sugar-cane cultivation and to test the

possibility of sugar manufacture on a cottage industry basis. The reports have been read and suitable orders have been passed on them.

II. TECHNICAL.

4. The technical activities of the department may be divided into three main sections:-

Sections of technical activities.

1. Agriculture,
2. Agricultural Engineering, and
3. Animal husbandry.

AGRICULTURE.

5. The agricultural section comprises the following activities :

Activities of agricultural section.

- (1) Research and Investigations,
- (2) Agricultural Stations,
- (3) Propaganda work, and
- (4) Agricultural education.

RESEARCH AND INVESTIGATIONS.

6. For the first time in the history of the department it has been possible to take up genuine Cotton root rot research work owing to financial assistance from the Indian Central Cotton Committee. The scheme was launched in February 1932. An area of more than 10 acres has been set apart from the Baroda Farm to carry out the investigations. The Deputy Director of Agriculture, Dr. V. N. Likhite, has been put in charge of the investigations. The programme of work is based in two main directions :-

- (1) the study of the life history of the pathogene responsible for the root rot,
- (2) selection of cotton strains immune or resistant to this disease.

AGRICULTURAL STATIONS.

7. The department has three agricultural stations :--

Agricultural stations.

- (1) at Baroda,
- (2) at Jagudan (Mehsana Prant),
- (3) at Amreli.

8. This station is mainly utilized for carrying out various crop, manurial, cultural and other tests. Baroda Farm. There is also a horticultural section and an annual agricultural class. A poultry adjunct has also been recently added. The special work on this farm during the year consisted of

- (1) Fertilizer tests on cotton, bajri, tobacco, wheat,
- (2) Cultural tests on May-sown cotton and Pusa 4 wheat,
- (3) Horticultural work,
- (4) Miscellaneous tests.

The yields of the crops on this farm were generally poor but the tests have afforded valuable results from scientific point of view.

JAGUDAN AGRICULTURAL STATION.

9. The Mehsana district has a large area under wheat and the usual variety grown is very susceptible to rust. Hence various Pusa strains have been introduced in this area. The Jagudan station is, therefore, mainly utilised for keeping up a pure supply of these strains. It has an area of 30 bighas. The Pusa wheat on the farm yielded 1,833 lbs. per acre on an average. It is a matter of regret that very few villages have taken advantage of the Pusa wheat. There is much scope for popularising the activities of this farm. The attention of the department is drawn to this fact.

AMRELI AGRICULTURAL STATION.

10. The work on this station is mainly directed towards carrying out tests intended to indicate possibilities of improvement in crops grown in the district. There is also a horticultural section attached to this farm to find out the suitability of the tract for such fruits as lemons, mosambi, santra, papaya, figs, grape vines and pomegranates. The Amreli Prant Panchayat has a nursery of 10 bighas of land. The management of this nursery is entrusted by them to the farm. During the year under report 617 plants were sold from this nursery.

Amreli Farm.

PROPAGANDA.

11. The propaganda work is usually carried out mainly through
Propaganda work.

- (1) the district staff,
- (2) demonstrations and shows,
- (3) publications.

To this has been added this year.

- (4) The Rural Reconstruction Centre at Kosamba.

12. This centre was opened from 1st February 1932. An experienced man from the Y. M. C. A. of South India has been put in charge of the centre with the necessary staff.

Rural Reconstruction
centre at Kosamba.

The outlines of the work are

1. Setting up of village councils with a chief board for a group of villages.
2. Putting up of useful sections at the centre to serve as a training place for the village population in subsidiary occupations like poultry, bee-keeping, weaving, printing, dyeing, kitchen gardening etc.
3. Through the village councils to induce the rural population to take practical and active interest in all matters of their economic welfare leading to

better sanitation, health and citizenship, a class for village boys has been opened. The number is limited to 10 students, each being given a scholarship of Rs. 6 per month.

13. Under the second method of propaganda, viz., demonstration and shows, the department availed of opportunities at four places in the State by putting up stalls and arranging lectures and demonstrations, namely, at the (1) Industrial exhibition at Baroda, (2) Panchayat Week celebrations at Navsari, (3) The Agricultural and Cattle Show at Amreli, (4) The Baby Week and Health Show at Palsana. In addition to these, field demonstrations were held in Navsari district where the mango trees generally suffer from sugary disease and an insect pest. Sulphur dusting has been found effective against these. In Padra taluka of Baroda district brinjal and chilli crops had been attacked by aphides and mite. Spraying with fish oil soap for brinjals and lime sulphur wash for chillies were demonstrated. In Sidhpur taluka of Mehsana district field test of Pusa wheat had been laid out. It was shown that where the local Wajia wheat had been grown in a neighbouring field the rust was very severe while the Pusa crop was quite free. This resulted in a great demand for Pusa wheat seed.

AGRICULTURAL EDUCATION.

14. The Agricultural class at Baroda Farm in which the Kathor Agricultural class merged started on 15th June 1931 and closed at the end of April 1932. It commenced with 27 students on roll and closed with 18. The subjects taught were Agriculture, Co-operation, Carpentry, Smithy, Sanitation, Oil Engine and Tractor work, Poultry, Dairying, Bee-keeping and Veterinary. A tour was also arranged for the students to places of agricultural importance in Gujarat and Deccan.

It would have been of interest to know if the department had watched the line the students took after leaving the class

to give an idea to the Government of what service this class has been to the country. A greater scrutiny is to be exercised while selecting students for admission. Only such should be selected who are likely to complete the whole course.

AGRICULTURAL ENGINEERING.

15. The activities of this section may be divided as follows:—

Activities of Agricultural Engineering etc.

1. Boring and dynamiting of wells,
2. Water-finder,
3. Tractor work,
4. Oil Engines and Pumps.

29 wells were bored during the year out of which 17 were successful, giving an increase of $28\frac{1}{2}$ koses of water. The demand for sinking wells with dynamite was larger than last year. The number of wells dealt with was 90. Out of this number water increase of $67\frac{1}{2}$ koses was obtained in 73 wells.

TRACTOR WORK.

16. Roughly speaking there are about 38 private owned tractors in the State. Out of this 17 are in working order and 21 are lying idle, due mainly to the high cost of cultivation and lowering of prices of agricultural produce. The tractor operator's services were utilised by the public for a considerable repair work. It appears that the tractors have not become popular.

OIL ENGINES AND PUMPS.

17. There are 400 power pumping sets in the whole State. Without a special machine it is difficult to render efficient and timely service to the owners of these sets. The boring assistant and tractor operator were used for this work. The department should find out means to engage a mechanic

Oil Engines and Pumps.

without increasing the budget. During the year 8 new installations of oil engines or pumps were done. No addition to the number of Persian wheels has taken place during the year.

ANIMAL HUSBANDRY.

18. This section is divided into two branches:—

Animal husbandry.

1. Breeding and
2. Veterinary relief.

BREEDING.

19. The Palace dairy and cattle breeding farm situated at Makarpura has had a very vicissitudinous life. It has not only changed its locality more than once, but has also been put under different departments. It has never so far shown any benefits in any way or even justified its existence. Besides catering for the Palace requirements in dairy produce which the department says is its main object, it has done nothing else. It is questionable whether the keeping of such a large herd of cattle with such extensive facilities is necessary for the Palace requirements, especially when the Royal Family is generally out of Baroda for eight months out of twelve in a year. The following was the strength of the herd on 31st July 1932:--

Milch cows	21
Milch buffaloes	27
Young stock	54
Bulls	2
Bullocks	5

109

The total milk produced in 1931-32 was 1,08,409.5 lbs. Out of this, the supply to the Palace and royal family was only 128+142=270 lbs.

The total expenditure on this farm during the year has been Rs. 26,779-3-9 and the receipts have been Rs. 13,112-12-1, that is to say a loss of 50%.

Another object of the farm is the breeding of the Gir stock, but it appears that the result in this direction has also been negligible as no particulars are given in the report about it. The attention of the Director is particularly drawn to these facts and he is requested to see that either full use is made of this breeding farm or it is cut down to a very appreciable extent just to suffice the dairy requirements of the Palace.

The poultry adjunct and the bee-keeping section at the Baroda Farm are more or less for instructional purposes for the agricultural class.

PREMIUM BULLS.

20. During the year 6 new Kankrej bulls were purchased and distributed as premium bulls. The total number of premium bulls has now reached 32.

Premium bulls.

It is pity the department does not keep a record of the service of these bulls and the general results achieved by their keeping. In the next year's report a special mention should be made of this.

VETERINARY RELIEF.

21. During the year three new dispensaries were opened bringing their total to 24 in the State.

Veterinary relief.

The total number of castrations by Burdizzo method was 2,351.

The relief afforded by the veterinary surgeons is increasing as can be seen from the fact that 1,057 villages were visited and 7,381 cases treated as against 704 and 4,056 during the previous year. The veterinary section does not, however, appear to be well organised yet. Very early steps should be taken by the department to have this section well re-organised. This section should gather information on many more points than they do at present. For example, information on the following points is very necessary :—

1. Animal population of each taluka.

20 A. R.

2. What epidemics occurred and where.
3. What are the common diseases and which prevail largely in particular talukas.
4. What are the precautions taken and how far are they useful.
5. Are any steps taken for the improvement of animals; if so, what.
6. Are there any pedigree studs kept and what is their progeny and its condition.
7. Are pedigree and register books kept.
8. What is the position of cross bred animals.
9. What are the fodder varieties in the district.
10. Panjara Poles—their cattle population and diseases occurring there.

etc. etc. etc.

22. The Government are glad to observe that the Director, Mr. Sane is taking keen interest in his work and is well assisted by his colleagues and subordinates.

If the department finds that with the increase of its activities some additional hands are necessary, the Government will give their sympathetic consideration to truly made out cases.

D. P. S. Sec. 201.

SHIVRAJ SINGH.

Mantra Sachiv.
