

A Key to the Soils of Ohio

by

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A KEY TO THE SOILS OF OHIO

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G. W. CONSEY, A. H. PASCHALL, AND E. M. BURRAGE

INTRODUCTION

More attention is daily being paid to the study of soils and the part they play in our life today. Much work has been done in Ohio in the mapping and classification of the soils of the State and in showing their value in the agricultural economic scale. It has been the aim of the authors of this circular to summarize the characteristics of the important soil types in Ohio and to present data concerning their natural and possible productivity.

SOIL AREAS

The State of Ohio is located in the region of gray-brown podzolic soils, which is to say that the soils in Ohio have been developed in a humid, temperate climate under a deciduous forest vegetation. Within this region Ohio has been divided into six major areas based on the character of the material from which the soils were derived: Area I, glacial limestone soils; Area II, glacial sandstone and shale soils; Area III, soils of the glacial lake region of northwestern Ohio; Area IV, soils of the glacial lake region of northeastern Ohio; Area V, residual limestone and shale soils; Area VI, residual sandstone and shale soils. It is of interest to note that the more productive soils lie in the glaciated areas.

CLASSIFICATION OF SOILS

In order to show the relationship of one soil to another and at the same time to indicate wherein they differ, soils are classified into:

Family (includes soils derived from similar parent material; each difference within the family resulting from variations in natural drainage gives a soil series)

Series (that member of a family which includes soils resulting from similar drainage conditions; each difference within a soil series due to variations in the texture of the surface soil is a soil type)

Type (that soil individual within a series which includes soils having similar texture)

The Wooster *family*, for example (see Table 1), is composed of the Wooster, Canfield, Trumbull, Ravenna, and Chippewa series. The Wooster soils themselves are the best drained and the Chippewa, the most poorly drained of the family. If the soils of this area had all been developed under the same good drainage conditions, they would all have the characteristics of the Wooster series.

The Wooster *series* is represented in this circular by the loam and the silt loam. These designations are based on the texture of the surface soil. A series name (usually chosen from the town or county in which that soil was first recognized), together with the textural term, forms a soil *type*: for example, Wooster silt loam.

Textural terms, such as loam, silt loam, and silty clay loam, are based on the percentage of sand, silt, and clay¹ composing a particular soil. Loams, silt loams, and silty clay loams include soils with 50 percent or more of silt and clay, with the remainder of the material sand. Loams contain less than 20 percent clay and less than 50 percent silt; silt loams, less than 20 percent clay and over 50 percent silt; and silty clay loams, between 20 and 30 percent clay and over 50 percent silt. About 75 percent of the soils in Ohio are silt loams and silty clay loams². Because of the larger proportion of clay in the silty clay loams they are spoken of as "heavier" soils than the silt loams.

In *classifying* soils the following features are noted:

- (1) Parent material (glacial, residual, alluvial, etc.)
- (2) Topography and drainage
- (3) Color of the surface soil
- (4) Color and character of the subsoil
- (5) Character of and depth to parent material
- (6) Reaction (neutral or acid) of the surface soil

Those soils which are alike in all respects except texture are given the same soil series name. Those soils alike in all respects are given the soil type name. Thus, all soils in (1) the glacial sandstone and shale area having (2) rolling topography and good drainage, (3) brown surface soil, (4) yellowish-brown subsoil heavier than the surface, with (5) glacial drift (derived from sandstone and shale material) below 30 to 36 inches, and (6) acid in reaction, are classified as Wooster soils (see profile description, page 16). Soils having all the above characteristics and a silt loam surface soil are called Wooster silt loams, etc.

PRODUCTIVITY RATINGS

In Ohio the dark-colored soils are the most productive; the light-colored soils, fair to good; and the gray soils, the least productive. These color designations in general are indicative of the amount of organic matter present: The dark soils are high in organic matter content; the light-colored soils, of medium content; and the gray soils have been leached of bases and contain relatively little accumulation of organic matter.

The soils with the highest productivity ratings are located in the northwestern part of the State (see list on page 44, and map on page 6); the next highest soils, in central western Ohio; and the lowest, in the southeastern portion.

¹Sand, silt, and clay are soil separates ranging in diameter as follows: sand, from 1.000 to 0.050 mm.; silt, from 0.050 to 0.005 mm.; clay, from 0.005 to less than 0.005 mm.

²For field designation, textures are determined by rubbing moist soil lightly between the fingers: loams have a slightly gritty feel; silt loams, a floury feel; and silty clay loams, a smooth, slightly plastic feel. Sands and gravels can be recognized by sight.

In rating soils, the authors have used the natural characteristics of the soil, except in regard to drainage. In poorly drained areas where tiling is the accepted practice, the good artificial drainage has been considered in rating the soil. However, in arriving at the figures for the crop index, natural drainage conditions were considered for the first figure and the improved conditions, for the second figure of the index.

The *soil productivity ratings* are State-wide in significance. "1" is the highest rating and "10", the lowest (see page 34, column 1). A soil with the rating of "5" is higher in rating than a soil of "10", but does not necessarily yield twice as good crops; these figures merely indicate that one soil is more or less productive than another.

The *crop productivity index* ranges from "10", the highest, to "1", the lowest. In most cases the figures are significant; for example, a soil indexed as "5" should yield only 5/10 or 1/2 as much as one indexed as "10".

Two figures are given in the crop productivity index tables, the second figure, in parentheses. The first figure is indicative of the crop production of the soil without special treatment, and the second figure indicates the possible productivity with adequate drainage and good soil management. Thus, for the Miami silt loam the crop productivity index for corn, 5 (7), means "5" without special treatment and "7" with adequate drainage and good soil management, as compared with the Brookston silt loam, 3 (10), "3" without special treatment and "10" with adequate drainage and good soil management.

The *soil productivity rating* is based on the *crop productivity index*. Since "10" represents the possible crop production under improved conditions, and since "10" is given for 1/2 of the major crops produced in the area, Brookston silt loam is rated as a number "1" soil. The Miami silt loam under improved conditions is given a possible crop index of "9" for only 1/2 of the major crops; this makes it lower in soil productivity, i. e., "3".

For orchards and forests the ratings A, B, and C are used. "A" means excellent; "B", fair; and "C", poor or undesirable. Ratings for forests are given both for hardwoods (H) and for conifers (C).

COUNTY SOIL SURVEY REPORTS

About 30 counties in Ohio have been surveyed in detail by the Federal Bureau of Chemistry and Soils in cooperation with the Ohio Agricultural Experiment Station. In recent years there has been some change in the nomenclature used in soil survey reports. These changes have been listed in Special Circular Number 47 of the Ohio Agricultural Experiment Station, entitled "Revised Nomenclature of Soil Type Names", by G. W. Conrey and E. M. Burrage.

Detailed county soil survey maps and reports, and Special Circular Number 47 may be had upon request to the Ohio Agricultural Experiment Station, Wooster, Ohio.

LEGEND

Generalized Soil Map of Ohio

- I. Glacial limestone soils.
 - a. Late Wisconsin Drift soils.
 1. Miami, Celina, Crosby, Brookston, and Clyde silty clay loam.
 2. Bellefontaine, Miami, Celina, and Crosby silt loam; Brookston and Clyde silty clay loam.
 3. Miami and Crosby loam and silt loam; Brookston clay loam and silty clay loam.
 4. Mixed sands and fine sandy loams—Coloma, Miami, Nappanee, Wauseon, etc.
 - b. Early Wisconsin Drift soils.
 5. Russell, Zenia, and Fincastle silt loam, with Brookston silt loam.
 - c. Illinoian Drift soils.
 6. Clermont, Avonburg, Rossmoyne, and Blanchester silt loam.
 7. Cincinnati and Rossmoyne silt loam; Fairmount silty clay loam.
- II. Glacial sandstone and shale soils.
 - a. Late Wisconsin Drift soils.
 8. Wooster, Canfield, Ravenna, and Trumbull silt loam.
 9. Wooster and Canfield loam and sandy loam.
 10. Rittman, Wadsworth, and Trumbull silt loam.
 11. Ellsworth, Mahoning, and Trumbull silty clay loam and silt loam.
 12. Alexandria, Cardington, and Bennington silt loam; Marengo silty clay loam.
 - b. Illinoian Drift soils.
 13. Hanover and Fallsbury silt loam.
- III. Lacustrine limestone soils.
 14. Brookston clay, with Nappanee clay loam, Wauseon fine sandy loam, etc.
 15. Paulding clay, with Nappanee clay.
 16. Toledo silty clay, with Fulton and Lucas silty clay loam.
 17. Toledo very fine sandy loam, loam, silt loam, and clay loam.
 18. Plainfield, Berrien, and Newton fine sand.
- IV. Lacustrine sandstone and shale soils.
 19. Painesville, Caneadea, and Lorain loam to silty clay loam; Plainfield and Berrien fine sand.
- V. Residual limestone and shale soils.
 20. Hagerstown, Bratton, Maddox, and Ellsberry silt loam; Heitt, Eden, and Fairmount silty clay loam.
- VI. Residual sandstone and shale soils.
 21. Muskingum silt loam, with Muskingum loam.
 22. Muskingum silt loam (largely steep phase).
 23. Westmoreland and Belmont silty clay loam, with Muskingum silt loam.
 24. Meigs silty clay loam and Upshur clay, with Muskingum silt loam.

TABLE 1.—A Key to the Soils of Ohio

| Color of surface | Brown | Brown | Brown to grayish-brown | Grayish-brown | Brownish-gray | Gray | Very dark gray | Gray-black |
|---|-------------------------|-------------------------|---|--|--|--|--|----------------------------|
| Color of subsoil | Variable | Reddish-brown | Yellowish-brown | Mottled below 18 in. | Mottled below 8 in. | Mottled below 8 in. | Mottled below 8 in. | Mottled below 8 in. |
| Topography (upland soils) | Ridges and steep slopes | Rolling | Gently rolling | Undulating | Gently undulating | Undulating to level | Level | Level |
| Natural drainage | Good | Good | Good | Fair | Poor | Very poor | Very poor | Very poor |
| I. Glacial limestone soils | | | | | | | | |
| a. Late Wisconsin Drift soils (leached 24-30 in.) Very calcareous drift on ls. Heavy drift of lake plain Very heavy drift of lake plain Very sandy drift Shallow drift over limestone | Hennepin | Bellefontaine | Miami Catawba St. Clair Coloma | Collins | Crosby Nappanee | Bethel Palmer | { Brookston Pandora } Danbury Brookston Paulding | Clyde Clyde |
| b. Early Wisconsin Drift soils (leached to 40-60 in.) | | Milton Bellefontaine | Russell | Xenia | Randolph Fincastle | Delmar | Milledale Brookston | |
| c. Illinoian Drift soils (leached to 100-120 in.) Heavy drift | Edenton | | Cincinnati Jesau | Rossmoyne Loudon | Avonburg | Clermont | Blanchester | |
| II. Glacial sandstone and shale soils | | | | | | | | |
| a. Late Wisconsin Drift soils With light-textured subsoils With moderately heavy subsoils With very heavy subsoils With moderately heavy subsoils (slightly calcareous) Shallow drift over sandstone Shallow drift over shale | | | Wooster Wayne Alexandria Lordstown | Canfield Rittman Ellsworth Cardington | Ravenna Wadsworth Mahoning Bennington | Trumbull Trumbull Trumbull Condit | Chippewa Chippewa Chippewa Marengo | |
| b. Illinoian Drift soils With light-textured subsoils With heavy subsoils | | | Hanover Fallsbury | | Allis | Wickliffe | | |
| III. Glacial lake soils (limestone area) Gravelly beach ridges Deep sand Sand over clay Very fine sand, silt, and clay | | Belmore | Plainfield Lucas | Berrien Dunkirk | Morocco Rimer Fulton | | Newton Wauseon Toledo | Maumee Neapolis Bono |

| | | | | | | | | |
|---|---|--|--|--|---|----------------------------------|---|----------|
| IV. Glacial lake soils (ss. and sh. area) Gravelly beach ridges Deep sand Sand over clay Very fine sand, silt, and clay | | Chenango | Plainfield Painesville | Berrien | Caneada | | Reynolds Lorain | |
| V. Residual limestone and shale soils Interbedded limestone and shale Ridge tops Steep slopes High-calcium limestone Gray calcareous shale Dolomitic limestone Gray shale Black bituminous shale Sandstone rubble over black shale Red shale | Heitt Eden Fairmount Otway Colyer Rarden | Hagerstown Bratton Coolville | Maddox Byington | Ellsberry Bedford | Bentonville Jacksonville Fawcett Naceville | | Burgin | |
| VI. Residual sandstone and shale soils Over sandstone and shale Over shale (yellow weathering to red) Over yellowish gray clay shale— (non-calc.) Over red clay shale (calc.) Over limestone Mixed—Muskingum and Upshur Mixed—Muskingum and Brooke Mixed—Muskingum, Brooke, Upshur | Muskingum Rardon Upshur Brooke Moigs Westmoreland Belmont | Coolville | Zanesville† Wellston | Tilsit Keene Guernsey | Jonsburg | Mullins | | |
| Terrace (second bottom) soils with gravelly substratum. Associated with Glacial limestone soils Glacial sandstone and shale soils Ohio River terraco | | Fox Chenango | Wheeling | Bronson Sciotoville | Homor Braceville Weinbach McGary | Ginat | Westland Atherton Chilo Montgomery | Abington |
| Terraco (second bottom) soils with silt and clay substratum. Associated with Glacial limestone soils With old glacial limestons Glacial sandstone and shale soils Residual sandstone and shale soils Residual limestone, ss., and sh. soils Residual red clay shale soils | | | Shandon Williamsburg Mentor Holston Elk Vincent | Glenford Monongahela Captina | Fitchville Tyler Taft | Sebring Purdy Robertsville | Luray Blago Bagnell | |
| Alluvial (first bottom) soils. Assoc. with Glacial limestone soils Glacial sandstone and shale soils Residual sandstone and shale soils Residual limestone, ss., and sh. soils Residual red clay shale soils | | | Genesee Chagrin Pope Huntington Moshannon | Eel Lobdell Philo Lindside Senecaville | Shoals Stendal Newark | Wayland Atkins Melvin | Sloan Papakating Elkins Dunning | Wabash |

*Noncalcareous shales. †Field name as yet not officially approved. ‡Probably derived from wind-blown silts. §Dark gray surface.

TABLE 2.—Glacial Limestone Soils and Associated Soils. Area I

Upland Soils (Late Wisconsin Drift) leached to 24-36 inches

| Topography | Rolling | Gently rolling | Undulating to level | | Level | | |
|---|--|--|--|--|--|--|--|
| | | | | | | | |
| Color of surface soil | Brown | Grayish-brown | Brownish-gray | Gray | Dark gray | Very dark gray | Gray-black |
| Color and character of subsoil | Reddish-brown | Yellowish-brown | Mottled yellowish-brown and gray below 8 in. | Mottled gray and yellowish-brown below 8 in. | Mottled gray and yellowish-brown | Mottled dark gray and yellowish-brown | Mottled bluish-gray and yellowish-brown |
| Character of and depth to parent material | Calcareous glacial drift below 24-36 in. | Calcareous glacial drift below 24-36 in. | Calcareous glacial drift below 24-36 in. | Calcareous glacial drift below 24-36 in. | Calcareous glacial drift below 24-36 in. | Calcareous glacial drift below 30-40 in. | Calcareous glacial drift below 30-40 in. |
| Natural drainage | Good | Fair to good | Fair to poor | Very poor | Very poor | Very poor | Very poor |
| Reaction of surface soil | Not acid | Slightly acid | Acid | Acid | Slightly acid | Not acid | Not acid |
| Series | Bellefontaine | Miami* | Crosby | Bethel | Pandora | Brookston | Clyde |
| Important textures | loam silt loam | silt loam silty clay loam | silt loam silty clay loam | silt loam | silty clay loam | silty clay loam | silty clay loam |

*Collins silt loam, new type, imperfect underdrainage, mottled below 18 to 24 inches.

TABLE 2.—Glacial Limestone and Associated Soils (continued)

| Upland Soils (Late Wisconsin Drift), continued | | | | Upland Soils (Early Wisconsin Drift) leached to 40-60 inches | | | | |
|--|-------------------------------------|--|---------------------------------------|--|--|--|--|--|
| Topography | Undulating | | Level | Rolling | | Undulating to gently rolling | | Level |
| Color of surface soil | Brown | Grayish-brown | Very dark gray | Brown | | Grayish-brown Brownish-gray | Gray | Very dark gray |
| Color and character of subsoil | Reddish-brown | Yellowish-brown, mottled with gray below 15-18 in. | Mottled dark gray and yellowish-brown | Reddish-brown | Yellowish-brown | Mottled yellowish-brown and gray below 8 in. | Mottled gray and yellowish-brown below 8 in. | Mottled dark gray and yellowish-brown |
| Character of and depth to parent material | Bedrock (limestone) below 20-36 in. | Bedrock (limestone) below 15-30 in. | Bedrock (limestone) below 24-36 in. | Calcareous glacial drift below 24-36 in. | Calcareous glacial drift below 40-60 in. | Calcareous glacial drift below 40-60 in. | Calcareous glacial drift below 40-60 in. | Calcareous glacial drift below 30-60 in. |
| Natural drainage | Good | Fair to poor | Very poor | Good | Good | Fair | Poor | Very poor |
| Reaction of surface soil | Not acid | Slightly acid | Not acid | Not acid | Acid | Acid | Acid | Not acid |
| Series | Milton | Bandolph | Millsdale | Bellefontaine | Russell* | Fincastle | Delmar | Brookston |
| Important textures | silt loam | silt loam | silty clay loam | loam silt loam | silt loam | silt loam | silt loam | silt loam |

*Zenia silt loam, new type, imperfect underdrainage, mottled below 18 to 24 inches.

TABLE 2.—Glacial Limestone and Associated Soils (continued)

Upland Soils (Illinoian Drift) leached to 100-120 inches

| Topography | Steep slopes | Moderate slopes | Rolling | Gently rolling | Undulating | Level | |
|---|--|--|--|--|--|--|---|
| | | | | | | Gray | Dark gray |
| Color of surface soil | Brown | Brown | Brown | Grayish-brown | Brownish-gray | Gray | Dark gray |
| Color and character of subsoil | Olive yellow Very heavy | Yellowish-brown | Brownish-yellow | Brownish-yellow, mottled yellowish-brown and gray below 16-20 in. | Mottled yellowish-brown and gray below 8 in. | Mottled light gray and yellowish-brown below 8 in. | Mottled gray and yellowish-brown below 10 in. |
| Character of and depth to parent material | Bedrock (limestone and shale) at 24-36 in. | Calcareous glacial drift below 36-40 in. | Calcareous glacial drift below 100-120 in. | Calcareous glacial drift below 100-120 in. | Calcareous glacial drift below 100-120 in. | Calcareous glacial drift below 100-120 in. | Calcareous glacial drift below 100-120 in. |
| Natural drainage | Good | Good | Good | Fair | Poor | Very poor | Very poor |
| Reaction of surface soil | Not acid | Slightly acid | Acid | Very acid | Very acid | Very acid | Acid |
| Series | Fairmount* | Edenton | Cincinnati | Rossmoyne | Avonburg | Clermont | Blanchester |
| Important textures | silty clay loam | silt loam | silt loam | silt loam | silt loam | silt loam | silt loam |

*Residual limestone and shale soil, recognized in this area where drift is extremely thin.

TABLE 2.—Glacial Limestone and Associated Soils (continued)

Terrace Soils (Second bottom)

| Associated soils | Glacial limestone soils | | | | | | | |
|---|--|--|--|--|---|--|---|--|
| Color of surface soil | Brown | Dark brown | Very dark gray | Gray-black | Grayish-brown | Brownish-gray | Very dark gray | |
| Color and character of subsoil | Reddish-brown | Dull yellowish-brown | Mottled gray and yellowish-brown | Mottled bluish-gray and yellowish-brown | Yellowish-brown | Mottled yellowish-brown and gray below 8 in. | Mottled dark gray and yellowish-brown | |
| Character of and depth to parent material | Stratified sand and gravel below 24-60 in. | Stratified sand and gravel below 24-60 in. | Stratified sand and gravel below 30-60 in. | Stratified sand and gravel below 30-60 in. | Laminated silt and clay below 36-50 in. | Laminated silt and clay below 36-50 in. | Laminated silt and clay below 36-50 in. | |
| Natural drainage | Good | Fair to good | Very poor | Very poor | Good | Poor | Very poor | |
| Reaction of surface soil | Not acid | Slightly acid | Not acid | Not acid | Slightly acid | Acid | Not acid | |
| Series | Fox | Warsaw | Westland | Abington | Shandon | McGary | Montgomery | |
| Important textures | loam silt loam | silt loam | silty clay loam | silty clay loam | silt loam | silt loam | silty clay loam | |

TABLE 2.—Glacial Limestone and Associated Soils (continued)

| Terrace Soils (Second bottom) | | | | | |
|---|--|---|--|--|---|
| Associated soils | | | | | Cincinnati Rossmoyne |
| Color of surface soil | Brown | Grayish-brown | Gray | Dark gray | Grayish-brown |
| Color and character of subsoil | Yellowish-brown with reddish cast heavy to 60-84 in. | Yellowish-brown mottled with gray below 18-20 in. | Mottled gray and yellowish-brown below 8 in. | Mottled dark gray and yellowish-brown below 10 in. | Yellowish-brown slightly mottled |
| Character of and depth to parent material | Stratified sand and gravel below 60-84 in. | Stratified sand and gravel below 60-84 in. | Stratified sand and gravel below 60-84 in. | Stratified sand and gravel below 60-84 in. | Laminated silt and clay below 36-48 in. |
| Natural drainage | Good | Fair | Poor | Very poor | Fair |
| Reaction of surface soil | Slightly acid | Acid | Very acid | Not acid | Acid |
| Series | Wheeling† | Sciotoville† | Ginat† | Chilo† | Williamsburg |
| Important textures | silt loam | silt loam | silt loam | silty clay loam | loam silt loam |

†Ohio River Terrace: mixed glacial outwash and residual sandstone and shale material.

TABLE 2.—Glacial Limestone and Associated Soils (concluded)

Alluvial Soils (First bottom or flood plain)

| Associated soils | Glacial limestone soils | | | | Hagerstown, Westmoreland, etc. | | |
|--------------------------------|-------------------------|---|---------------------------------------|---|--------------------------------|--|--|
| | Grayish-brown | Brownish-gray | Very dark gray | Grayish-black | Brown to dark brown | Brown to grayish-brown | Gray |
| Color of surface soil | Brown | Mottled gray and grayish-brown below 8-15 in. | Mottled dark gray and yellowish-brown | Mottled bluish-gray and yellowish-brown | Brown | Brown mottled with grayish-brown and gray below 15 in. | Mottled gray and grayish brown below 8 in. |
| Color and character of subsoil | | | | | | | |
| Natural drainage | Fair to good | Fair to poor | Very poor | Very poor | Good | Fair | Very poor |
| Reaction of surface soil | Not acid | Not acid | Not acid | Not acid | Not acid | Not acid | Acid |
| Series | Genesee | Eel | Sloan | Wabash | Huntington‡ | Lindside‡ | Melvin‡ |
| Important textures | silt loam | silt loam silty clay loam | silt loam | silt loam silty clay loam | silt loam sil. clay lo. | silt loam silty clay loam | silt loam silty clay loam |

‡These soils occur in the flood plain of the Ohio River.

TABLE 3.—Glacial Sandstone and Shale Soils and Associated Soils. Area II

| Upland Soils (Late Wisconsin Drift) | | | | | | | | |
|---|---|--|--|---|---|---|--|---|
| Topography | Rolling | Gently rolling | Undulating | Level | | Rolling | Gently rolling | Undulating |
| Color of surface soil | Brown | Light brown | Brownish-gray | Gray | Very dark gray | Brown | Light brown | Brownish-gray |
| Color and character of subsoil | Yellowish-brown slightly heavier than surface | Pale yellowish-brown mottled with gray below 16-24 in. Slightly heavier than surface | Mottled yellowish brown and gray below 8 in. Slightly heavier than surface | Mottled gray, yellowish-brown and rust-brown | Mottled bluish-gray, gray, and rust-brown | Yellowish-brown | Pale yellowish-brown mottled with gray below 16-24 in. | Mottled yellowish-brown and gray below 8 in. |
| Character of and depth to parent material | Glacial drift (sandstone and shale) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. | Upper subsoil heavier than surface or lower subsoil | | |
| Natural drainage | Good | Fair to good | Poor | Very poor | Very poor | Glacial drift (sandstone and shale) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. |
| Reaction of surface soil | Acid | Acid | Very acid | Very acid | Acid | Good | Fair | Poor |
| Series | Wooster | Canfield | Ravenna* | Trumbull | Chippewa | Acid | Acid | Very acid |
| Important textures | loam silt loam | silt loam | loam silt loam | loam silt loam silty clay loam | silt clay lo. silt loam | Wayne silt loam | Rittman† silt loam | Wadsworth† silt loam |

*Formerly called Volusia; name changed to conform with nomenclature of U. S. Bureau of Chemistry and Soils.

†Associated poorly drained soils are: Trumbull and Chippewa with moderately heavy subsoils.

TABLE 3.—Glacial Sandstone and Shale Soils and Associated Soils (continued)

| Upland Soils (Late Wisconsin Drift), continued | | | | | | | |
|--|--|---|---|--|--|--|---|
| Topography | Gently rolling | Undulating | Rolling | Gently rolling | Undulating | Level | |
| Color of surface soil | Light brown | Brownish-gray | Brown | Grayish-brown | Brownish-gray | Gray | Very dark gray |
| Color and character of subsoil | Yellowish-brown mottled with gray below 16-20 in. Lower subsoil very heavy | Mottled yellowish-brown and gray below 8 in. Lower subsoil very heavy | Yellowish-brown | Pale yellowish-brown mottled with gray below 16-24 in. | Mottled yellowish-brown and gray below 8 in. | Mottled gray, yellowish-brown and rust-brown | Mottled bluish-gray, gray, and rust-brown |
| Character of and depth to parent material | Glacial drift (shale and sandstone) below 30-36 in. | | Upper subsoil heavier than surface or lower subsoil | | | | |
| Natural drainage | Fair | Very poor | Good | Fair | Poor | Very poor | Very poor |
| Reaction of surface soil | Acid | Very acid | Acid | Acid | Acid | Acid | Slightly acid |
| Series | Ellsworth† | Mahoning† | Alexandria | Cardington | Bennington | Condit | Marango |
| Important textures | silt loam silty clay loam | silt loam silty clay loam | silt loam | silt loam | silt loam | silt loam | silty clay loam |

†Associated poorly drained soils are: Trumbull and Chippewa with very heavy subsoils.

TABLE 3.—Glacial Sandstone and Shale Soils and Associated Soils (continued)

| Upland Soils (Late Wisconsin Drift), continued | | | Upland Soils (Illinoisian Drift) | | | | | |
|--|-------------------------------------|--|---|---|--|--|--|--|
| Topography | Rolling | Undulating | Rolling | | | | | |
| Color of surface soil | Brown | Brownish-gray | Brown | | | | | |
| Color and character of subsoil | Yellowish-brown | Mottled yellowish-brown and gray; very heavy | Yellowish-brown moderately heavy | Yellowish-brown Heavy | | | | |
| Character of and depth to parent material | Bedrock (sandstone) below 12-36 in. | Bedrock (shale) below 12-36 in. | Glacial drift (sandstone and shale) below 40-50 in. | Glacial drift (sandstone and shale) below 40-50 in. | | | | |
| Natural drainage | Good | Very poor | Good | Good | | | | |
| Reaction of surface soil | Acid | Very acid | Acid | Acid | | | | |
| Series | Lordstown | Allis | Hanover | Fallsbury | | | | |
| Important textures | stony loam silt loam | silty clay loam | silt loam | silt loam | | | | |

TABLE 3.—Glacial Sandstone and Shale Soils and Associated Soils (continued)

Terrace Soils (Second bottom)

| Topography | Level | | Associated soils—glacial sandstone and shale soils | | | | |
|---|--|--|--|---|--|--|--|
| Color of surface soil | Brown | Brownish-gray | Very dark gray | Brown | Light brown | Gray | Dark gray to grayish-black |
| Color and character of subsoil | Yellowish-brown | Yellowish-brown mottled with gray below 8-15 in. | Mottled dark gray and yellowish-brown | Yellowish-brown | Yellowish-brown mottled with gray below 15 in. Heavy | Mottled gray and yellowish-brown below 8 in. Heavy | Mottled bluish-gray and yellowish-brown. Heavy |
| Character of and depth to parent material | Stratified sand and gravel below 24-36 in. | Stratified sand and gravel below 24-36 in. | Stratified sand and gravel below 30-40 in. | Laminated silt and clay below 24-36 in. | Laminated silt and clay below 30-40 in. | Laminated silt and clay below 30-40 in. | Laminated silt and clay below 30-40 in. |
| Natural drainage | Good | Fair to poor | Very poor | Fair to good | Fair | Very poor | Very poor |
| Reaction of surface soil | Acid | Very acid | Slightly acid | Acid | Acid | Very acid | Slightly acid |
| Series | Chenango | Braceville | Atherton | Mentor | Glenford* | Sebring | Luray |
| Important textures | Gravelly loam silt loam | silt loam | silt loam | silt loam | silt loam | silt loam | silty clay loam |

*Fitchville silt loam, new type, poorly drained, mottled at 8 inches.

TABLE 3.—Glacial Sandstone and Shale Soils and Associated Soils (concluded)

| Alluvial Soils (First bottom or flood plain) | | | | | | | | |
|--|-----------------------------------|--------------------------------------|--|--|--|--|--|--|
| Associated soils | Glacial sandstone and shale soils | | | | | | | |
| Color of surface soil | Brown | Light brown | Gray | Gray-black | | | | |
| Color and character of subsoil | Brown | Brown mottled with gray below 15 in. | Mottled gray and grayish-brown below 8 in. | Mottled bluish-gray, gray, and yellowish-brown | | | | |
| Natural drainage | Good | Fair | Very poor | Very poor | | | | |
| Reaction of surface soil | Acid | Acid | Acid | Slightly acid | | | | |
| Series | Chagrin | Lobdell | Wayland* | Papakating | | | | |
| Important textures | loam silt loam | silt loam | silt loam | silty clay loam | | | | |

*Called Holly prior to 1946.

TABLE 4.—Soils of the Glacial Lake Region of Northwestern Ohio. Area III

Lacustrine Soils (Glacial lake deposits)

| Topography | Beach ridges | Undulating to gently rolling | | | | | |
|---|---|--|----------------------|--|--|--|--|
| Color of surface soil | Brown | Light brown | | Brownish-gray (Sandy) | Grayish-brown | | Brownish-gray |
| Color and character of subsoil | Reddish-brown | Yellowish-brown upper subsoil, pale yellow below 24-28 in. | | Mottled gray and yellowish-brown; clay below 24-30 in. | Yellowish-brown, may be slightly mottled below 28-30 in. | Yellowish-brown, mottled below 18-20 in. | Mottled gray, yellowish-gray, and yellow |
| Character of and depth to parent material | Stratified sand and gravel over clay at 36-60 in. | Sand or non-calcareous sand and gravel 60-120 in. | Clay below 36-48 in. | Clay below 24-30 in. | Laminated calcareous silt and clay at 36-48 | | |
| Natural drainage | Good | Good | Fair to good | Fair to poor | Good | Fair | Poor |
| Reaction of surface soil | Not acid | Acid | Acid | Acid | Slightly acid | Slightly acid | Acid |
| Series | Belmore | Plainfield | Berrien | Rimer | Lucas | Dunkirk | Fulton |
| Important textures | gravelly loam loam | fine sand | fine sand | fine sandy loam loam | silt loam silty clay loam | silt loam sil. clay lo. | silt loam silty clay loam |

TABLE 4.—Soils of Glacial Lake Region of Northwestern Ohio (continued)

Lacustrine Soils (Glacial lake deposits), continued

| Topography | Level | | | | | | |
|---|---|---|--|---|--------------------------|---|--|
| | Very dark gray | | | Grayish-black | | | Dark gray to black |
| Color of surface soil | Mottled gray and yellowish-brown; deep sand | Mottled gray and yellowish-brown; sandy | Mottled bluish-gray and yellowish-brown; heavy | Mottled bluish-gray and yellow | Gray mottled with yellow | Mottled bluish-gray and yellow | Light gray or mottled gray and yellowish-brown |
| Color and character of subsoil | Deep sand or sand and gravel to 60-120 in. | Clay below 24-30 in. | Laminated calcareous silt and clay | Deep sand or sand and gravel to 60-120 in | Clay below 24-30 in. | Laminated silt and clay below 36-48 in. | Marl below 12-24 in. |
| Character of and depth to parent material | Deep sand or sand and gravel to 60-120 in. | Clay below 24-30 in. | Laminated calcareous silt and clay | Deep sand or sand and gravel to 60-120 in | Clay below 24-30 in. | Laminated silt and clay below 36-48 in. | Marl below 12-24 in. |
| Natural drainage | Poor | Poor | Very poor | Very poor | Very poor | Very poor | Very poor |
| Reaction of surface soil | Slightly acid | Slightly acid | Not acid | Not acid | Not acid | Not acid | Not acid |
| Series | Newton | Wauseon | Toledo | Maumee | Neapolis | Bono | Warners |
| Important textures | fine sand | fine sandy loam | ver. fine san. lo. clay loam silty clay | fine sand | fine sandy lo. | silty clay | loam |

TABLE 4.—Soils of Glacial Lake Region of Northwestern Ohio (concluded)

| Glacial Soils of the Lake Plain Area | | | | | | | Alluvial Soils* | |
|---|---|--|--|--|---|--|--------------------------------|--|
| Topography | Gently rolling | Undulating | Level | | | | Level | |
| Color of surface soil | Grayish-brown | Brownish-gray | Gray | Very dark gray | | Gray-black | Grayish-brown | Brownish-gray |
| Color and character of subsoil | Yellowish-brown, slightly mottled below 24-36 in. | Mottled yellowish-brown and yellowish-gray; upper subsoil very heavy | Mottled gray and yellowish-brown; very heavy | Mottled dark gray and yellowish-brown; heavy | Mottled dark gray and yellowish-brown; very heavy | Mottled bluish-gray and yellow | Brown | Mottled gray and yellowish-brown below 15-18 in. |
| Character of and depth to parent material | Heavy calcareous glacial drift below 24-36 in. | Heavy calcareous glacial drift below 24-36 in. | Heavy calcareous glacial drift below 24-36 in. | Heavy calcareous glacial drift below 30-40 in. | Very heavy calcareous glacial drift below 30-40 in. | Heavy calcareous glacial drift below 30-40 in. | . | . |
| Natural drainage | Good | Poor | Very poor | Very poor | Very poor | Very poor | Fair to good | Fair to poor |
| Reaction of surface soil | Slightly acid | Acid | Acid | Not acid | Not acid | Not acid | Not acid | Not acid |
| Series | St. Clair | Nappanee | Palmer | Brookston | Paulding | Olyde | Genesee | Eal |
| Important textures | silty clay loam | silty clay loam clay loam | clay | clay loam clay. | clay | clay loam clay | loam silt loam clay loam | silt. clay lo. |

*For a complete list of alluvial soils see Table 3.

TABLE 5.—Soils of the Glacial Lake Region of Northeastern Ohio. Area IV

Lacustrine Soils (Glacial lake deposits)

| Topography | Beach ridges | Undulating to gently rolling | | | Level | | |
|---|--|--|----------------------|--|--|---|--|
| | | Light brown | | Grayish-brown | Brownish-gray to gray | Very dark gray (sandy) | Very dark gray |
| Color of surface soil | Brown | Light brown | | Grayish-brown | Brownish-gray to gray | Very dark gray (sandy) | Very dark gray |
| Color and character of subsoil | Yellowish-brown | Yellowish-brown upper subsoil, pale yellow below | | Yellowish-brown; lower subsoil heavy | Mottled gray and yellowish-brown; lower subsoil heavy | Mottled yellowish-brown and gray; lower subsoil heavy | Mottled bluish-gray and yellowish-brown |
| Character of and depth to parent material | Stratified sand and gravel below 24-36 in. | Sand or non-calcareous sand and gravel to 60-120 in. | Clay below 36-48 in. | Laminated very fine sand, silt, and clay below 30-40 in. | Laminated very fine sand, silt, and clay below 30-40 in. | Clay below 24-36 in. | Laminated very fine sand, silt, and clay below 36-50 in. |
| Natural drainage | Good | Good | Fair to good | Fair to good | Poor | Very poor | Very poor |
| Reaction of surface soil | Acid | Acid | Acid | Acid | Very acid | Acid | Acid |
| Series | Chenango (beach-ridge phase) | Plainfield | Berrien | Painesville | Caneadea | Reynolds | Lorain |
| Important textures | gravelly loam loam | fine sand | fine sand | fine sandy loam silt loam | fine san. lo. sil. clay lo. silty clay | fine sandy loam | loam silty clay loam silty clay |

TABLE 5.—Soils of Glacial Lake Region of Northeastern Ohio (concluded)

| Glacial Soils of the Lake Plain Area | | | | | | Alluvial Soils* | | |
|---|---|--|---|--|--|-------------------|--------------------------------------|--|
| Topography | Undulating to gently rolling | | Level | | Undulating | Level | | |
| Color of surface soil | Grayish-brown | Brownish-gray | Gray | Dark gray to grayish-black | Brownish-gray | Brown | Light brown | Gray |
| Color and character of subsoil | Yellowish-brown mottled with gray below 18-20 in.; lower subsoil very heavy | Mottled yellowish-brown and gray below 8 in.; lower subsoil very heavy | Mottled gray, yellowish-brown, and rust-brown; moderately heavy to very heavy | Mottled bluish-gray, gray, and rust-brown; heavy to very heavy | Mottled yellowish-brown and gray; very heavy | Brown | Brown mottled with gray below 15 in. | Mottled gray and grayish-brown below 8 in. |
| Character of and depth to parent material | Glacial drift (shale and sandstone) below 30-36 in. | Glacial drift (shale and sandstone) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. | Glacial drift (sandstone and shale) below 30-36 in. | Bedrock (shale) below 12-36 in. | | | |
| Natural drainage | Fair | Very poor | Very poor | Very poor | Very poor | Good | Fair | Very poor |
| Reaction of surface soil | Acid | Very acid | Very acid | Acid | Very acid | Acid | Acid | Acid |
| Series | Ellsworth | Mahoning | Trumbull | Chippewa† | Allis | Chagrin | Lobdell | Wayland‡ |
| Important textures | silt loam silty clay loam | silt loam silty clay loam | silt loam | silty clay loam | silt. clay lo. | loam silt loam | silt loam | silt loam |

*For a complete list of alluvial soils see Table 3.

†Very heavy subsoil phase.

‡Called Holly prior to 1946.

TABLE 6.—Residual Limestone and Shale Soils and Associated Soils. Area V

| Upland Soils (Residual limestone and shale soils) | | | | | | | | |
|---|--|--|--|--|--|---|--|---|
| Topography | Steep slopes | | | Gently rolling | | | Undulating | Gently rolling |
| Color of surface soil | Brown | | Brown with reddish cast | Brown | | | Brownish-gray | Brown |
| | Color and character of subsoil | Olive-yellow; very heavy | Yellowish-brown; very heavy | Reddish-brown; very heavy | Yellowish-brown; very heavy | Mottled yellow and red very heavy |  |  | Reddish-brown; moderately heavy | Mottled yellow and yellowish-brown below 18 in. | Yellowish-brown; lower subsoil reddish-brown |
| Character of and depth to parent material | Bedrock (limestone and shale) at 24-36 in. | Bedrock (limestone and shale) at 30-40 in. | Bedrock (limestone and shale) at 30-40 in. | Bedrock (limestone and shale) at 40-50 in. | Bedrock (limestone and shale) at 40-50 in. | Bedrock (limestone and shale) below 40-60 in. | Bedrock (high-calcium limestone and shale) | Bedrock (porous limestone) at 30-50 in. |
| Natural drainage | Good | Good | Good | Good | Fair to good | Good | Fair to poor | Good |
| Reaction of surface soil | Not acid | Not acid | Not acid | Slightly acid | Slightly acid | Slightly acid | Acid | Slightly acid |
| Series | Fairmount | Eden | Heitt | Maddox | Ellsberry | Hagerstown | Bentonville | Cedarville |
| Important textures | silty clay loam | silty clay loam | silty clay loam | silt loam | silt loam | silt loam | silt loam | silt loam |

TABLE 6.—Residual Limestone and Shale Soils and Associated Soils (continued)

| Topography | Residual from calcareous shales and limestones | | | | Residual from noncalcareous shale | | |
|---|---|---|--------------------------------------|---|-----------------------------------|---|---------------------------|
| | Gently rolling | Undulating | | Level | Gently sloping | Gently rolling to rolling | Rolling |
| Color of surface soil | Brown | Grayish-brown | Brownish-gray | Very dark gray | Brown | Grayish-brown | Brown |
| Color and character of subsoil | Yellowish-brown to 20 in.; reddish-brown below 20 in. | Yellowish-brown mottled with gray below 16-20 in. | Yellowish-brown mottled below 16 in. | Mottled bluish-gray and yellowish-brown below 8 in. | Yellowish-brown | Yellowish-brown; lower subsoil very heavy | Reddish-brown |
| Character of and depth to parent material | Bedrock (dolomitic limestone) | Bedrock (limestone and shale) below 40-60 in. | Bedrock (dolomitic limestone) | Bedrock (limestone and shale) below 40-60 in. | Sandstone rubble over black shale | Bedrock noncalcareous black shale below 24-40 in. | Red shale (noncalcareous) |
| Natural drainage | Good | Fair | Fair to poor | Very poor | Good | Good | Good |
| Reaction of surface soil | Slightly acid | Slightly acid | Acid | Not acid | Acid | Very acid | Acid |
| Series | Bratton | Bedford | Jacksonville | Burgin | Fawcett | Colyer | Latham |
| Important textures | silt loam | silt loam | silt loam | silt loam | silt loam | silt loam | silt loam |

TABLE 6.—Residual Limestone and Shale Soils and Associated Soils (concluded)

| Alluvial Soils | | | | | | | | |
|--------------------------------|------------------------------|--------------------------------------|--|----------------------------------|--|--|--|--|
| Topography | Level | | | | | | | |
| Color of surface soil | Brown to dark brown | Brown to grayish-brown | Gray | Very dark gray | | | | |
| Color and character of subsoil | Brown | Brown mottled with gray below 15 in. | Mottled gray and grayish-brown below 8 in. | Mottled yellowish-brown and gray | | | | |
| Natural drainage | Good | Fair | Very poor | Very poor | | | | |
| Reaction of surface soil | Not acid | Not acid | Acid | Not acid | | | | |
| Series | Huntington | Lindside | Melvin | Dunning | | | | |
| Important textures | silt loam silty clay loam | silt loam silty clay loam | silt loam silty clay loam | silt loam | | | | |

TABLE 7.—Residual Sandstone and Shale Soils and Associated Soils. Area VI

| Upland Soils | | | | | | | | |
|---|--|---|---|----------------------------|--|--|---|---|
| Topography | Rolling to steep | | | | | | | |
| Color of surface soil | Brown to yellowish-brown | | Grayish-brown | Reddish-brown | Brown to dark brown | Mixed soil | Mixed soil | Mixed soil |
| Color and character of subsoil | Yellowish-brown with sandstone fragments | Variegated red, yellow, and gray silty clay loam below 18 in. | Yellowish-brown to 18 in.; mottled yellowish-brown and gray at 16 in. Heavy | Red clay; very heavy | Yellow-olive; very heavy | Muskingum and Upshur | Muskingum and Brooke | Muskingum, Brooke, and Upshur |
| Character of and depth to parent material | Sandstone and shale below 20-80 in. | Shale and sandstone below 30-36 in. | Noncalcareous clay shale | Clay shale below 24-40 in. | Limestone and calcareous shale below 18-36 in. | Sandstone, shale, and clay shale below 24-36 in. | Limestone, sandstone, and shale below 24-36 in. | Limestone, shale, sandstone, and clay shale below 24-36 in. |
| Natural drainage | Good | Good | Fair | Good | Good | Good | Good | Good |
| Reaction of surface soil | Acid | Acid | Acid | Not acid to slightly acid | Not acid | Acid to slightly acid | Not acid to slightly acid | Not acid to slightly acid |
| Series | Muskingum | Barden | Keene | Upshur | Brooke | Meigs | Westmoreland | Belmont |
| Important textures | silt loam loam | silt loam | silt loam | clay | silty clay loam | silty clay loam | silty clay loam | silty clay loam |

TABLE 7.—Residual Sandstone and Shale Soils and Associated Soils (continued)

| Upland Soils (continued) | | | | | | |
|---|---|--|--|-------------------------------------|---|--|
| Topography | Gently rolling | | Level to undulating | | Gently rolling | |
| | Brown | | Grayish-brown | Gray | Brown | |
| Color of surface soil | Brown | | Grayish-brown | Gray | Brown | |
| Color and character of subsoil | Brownish-yellow silt loam free from sandstone fragments to 36 in. | Brownish-yellow, slightly heavy, with some sandstone fragments | Yellowish-brown mottled with yellow and gray below 16-20 in. | Mottled gray and yellow below 8 in. | Variegated red, yellow, and gray heavy silty clay loam below 24 in. | |
| Character of and depth to parent material | Sandstone and shale below 40-60 in. | Sandstone and shale below 36-40 in. | Sandstone and shale below 36-48 in. | Sandstone and shale below 36-48 in. | Shale and sandstone below 40-50 in. | |
| Natural drainage | Good | Good | Fair | Very poor | Good | |
| Reaction of surface soil | Acid | Acid | Acid | Acid | Acid | |
| Series | Zanesville* | Wellston | Tililt | Johnsburg | Coolville | |
| Important textures | silt loam | silt loam | silt loam | silt loam | silt loam | |

*Soil probably of windblown origin.

TABLE 7.—Residual Sandstone and Shale Soils and Associated Soils (continued)

Terrace Soils (Second bottom)

| Associated soils | Muskingum, Rarden, Meigs, Zanesville, Wellston, and Tilstit | | | | Brooke, Westmoreland, and Belmont | | | Upshur and Meigs |
|---|---|--|--|---|---|--|---|--|
| | Brown to yellowish-brown | Grayish-brown | Brownish-gray | Grayish-black | Brown | Brown to grayish-brown | Gray | Brown |
| Color of surface soil | | | | | | | | |
| Color and character of subsoil | Yellowish-brown; moderately heavy | Yellowish-brown mottled with gray and yellow below 18-20 in. | Mottled gray and yellowish-brown below 8 in. | Mottled bluish-gray and yellowish-brown | Yellowish-brown; heavy below 10-15 in. | Yellowish-brown mottled with gray and yellow below 15-20 in. | Mottled yellowish-brown, gray, and rust-brown below 8 in. | Yellowish-brown upper subsoil; dark red clay below 15-20 in. |
| Character of and depth to parent material | Laminated silt and clay below 36-48 in. | Laminated silt and clay below 36-48 in. | Laminated silt and clay below 30-40 in. | Laminated silt and clay below 30-40 in. | Laminated silt and clay below 24-40 in. | Laminated silt and clay below 24-40 in. | Laminated silt and clay below 24-40 in. | Laminated silt and clay below 24-40 in. |
| Natural drainage | Good | Fair | Poor | Very poor | Good | Fair | Poor | Good |
| Reaction of surface soil | Acid | Acid | Very acid | Acid | Slightly acid | Slightly acid | Acid | Acid |
| Series | Holston | Monongahela | Tyler* | Blago | Elk | Captina | Robertsville | Vincent |
| Important textures | silt loam | silt loam | silt loam | silty clay loam | silt loam | silt loam | silt loam | silt loam |

*Purdy, new series, surface gray, very poor drainage.

TABLE 7.—Residual Sandstone and Shale Soils and Associated Soils (concluded)

Alluvial Soils (First bottom or flood plain)

| Associated soils | Muskingum, Rarden, Zanesville, Wellston, and Tilsit | | | Brooke, Westmoreland, and Belmont | | | Very dark gray | Meigs and Upshur |
|--------------------------------|---|--|---|-----------------------------------|--------------------------------------|--|----------------------------------|-----------------------------|
| | Brown to yellowish-brown | Brown to grayish-brown | Gray | Brown to dark brown | Brown to grayish-brown | Gray | | Reddish-brown |
| Color of surface soil | Brown to yellowish-brown | Brown mottled with gray and rust-brown below 15-18 in. | Mottled brown, gray, and rust-brown below 8 in. | Brown | Brown mottled with gray below 15 in. | Mottled gray and grayish-brown below 8 in. | Mottled yellowish-brown and gray | Reddish-brown |
| Color and character of subsoil | Brown to yellowish-brown | Brown mottled with gray and rust-brown below 15-18 in. | Mottled brown, gray, and rust-brown below 8 in. | Brown | Brown mottled with gray below 15 in. | Mottled gray and grayish-brown below 8 in. | Mottled yellowish-brown and gray | Reddish-brown |
| Natural drainage | Good | Fair | Very poor | Good | Fair | Very poor | Very poor | Fair to good |
| Reaction of surface soil | Acid | Acid | Acid | Not acid | Not acid | Acid | Not acid | Not acid |
| Series | Pope | Philo | Atkins* | Huntington | Lindside | Melvin | Dunning | Moshannon |
| Important textures | loam silt loam | silt loam | silt loam | silt loam silty clay loam | silt loam silty clay lo. | silt loam silty clay loam | silt loam | silt loam silt. clay lo. |

*Elkins, new series, very dark gray surface, mottled subsoil, drainage very poor.

TABLE 8.—Glacial Limestone Soils and Associated Soils. Area I

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ^{2*} | | | | | | | | | | | | | |
|------------------------------------|--|---------------------------------------|-------|-------|-----------|------------|---------|----------|-----------|----------|-----------|-------------|---------|-----------------------|---|
| | | Corn | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pas-ture | Soy-beans | To-bacco | Pota-toes | Truck crops | Or-chor | Forestry ³ | |
| | | | | | | | | | | | | | | H | C |
| Upland Soils | | | | | | | | | | | | | | | |
| Late Wisconsin Drift Soils | | | | | | | | | | | | | | | |
| Bellefontaine silt loam | 3 | 5 (7) | 6 (9) | 5 (6) | 6 (8) | 8 (10) | 8 (10) | 8 (9) | 7 (8) | 6 (8) | 5 (8) | 6 (8) | A | A | C |
| Miami silt loam | 3 | 5 (7) | 6 (8) | 5 (7) | 5 (8) | 6 (9) | 6 (9) | 7 (8) | 7 (8) | 5 (7) | 4 (7) | 4 (7) | A | B | C |
| Miami silty clay loam | 4 | 4 (6) | 4 (7) | 4 (7) | 5 (7) | 5 (8) | 5 (7) | 7 (8) | 6 (7) | 4 (6) | 4 (6) | 4 (7) | B | B | C |
| Crosby silt loam | 4 | 2 (5) | 3 (5) | 3 (5) | 4 (6) | 4 (6) | 1 (5) | 5 (7) | 5 (7) | 2 (5) | 1 (5) | ..... | B | C | C |
| Crosby silty clay loam | 5 | 2 (4) | 2 (4) | 3 (5) | 4 (5) | 3 (6) | 1 (4) | 4 (6) | 4 (7) | 2 (4) | 1 (4) | ..... | C | C | C |
| Bethel silt loam | 6 | 1 (4) | 1 (4) | 2 (4) | 3 (4) | 2 (4) | 1 (3) | 3 (5) | 3 (6) | 0 (3) | 0 (3) | ..... | C | C | C |
| Pandora silty clay loam | 7 | 3 (10) | 3 (7) | 3 (8) | 6 (10) | 5 (10) | 3 (10) | 4 (10) | 4 (9) | 2 (8) | 0 (4) | ..... | C | C | C |
| Brookston silty clay loam | 7.5 | 3 (10) | 3 (7) | 3 (8) | 6 (10) | 5 (10) | 3 (10) | 4 (10) | 4 (9) | 2 (8) | 0 (4) | ..... | C | C | C |
| Clyde silty clay loam | 1 | 2 (10) | 3 (6) | 2 (7) | 6 (10) | 5 (10) | 3 (10) | 4 (10) | 4 (9) | 2 (7) | 0 (4) | ..... | C | C | C |
| Early Wisconsin Drift Soils | | | | | | | | | | | | | | | |
| Russell silt loam | 3 | 5 (7) | 5 (8) | 5 (7) | 5 (7) | 6 (9) | 6 (9) | 7 (8) | 7 (8) | 5 (7) | 4 (7) | 4 (7) | A | B | C |
| Fincastle silt loam | 5 | 4 (6) | 3 (5) | 4 (6) | 3 (6) | 4 (6) | 1 (5) | 5 (7) | 5 (7) | 2 (5) | 0 (5) | ..... | B | C | C |
| Delmar silt loam | 7 | 1 (4) | 1 (4) | 2 (4) | 3 (4) | 2 (4) | 1 (3) | 3 (5) | 3 (6) | 0 (3) | 0 (3) | ..... | C | C | C |
| Brookston silt loam | 1 | 3 (10) | 3 (7) | 4 (7) | 6 (10) | 6 (10) | 4 (10) | 4 (10) | 5 (9) | 2 (9) | 1 (4) | ..... | C | C | C |
| Illinois Drift Soils | | | | | | | | | | | | | | | |
| Fairmount silty clay loam | 6† | 5 (6) | 5 (7) | 5 (6) | 8 (9) | 8 (9) | 9 (10) | 8 (9) | 7 (8) | 7 (9) | ..... | ..... | C | B | C |
| Edenton silt loam | 6† | 5 (6) | 5 (7) | 5 (6) | 7 (8) | 7 (8) | 7 (9) | 7 (8) | 7 (8) | 6 (8) | 4 (6) | ..... | B | B | C |
| Cincinnati silt loam | 5 | 4 (6) | 4 (6) | 3 (4) | 3 (6) | 3 (6) | 0 (5) | 4 (6) | 5 (6) | 5 (7) | 4 (6) | 4 (6) | B | B | C |
| Rossmoyne silt loam | 5.5 | 3 (6) | 3 (6) | 3 (4) | 3 (6) | 2 (5) | 0 (4) | 4 (6) | 4 (6) | 4 (6) | 3 (6) | 3 (6) | B | B | C |
| Avonburg silt loam | 5.5 | 2 (5) | 1 (5) | 1 (3) | 2 (4) | 2 (4) | 0 (3) | 3 (5) | 3 (5) | 2 (2) | 0 (3) | ..... | C | C | C |
| Clermont silt loam | 7.5 | 1 (4) | 1 (4) | 1 (3) | 2 (4) | 1 (4) | 0 (2) | 2 (5) | 2 (5) | 0 (1) | 0 (2) | ..... | C | C | C |
| Blanchester silt loam | 5 | 2 (7) | 1 (6) | 2 (4) | 3 (6) | 2 (5) | 0 (3) | 3 (6) | 2 (7) | 0 (3) | 1 (3) | ..... | C | C | C |

TABLE 8.—Glacial Limestone Soils and Associated Soils (concluded)

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | Forestry ³ | | |
|--------------------------------------|--|--------------------------------------|--------|-------|-----------|------------|---------|---------|----------|---------|----------|-------------|-----------------------|---|---|
| | | Corn | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pasture | Soybeans | Tobacco | Potatoes | Truck crops | Orchard | H | C |
| | | Terrace Soils (second bottom) | | | | | | | | | | | | | |
| Fox silt loam | 2 | 6 (8) | 8 (10) | 6 (7) | 8 (9) | 9 (10) | 8 (10) | 9 (10) | 8 (9) | 6 (9) | 6 (9) | 6 (8) | B | B | C |
| Wheeling silt loam | 3 | 5 (7) | 6 (9) | 5 (6) | 6 (8) | 7 (9) | 5 (8) | 6 (9) | 8 (9) | 6 (8) | 6 (9) | 6 (8) | B | B | C |
| Williamsburg silt loam | 5 | 4 (6) | 4 (6) | 3 (5) | 4 (6) | 3 (7) | 1 (5) | 4 (6) | 5 (6) | 3 (5) | 3 (5) | 4 (6) | B | B | C |
| Alluvial Soils (first bottom) | | | | | | | | | | | | | | | |
| Genesee silt loam | 2 | 9 (10) | 5 (6) | 6 (7) | 9 (9) | 9 (10) | 9 (10) | 8 (9) | 10 (10) | 6 (8) | 5 (8) | 5 (8) | ..... | B | C |
| Eel silt loam | 3 | 4 (7) | 3 (4) | 4 (6) | 5 (8) | 5 (9) | 3 (7) | 5 (9) | 5 (8) | 4 (6) | 3 (5) | ..... | ..... | B | C |
| Waubesa silt loam | 1 | 3 (10) | ..... | 2 (6) | 6 (9) | 4 (10) | 4 (10) | 4 (9) | 4 (10) | 2 (7) | 0 (3) | ..... | ..... | B | C |
| Huntington silt loam | 2 | 9 (10) | 5 (6) | 7 (8) | 9 (9) | 9 (10) | 9 (10) | 9 (10) | 10 (10) | 7 (8) | 5 (8) | ..... | ..... | B | C |
| Lindsie silt loam | 3 | 5 (9) | 4 (5) | 4 (6) | 5 (8) | 5 (9) | 5 (7) | 6 (8) | 6 (8) | 5 (7) | 4 (6) | 2 (5) | ..... | B | C |
| Melvin silt loam | 6 | 1 (5) | ..... | 1 (4) | 2 (6) | 2 (6) | 0 (4) | 2 (6) | 2 (5) | ..... | 0 (3) | ..... | ..... | C | C |

*Note: The crop productivity rating tables are not to be reproduced without special permission.
 †Erosion a serious problem. ¹'1' is the highest productivity rating. ²'10' is the highest productivity index. ³Forestry: H—Hardwoods, C—Conifers.

TABLE 9.—Glacial Sandstone and Shale Soils and Associated Soils. Area II

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | Forestry ³ | | |
|-----------------------------------|--|--------------------------------------|--------|-------|-----------|------------|---------|---------|-----------|----------|-------------|---------|-----------------------|---|--|
| | | Corn ¹ | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pasture | Soy-beans | Potatoes | Truck crops | Orchard | H | C | |
| | | | | | | | | | | | | | | | |
| Upland Soils | | | | | | | | | | | | | | | |
| Late Wisconsin Drift Soils | | | | | | | | | | | | | | | |
| Wooster silt loam..... | 2.5 | 4 (7) | 5 (10) | 5 (7) | 5 (7) | 3 (9) | 1 (8) | 5 (7) | 7 (8) | 4 (9) | 5 (8) | A | B | B | |
| Canfield silt loam..... | 4 | 3 (6) | 4 (9) | 5 (7) | 5 (6) | 3 (9) | 1 (7) | 5 (7) | 6 (8) | 3 (7) | 4 (7) | B | B | B | |
| Ravenna silt loam..... | 5 | 2 (5) | 3 (5) | 3 (6) | 4 (6) | 0 (6) | 0 (5) | 4 (6) | 5 (7) | 1 (6) | 2 (5) | C | C | C | |
| Trumbull silt loam..... | 7 | 1 (3) | 1 (4) | 1 (6) | 3 (5) | 0 (4) | 0 (3) | 2 (6) | 2 (5) | 0 (3) | ..... | C | C | C | |
| Chippewa silt loam..... | 2.5 | 2 (8) | 3 (6) | 2 (4) | 4 (7) | 2 (8) | 2 (4) | 4 (7) | 4 (8) | 0 (5) | ..... | C | C | C | |
| Rittman silt loam..... | 4.5 | 3 (6) | 4 (8) | 4 (6) | 5 (6) | 3 (8) | 1 (6) | 4 (7) | 6 (8) | 2 (6) | 3 (6) | B | B | C | |
| Wadsworth silt loam..... | 5.5 | 2 (4) | 3 (5) | 3 (5) | 4 (6) | 0 (5) | 0 (4) | 4 (6) | 5 (7) | 1 (5) | ..... | C | C | C | |
| Ellsworth silt loam..... | 5 | 3 (5) | 4 (7) | 4 (6) | 5 (6) | 2 (7) | 1 (5) | 4 (7) | 6 (7) | 2 (6) | ..... | B | B | C | |
| Ellsworth silty clay loam..... | 6 | 3 (4) | 4 (6) | 3 (5) | 4 (6) | 2 (6) | 1 (4) | 4 (7) | 5 (7) | 1 (5) | ..... | B | B | C | |
| Mahoning silt loam..... | 6 | 2 (5) | 3 (5) | 3 (5) | 5 (6) | 0 (6) | 0 (3) | 4 (6) | 5 (6) | 1 (5) | ..... | C | C | C | |
| Mahoning silty clay loam..... | 7 | 2 (4) | 3 (4) | 2 (4) | 4 (6) | 0 (5) | 0 (2) | 3 (6) | 4 (6) | 1 (4) | ..... | C | C | C | |
| Trumbull silty clay loam..... | 8 | 0 (3) | 0 (3) | 1 (3) | 2 (5) | 0 (4) | 0 (2) | 2 (6) | 2 (4) | 0 (3) | ..... | C | C | C | |
| Chippewa silty clay loam..... | 8 | 2 (7) | 2 (5) | 2 (6) | 4 (7) | 2 (7) | 1 (3) | 3 (7) | 3 (7) | 0 (4) | ..... | C | C | C | |
| (Transition Soils) | | | | | | | | | | | | | | | |
| Alexandria silt loam..... | 4 | 4 (7) | 5 (9) | 5 (7) | 5 (7) | 5 (9) | 3 (8) | 6 (8) | 7 (8) | 4 (7) | 4 (7) | A | B | C | |
| Cardington silt loam..... | 4.5 | 3 (6) | 4 (8) | 4 (6) | 5 (6) | 4 (8) | 2 (7) | 6 (8) | 6 (8) | 3 (6) | 4 (6) | B | B | C | |
| Bennington silt loam..... | 5 | 2 (5) | 3 (6) | 3 (6) | 4 (6) | 3 (6) | 1 (5) | 4 (6) | 5 (6) | 1 (5) | ..... | B | B | C | |
| Condit silt loam..... | 7 | 1 (3) | 1 (4) | 1 (3) | 3 (5) | 0 (5) | 0 (3) | 2 (6) | 2 (5) | 0 (3) | ..... | C | B | C | |
| Marengo silty clay loam..... | 8 | 2 (9) | 3 (7) | 2 (6) | 4 (7) | 2 (8) | 2 (5) | 4 (7) | 3 (8) | 0 (5) | ..... | C | B | C | |
| Illinoian Drift Soils | | | | | | | | | | | | | | | |
| Hanover silt loam..... | 5 | 4 (6) | 4 (8) | 4 (6) | 4 (6) | 2 (8) | 0 (7) | 3 (6) | 5 (6) | 3 (6) | 3 (6) | A | B | B | |
| Fallsbury silt loam..... | 5 | 4 (5) | 4 (8) | 4 (6) | 4 (6) | 2 (8) | 0 (7) | 3 (6) | 5 (6) | 3 (6) | 3 (6) | A | B | B | |

TABLE 9.—Glacial Sandstone and Shale Soils and Associated Soils (concluded)

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | | | |
|--------------------------------------|--|--------------------------------------|--------|-------|-----------|------------|---------|----------|-----------|--|-----------|-------------|--------------|-----------------------|---|
| | | Corn ³ | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pas-ture | Soy-beans | | Pota-toes | Truck crops | Or- chard | Forestry ⁴ | |
| | | | | | | | | | | | | | | H | C |
| Terrace Soils (second bottom) | | | | | | | | | | | | | | | |
| Chenango loam | 4 | 3 (5) | 4 (8) | 4 (6) | 4 (6) | 4 (8) | 1 (7) | 4 (6) | 7 (8) | | 7 (10) | 7 (9) | B | B | B |
| Chenango silt loam | 3 | 5 (7) | 5 (10) | 5 (7) | 5 (7) | 5 (9) | 1 (8) | 5 (7) | 8 (9) | | 6 (9) | 6 (8) | B | B | B |
| Braceville silt loam | 5 | 2 (5) | 3 (7) | 4 (6) | 4 (7) | 2 (7) | 0 (6) | 4 (6) | 5 (7) | | 1 (6) | 2 (5) | B | B | C |
| Mentor silt loam | 4 | 4 (6) | 5 (8) | 5 (7) | 5 (7) | 3 (7) | 1 (6) | 5 (7) | 7 (8) | | 3 (6) | 3 (6) | B | B | C |
| Sebring silt loam | 7 | 1 (4) | 1 (4) | 1 (4) | 3 (5) | 0 (4) | 0 (3) | 3 (6) | 2 (5) | | 0 (3) | ..... | C | C | C |
| Alluvial Soils (first bottom) | | | | | | | | | | | | | | | |
| Chagrin silt loam | 3 | 7 (8) | 6 (7) | 6 (7) | 8 (8) | 7 (9) | 4 (7) | 8 (8) | 8 (8) | | 5 (7) | 5 (7) | ..... | B | C |
| Holly silt loam ⁵ | 6 | 1 (5) | ..... | 1 (4) | 2 (6) | 2 (6) | 0 (4) | 2 (6) | 2 (5) | | 0 (3) | ..... | C | C | C |
| Papakating silty clay loam | 3 | 1 (9) | ..... | 2 (6) | 4 (8) | 2 (7) | 0 (6) | 4 (7) | 3 (8) | | 0 (5) | ..... | C | C | C |

¹"1" is the highest productivity rating. ²"10" is the highest productivity index. ³Index somewhat higher for silage corn. ⁴Forestry: H—Hardwoods, C—Conifers. ⁵New name since 1946, Wayland silt loam.

TABLE 10.—Soils of the Glacial Lake Area of Northwestern Ohio. Area III

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | Forestry ³ | | |
|--------------------------------------|--|--------------------------------------|-------|-------|-----------|------------|---------|----------|-----------|-------------|-----------|--------------------|-----------------------|---|---|
| | | Corn | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pas-ture | Soy-beans | Sugar beets | Pota-toes | Truck crops | Or- chard | H | C |
| | | Lacustrine Soils | | | | | | | | | | | | | |
| Belmore loam..... | 5 | 4 (5) | 5 (7) | 4 (6) | 5 (6) | 5 (8) | 5 (7) | 7 (8) | 4 (5) | ..... | 6 (8) | 7 (9) | A | B | C |
| Plainfield fine sand..... | 8 | 2 (3) | 3 (4) | 2 (3) | 3 (5) | 3 (5) | 2 (4) | 2 (4) | 3 (4) | ..... | 1 (3) | 3 (5) | B | C | B |
| Berrien fine sand..... | 7 | 3 (4) | 3 (5) | 3 (4) | 3 (5) | 3 (5) | 2 (4) | 2 (4) | 3 (4) | ..... | 1 (3) | 3 (5) | B | C | B |
| Lucas silt loam..... | 4 | 4 (6) | 5 (8) | 5 (7) | 5 (7) | 4 (8) | 5 (7) | 6 (8) | 6 (8) | 3 (4) | 4 (6) | 5 (7) | A | B | C |
| Fulton silty clay loam..... | 5 | 3 (5) | 4 (7) | 4 (7) | 4 (7) | 3 (6) | 3 (5) | 5 (7) | 5 (7) | 3 (5) | 3 (5) | ..... | C | B | C |
| Rimer fine sandy loam..... | 6 | 3 (5) | 3 (6) | 4 (6) | 4 (6) | 3 (7) | 3 (5) | 4 (6) | 4 (6) | 3 (4) | 3 (6) | 4 (7) | C | B | C |
| Newton fine sand..... | | | | | | | | | | | | | | | |
| Wauseon fine sandy loam..... | 3 | 3 (6) | 3 (6) | 3 (6) | 3 (6) | 3 (6) | 2 (5) | 3 (6) | 2 (5) | ..... | 2 (4) | 2 (6) | C | C | C |
| Toledo very fine sandy loam..... | 3 | 3 (8) | 4 (8) | 4 (8) | 4 (8) | 5 (10) | 4 (8) | 5 (9) | 3 (7) | 3 (6) | 3 (8) | 6 (8) | C | B | C |
| Toledo clay loam..... | 1 | 4 (10) | 4 (8) | 4 (8) | 6 (9) | 6 (10) | 4 (9) | 5 (9) | 3 (8) | 3 (7) | 3 (8) | 8 (10) | C | B | C |
| Toledo silty clay..... | 2 | 3 (10) | 3 (8) | 3 (9) | 6 (10) | 5 (10) | 3 (10) | 4 (10) | 2 (8) | 2 (10) | 2 (6) | 5 (9) ⁴ | C | C | C |
| Maumee fine sand..... | 2 | 2 (9) | 2 (7) | 2 (8) | 6 (9) | 4 (9) | 1 (9) | 3 (10) | 1 (8) | 2 (8) | 0 (3) | 4 (8) ⁴ | C | B | C |
| Bono silty clay..... | 8 | 2 (7) | 2 (6) | 2 (5) | 2 (7) | 2 (7) | 1 (5) | 2 (6) | 1 (6) | ..... | 0 (5) | 2 (8) | C | C | C |
| Glacial Drift Soils | | | | | | | | | | | | | | | |
| Nappanee silty clay loam..... | 5 | 2 (10) | 2 (5) | 2 (7) | 4 (9) | 3 (9) | 1 (8) | 2 (9) | 1 (8) | 1 (6) | 0 (3) | 3 (5) ⁴ | C | C | C |
| Brookston clay..... | 1 | 3 (5) | 4 (7) | 4 (7) | 4 (7) | 3 (6) | 3 (5) | 5 (7) | 5 (7) | 3 (5) | 3 (5) | ..... | C | C | C |
| Paulding clay..... | 8 | 2 (9) | 3 (7) | 2 (9) | 6 (10) | 4 (10) | 2 (10) | 4 (10) | 2 (8) | 2 (9) | 0 (3) | 4 (8) ⁴ | C | B | C |
| Alluvial Soils (first bottom) | | | | | | | | | | | | | | | |
| Genesee loam..... | 4 | 2 (7) | 2 (6) | 2 (7) | 5 (9) | 3 (9) | 1 (9) | 3 (9) | 1 (8) | 1 (7) | 0 (3) | 3 (6) ⁴ | C | B | C |
| Genesee silt loam..... | 2 | 7 (8) | 4 (6) | 5 (6) | 7 (7) | 8 (8) | 7 (7) | 8 (8) | 7 (8) | ..... | 5 (8) | 6 (8) | ..... | B | C |
| | | 9 (10) | 5 (6) | 6 (7) | 9 (9) | 9 (10) | 9 (10) | 8 (9) | 10 (10) | ..... | 5 (8) | 5 (8) | ..... | B | C |

¹"1" is the highest productivity rating. ²"10" is the highest productivity index. ³Forestry: H—Hardwoods, C—Conifers. ⁴Canning crops, such as tomatoes, etc.

TABLE 11.—Soils of the Glacial Lake Area of Northeastern Ohio. Area IV

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | Forestry ³ | |
|--|--|--------------------------------------|-------|-------|-----------|------------|---------|----------|-----------|-----------|-------------|---------|-----------------------|---|
| | | Corn | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pas-ture | Soy-beans | Pota-toes | Truck crops | Orchard | H | C |
| | | | | | | | | | | | | | | |
| Lacustrine Soils | | | | | | | | | | | | | | |
| Chenango gravelly loam, beachridge phase | 5 | 3 (5) | 4 (7) | 4 (6) | 3 (6) | 4 (7) | 1 (7) | 3 (5) | 6 (7) | 6 (9) | 7 (9) | A | B | B |
| Berrien fine sand | 7 | 3 (4) | 3 (5) | 3 (4) | 3 (5) | 3 (5) | 2 (4) | 2 (4) | 3 (4) | 1 (3) | 3 (5) | B | B | B |
| Painesville fine sandy loam | 5 | 4 (5) | 4 (7) | 4 (6) | 5 (6) | 3 (7) | 3 (7) | 5 (6) | 5 (7) | 5 (8) | 5 (8) | B | B | B |
| Painesville silt loam | 4 | 4 (6) | 5 (8) | 5 (7) | 5 (7) | 3 (8) | 3 (7) | 5 (7) | 6 (8) | 4 (6) | 5 (7) | B | B | B |
| Cananda fine sandy loam | 6 | 3 (5) | 3 (6) | 3 (5) | 4 (6) | 3 (7) | 3 (7) | 4 (5) | 4 (7) | 3 (7) | 4 (7) | B | B | B |
| Cananda silty clay loam | 6 | 2 (4) | 3 (4) | 2 (5) | 4 (6) | 0 (5) | 0 (2) | 3 (5) | 4 (6) | 1 (4) | ..... | B | B | B |
| Reynolds fine sandy loam | 4 | 3 (8) | 3 (7) | 3 (7) | 4 (8) | 3 (7) | 2 (6) | 4 (8) | 3 (7) | 3 (8) | 6 (8) | B | B | B |
| Lorain loam | 2 | 3 (8) | 3 (7) | 3 (7) | 6 (8) | 3 (7) | 2 (6) | 3 (8) | 4 (8) | 3 (7) | 7 (9) | B | B | B |
| Lorain silty clay | 3 | 2 (8) | 2 (6) | 2 (8) | 5 (8) | 2 (6) | 1 (5) | 3 (8) | 1 (8) | 0 (3) | ..... | C | B | C |
| Glacial Drift Soils | | | | | | | | | | | | | | |
| Ellsworth silty clay loam | 6 | 3 (4) | 4 (6) | 3 (5) | 4 (6) | 2 (6) | 1 (4) | 4 (7) | 5 (7) | 1 (5) | 2 (4) | C | B | C |
| Mahoning silty clay loam | 7 | 2 (4) | 3 (4) | 2 (5) | 4 (6) | 0 (5) | 0 (2) | 3 (6) | 4 (6) | 1 (4) | 1 (3) | C | B | C |
| Trumbull silty clay loam | 3 | 0 (3) | 0 (3) | 1 (3) | 2 (5) | 0 (4) | 0 (2) | 2 (6) | 2 (4) | 0 (3) | ..... | C | C | C |
| Chippewa silty clay loam | 3 | 2 (7) | 2 (5) | 2 (6) | 4 (7) | 2 (7) | 1 (3) | 3 (7) | 3 (7) | 0 (4) | ..... | C | C | C |
| Allis silty clay loam | 7 | 2 (4) | 3 (4) | 2 (4) | 4 (6) | 0 (5) | 0 (2) | 3 (6) | 4 (6) | 1 (4) | ..... | C | C | C |
| Alluvial Soils (first bottom) | | | | | | | | | | | | | | |
| Chagrin silt loam | 3 | 7 (8) | 6 (7) | 6 (7) | 8 (8) | 7 (9) | 4 (7) | 8 (8) | 8 (8) | 5 (7) | 5 (7) | ..... | B | C |
| Holly silt loam | 6 | 1 (5) | ..... | 1 (4) | 2 (6) | 2 (6) | 0 (4) | 2 (6) | 2 (5) | 0 (3) | ..... | ..... | B | C |

¹'1' is the highest productivity rating. ²'10' is the highest productivity index. ³Forestry: H—Hardwoods, C—Conifers.

TABLE 12.—Residual Limestone and Shale Soils and Associated Soils. Area V

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | | Forestry ³ | |
|--------------------------------------|--|---|-------|-------|-----------|------------|---------|--------------|---------------|--------------|---------------|----------------|--------------|-----------------------|---|
| | | Corn | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pas- ture | Soy- beans | To- bacco | Po- tatoes | Truck crops | Or- chard | H | C |
| | | Residual Limestone and Shale Soils | | | | | | | | | | | | | |
| Fairmount silty clay loam..... | 6* | 5 (6) | 5 (7) | 5 (6) | 8 (9) | 8 (9) | 9 (10) | 8 (9) | 7 (8) | 7 (9) | ..... | ..... | C | B | C |
| Eden silty clay loam..... | 6* | 5 (6) | 5 (7) | 5 (6) | 7 (8) | 7 (8) | 7 (8) | 7 (8) | 7 (8) | 7 (9) | ..... | ..... | C | B | C |
| Heitt silty clay loam..... | 6* | 5 (6) | 5 (7) | 5 (6) | 7 (8) | 7 (8) | 7 (8) | 7 (8) | 6 (7) | 7 (8) | ..... | ..... | C | B | C |
| Maddox silt loam..... | 4 | 4 (7) | 4 (6) | 4 (6) | 5 (8) | 5 (7) | 4 (6) | 6 (7) | 6 (7) | 6 (8) | 4 (6) | 3 (5) | B | B | C |
| Ellaberry silt loam..... | 4 | 4 (7) | 4 (6) | 4 (6) | 5 (8) | 5 (7) | 4 (6) | 6 (7) | 6 (7) | 6 (8) | 4 (6) | 3 (5) | B | B | C |
| Hagerstown silt loam..... | 3.5 | 5 (8) | 6 (8) | 5 (6) | 5 (8) | 5 (8) | 4 (7) | 6 (7) | 6 (8) | 7 (9) | 4 (7) | 5 (7) | A | B | C |
| (Bedford) silt loam..... | 5 | 3 (5) | 4 (6) | 3 (5) | 4 (7) | 4 (6) | 3 (5) | 6 (7) | 5 (6) | 3 (6) | 3 (5) | 2 (4) | C | B | C |
| Burgin silt loam..... | 4 | 2 (8) | 2 (6) | 2 (6) | 4 (8) | 3 (8) | 2 (7) | 5 (8) | 3 (8) | 2 (7) | 0 (4) | ..... | C | B | C |
| Residual from Black Shales | | | | | | | | | | | | | | | |
| Colyer silt loam..... | 6 | 3 (5) | 4 (6) | 3 (5) | 4 (6) | 3 (4) | 0 (2) | 2 (3) | 3 (4) | 3 (5) | 3 (5) | ..... | B | C | C |
| Alluvial Soils (first bottom) | | | | | | | | | | | | | | | |
| Huntington silt loam..... | 2 | 9 (10) | 5 (6) | 7 (8) | 9 (9) | 9 (10) | 9 (10) | 9 (10) | 10 (10) | 7 (8) | 5 (8) | 5 (8) | ..... | B | C |
| Lindsay silt loam..... | 3 | 5 (9) | 4 (5) | 4 (6) | 5 (8) | 5 (9) | 5 (7) | 6 (8) | 6 (8) | 5 (7) | 4 (6) | 2 (5) | ..... | B | C |
| Holly silt loam ⁴ | 6 | 1 (5) | ..... | 1 (4) | 2 (6) | 2 (6) | 0 (4) | 2 (6) | 2 (5) | ..... | 0 (3) | ..... | ..... | C | C |

*Erosion a serious problem.

¹"1" is the highest productivity rating.²"10" is the highest productivity index.³Forestry: H—Hardwoods, C—Conifers.⁴New name since 1946, Wayland silt loam.

TABLE 13.—Residual Sandstone and Shale Soils and Associated Soils. Area VI

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | | Forestry ³ | |
|--|--|--------------------------------------|-------|-------|-----------|------------|---------|----------|-----------|----------|-----------|-------------|----------|-----------------------|---|
| | | Corn | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pas-ture | Soy-beans | To-bacco | Po-tatoes | Truck crops | Or-chard | H | C |
| | | | | | | | | | | | | | | | |
| Upland Soils | | | | | | | | | | | | | | | |
| Rolling to Steep Topography | | | | | | | | | | | | | | | |
| Muskingum silt loam | 4.5* | 4 (6) | 5 (8) | 4 (6) | 4 (7) | 3 (8) | 0 (7) | 2 (7) | 6 (7) | 3 (6) | 3 (6) | 3 (5) | B | B | B |
| Muskingum silt loam, steep phase | 9* | | | | | | | 2 (4) | | | | | B | B | B |
| Upshur clay | 6* | 3 (5) | 4 (7) | 3 (5) | 6 (7) | 4 (8) | 5 (7) | 5 (7) | 5 (6) | 2 (2) | 1 (2) | | B | B | A |
| Upshur clay, steep phase | 8* | | | | | | | 4 (5) | | | | | B | B | C |
| Brooke silty clay loam | 3.5 | 8 (9) | 6 (8) | 5 (6) | 8 (9) | 9 (10) | 8 (9) | 10 (10) | 7 (8) | 6 (8) | 4 (5) | 4 (6) | B | B | C |
| Meigs silty clay loam | 6* | 3 (5) | 5 (7) | 3 (5) | 4 (7) | 3 (8) | 3 (7) | 3 (6) | 5 (6) | 3 (4) | 3 (4) | 3 (4) | B | B | B |
| Meigs silty clay loam, steep phase | 8* | | | | | | | 3 (5) | | | | | B | B | B |
| Westmoreland silty clay loam | 4* | 5 (7) | 6 (8) | 4 (6) | 7 (8) | 6 (9) | 6 (9) | 8 (9) | 6 (8) | 6 (7) | 4 (5) | 3 (5) | A | B | C |
| Westmoreland silty clay loam, steep phase | 6* | | | | | | | | | | | | A | B | C |
| Belmont silty clay loam | 4* | 5 (7) | 5 (7) | 4 (6) | 7 (8) | 6 (9) | 5 (8) | 5 (7) | | | | | B | B | C |
| Belmont silty clay loam, steep phase | 6* | | | | | | 7 (9) | 8 (9) | 6 (8) | 4 (6) | 3 (4) | 3 (4) | A | B | C |
| | | | | | | | 5 (8) | 5 (7) | | | | | B | B | C |
| | | | | | | | 5 (8) | 5 (7) | | | | | B | B | C |
| Undulating to Gently Rolling Topography | | | | | | | | | | | | | | | |
| Zanesville silt loam | 4 | 4 (7) | 5 (8) | 4 (6) | 4 (8) | 3 (7) | 0 (7) | 3 (7) | 6 (7) | 3 (6) | 3 (7) | 3 (7) | B | B | C |
| Wellston silt loam | 4 | 4 (7) | 5 (8) | 4 (6) | 4 (8) | 3 (7) | 0 (7) | 3 (7) | 6 (7) | 3 (6) | 3 (7) | 3 (6) | B | B | C |
| Tililt silt loam | 5 | 3 (6) | 4 (7) | 3 (5) | 4 (7) | 3 (6) | 0 (6) | 3 (6) | 5 (7) | 2 (5) | 2 (5) | 2 (6) | C | C | C |

*Erosion a serious problem.
C—Conifers.

¹'1' is the highest productivity rating.

²'10' is the highest productivity index.

³Forestry: H—Hardwoods,

TABLE 13.—Residual Sandstone and Shale Soils and Associated Soils (concluded)

| Soil type | Productivity rating ¹ Ohio | Crop productivity index ² | | | | | | | | | | | | | |
|--------------------------------------|--|--------------------------------------|-------|-------|-----------|------------|---------|----------|-----------|----------|-----------|-------------|---------|-----------------------|---|
| | | Corn | Wheat | Oats | Mixed hay | Red clover | Alfalfa | Pas-ture | Soy-beans | To-bacco | Po-tatoes | Truck crops | Or-ward | Forestry ³ | |
| | | | | | | | | | | | | | | H | C |
| Terrace Soils (second bottom) | | | | | | | | | | | | | | | |
| Holston silt loam..... | 4 | 4 (6) | 4 (8) | 4 (6) | 5 (7) | 3 (7) | 0 (6) | 5 (7) | 6 (7) | 3 (5) | 3 (6) | 3 (6) | B | B | C |
| Monongahela silt loam..... | 5 | 3 (6) | 3 (7) | 3 (6) | 4 (7) | 3 (6) | 0 (5) | 5 (7) | 5 (7) | 2 (5) | 2 (5) | 2 (6) | C | B | C |
| Tyler silt loam..... | 7 | 1 (4) | 1 (4) | 1 (4) | 3 (5) | 0 (4) | 0 (3) | 5 (5) | 5 (5) | 0 (3) | 0 (3) | ..... | C | B | C |
| Eik silt loam..... | 4 | 5 (7) | 5 (8) | 5 (6) | 6 (8) | 5 (8) | 3 (7) | 5 (8) | 5 (8) | 4 (6) | 4 (6) | 3 (6) | C | B | C |
| Captina silt loam..... | 5 | 3 (6) | 3 (7) | 4 (6) | 4 (7) | 3 (6) | 1 (5) | 5 (7) | 5 (7) | 2 (5) | 2 (5) | 2 (6) | C | B | C |
| Robertsville silt loam..... | 6 | 1 (5) | 1 (5) | 1 (5) | 3 (6) | 0 (4) | 0 (3) | 5 (5) | 5 (5) | 0 (3) | 0 (3) | ..... | C | B | C |
| Vincent silt loam..... | 4 | 4 (6) | 4 (8) | 4 (6) | 5 (7) | 3 (7) | 0 (6) | 5 (7) | 6 (7) | 3 (5) | 3 (6) | 3 (6) | B | B | C |
| Chenango gravelly loam..... | | | | | | | | | | | | | | | |
| Chenango silt loam..... | 5 | 3 (5) | 4 (7) | 3 (5) | 4 (6) | 4 (7) | 1 (7) | 4 (5) | 7 (8) | 4 (6) | 7 (10) | 7 (10) | B | B | B |
| Wheeling silt loam..... | 3 | 5 (7) | 5 (9) | 5 (7) | 5 (7) | 5 (9) | 1 (8) | 5 (7) | 8 (9) | 5 (7) | 6 (9) | 6 (8) | B | B | C |
| Sciotoville silt loam..... | 4 | 5 (7) | 6 (9) | 5 (6) | 6 (8) | 7 (9) | 5 (8) | 5 (9) | 8 (9) | 6 (8) | 6 (9) | 6 (8) | B | B | C |
| Ginat silt loam..... | 6 | 4 (6) | 4 (7) | 4 (6) | 5 (7) | 3 (6) | 2 (6) | 5 (7) | 5 (7) | 3 (5) | 4 (6) | 3 (6) | C | B | C |
| Chilo silty clay loam..... | 4 | 1 (4) | 1 (5) | 1 (5) | 3 (5) | 0 (4) | 0 (3) | 5 (5) | 5 (5) | 0 (3) | 0 (3) | ..... | C | B | C |
| Alluvial Soils (first bottom) | | | | | | | | | | | | | | | |
| Pope silt loam..... | 4 | 7 (8) | 6 (7) | 6 (7) | 7 (8) | 6 (8) | 4 (7) | 7 (9) | 8 (8) | 5 (7) | 5 (7) | 5 (7) | ..... | B | C |
| Philo silt loam..... | 5 | 4 (7) | 4 (5) | 3 (5) | 6 (8) | 5 (8) | 3 (7) | 5 (7) | 6 (8) | 4 (6) | 4 (6) | 2 (5) | ..... | B | C |
| Atkins silt loam..... | 7 | 1 (4) | ..... | 1 (4) | 1 (6) | 2 (4) | 0 (3) | 2 (5) | 1 (5) | ..... | 0 (3) | ..... | ..... | B | C |
| Huntington silt loam..... | 2 | 9 (10) | 5 (6) | 7 (8) | 9 (9) | 9 (10) | 9 (10) | 9 (10) | 10 (10) | 7 (8) | 5 (8) | 5 (8) | ..... | B | C |
| Lindsay silt loam..... | 3 | 5 (9) | 4 (5) | 4 (6) | 5 (8) | 5 (9) | 5 (7) | 6 (8) | 6 (8) | 5 (7) | 4 (6) | 2 (5) | ..... | B | C |
| Melvin silt loam..... | 6 | 1 (5) | ..... | 1 (4) | 2 (6) | 2 (6) | 0 (4) | 2 (6) | 2 (5) | ..... | 0 (3) | ..... | ..... | B | C |
| Moshannon silt loam..... | 3 | 8 (9) | 5 (6) | 6 (7) | 9 (9) | 8 (9) | 8 (9) | 8 (9) | 8 (8) | 6 (7) | 5 (7) | 3 (5) | ..... | B | C |

¹"1" is the highest productivity rating. ²"10" is the highest productivity index. ³Forestry: H—Hardwoods, C—Conifers.

TABLE 14.—Miscellaneous Soils

- I. Glacial limestone and associated soils.
- Rodman gravelly loam. Brown surface soil over stratified calcareous sand and gravel. Occurs on gravel knolls and ridges (kames and eskers).
- Warsaw silt loam. Terrace soil. Dark brown surface, dull yellowish-brown subsoil, over stratified sand and gravel.
- Ross silt loam. Alluvial soil. Dark brownish-gray soil, with loose sand and gravel below 36-50 inches.
- Algiers silt loam. Alluvial soil. Brown surface over grayish-black subsoil (Genesee material over Wabash).
- II. Glacial sandstone and shale soils and associated soils.
- Otisville gravel. Brown surface soil over stratified sand and gravel (largely sandstone and shale material). Occurs on gravel knolls and ridges (kames and eskers).
- Killbuck silt loam. Alluvial soil. Brown surface, yellowish-brown subsoil; grayish-black below 15 inches. Heavy (Chagrin over Papakating).
- Wallkill silt loam. Alluvial soil. Brown surface over black peat or muck (Chagrin over muck).
- III. Soils of the glacial lake region, northwestern Ohio.
- Vaughnsville loam. Brown to reddish-brown soil occurring at base of gravelly beach ridges.
- Catawba silt loam. Glacial soil with grayish-brown surface and heavy reddish-brown subsoil. Occurs chiefly on Catawba Island, Ottawa County.
- Danbury silty clay loam. Very dark brown surface with dull yellowish-brown subsoil. Largely lacustrine in origin with minor areas of glacial material included.
- Coloma fine sand. Very sandy glacial soil. Brown surface, yellowish-brown subsoil.
- Monclova loam. Terrace soil. Dark grayish-brown surface, yellowish-brown subsoil on stratified sand and gravel at 20-24 inches with bedrock (limestone) below 36-40 inches.
- IV. Soils of the glacial lake region, northeastern Ohio.
- Wickliffe silty clay loam. Glacial soil. Gray surface, very heavy, mottled subsoil, over shale at 40-50 inches.
- V. Residual limestone and shale soils and associated soils.
- Dunkinsville silt loam. Brown surface with reddish-brown subsoil over stratified sand and gravel very deeply weathered.

VI. Residual sandstone and shale soils and associated soils.

Eifort silt loam. Brown to yellowish-brown surface over fire clay below 18-36 inches.

Frankstown gravelly silt loam. Residual soil. Grayish-brown soil, yellowish-brown to reddish-brown subsoil resting on flint. Numerous flint fragments on surface and through soil.

Hocking silt loam. Terrace soil. Brown surface with yellowish-brown subsoil over stratified sand and gravel (glacial outwash very deeply weathered).

Waynesboro silt loam. Terrace soil. Brown surface, upper subsoil yellowish-brown, lower subsoil dull red sandy clay.

Organic Soils.

Peat. Raw fibrous organic soils, high in organic matter.

Muck. Well-decomposed, finely divided organic soils of moderate content of organic matter.

TABLE 15.—Soils by Productivity Ratings

| 1 | 4 |
|--|---------------------------------|
| Brookston silt loam silty clay loam clay | Chenango gravelly loam loam |
| Clyde silty clay loam | Chilo silty clay loam |
| Dunning silt loam | Elk silt loam |
| Pandora silty clay loam | Ellsberry silty clay loam (4.5) |
| Toledo very fine sandy loam clay loam | Genesee loam |
| Wauseon silt loam | Holston silt loam |
| | Lucas silt loam |
| | Maddox silt loam |
| | Mentor loam (4.5) silt loam |
| 2 | Miami silty clay loam |
| Chippewa silt loam (2.5) | Muskingum silt loam (4.5) |
| Fox silt loam | Painesville silt loam |
| Genesee silt loam | Pope silt loam |
| Huntington silt loam | Rittman silt loam (4.5) |
| Lorain loam | Reynolds fine sandy loam |
| Toledo silty clay | Sciotoville silt loam |
| | Vincent silt loam |
| | Wellston silt loam |
| | Westmoreland silty clay loam |
| | Zanesville silt loam |
| 3 | |
| Bellefontaine silt loam | |
| Bono silty clay | |
| Brooke silty clay loam (3.5) | 5 |
| Chagrin silt loam | Bedford silt loam |
| Chippewa silty clay loam | Belmore loam |
| Eel silt loam | Bennington silt loam |
| Hagerstown silt loam (3.5) | Blanchester silt loam |
| Lindside silt loam | Braceville silt loam |
| Lorain silty clay | Captina silt loam |
| Marengo silty clay loam | Chenango gravelly loam |
| Miami silt loam | Cincinnati silt loam |
| Moshannon silt loam | Crosby silt loam |
| Neapolis fine sandy loam | Ellsworth silt loam |
| Papakating silt loam | Fallsbury silt loam |
| Paulding clay | Fincastle silt loam |
| Russell silt loam | Fulton silty clay loam |
| Wheeling silt loam | Hanover silt loam |
| Wooster silt loam (3.5) | Maumee fine sand |
| Wauseon fine sandy loam | Wadsworth silt loam (5.5) |
| | Monongahela silt loam |
| | Nappanee silty clay loam |
| 4 | Painesville fine sandy loam |
| Alexandria silt loam | Philo silt loam |
| Belmont silty clay loam | Rossmoyne silt loam (5.5) |
| Burgin silt loam | Tilsit silt loam |
| Canfield silt loam | Ravenna silt loam |
| Cardington silt loam (4.5) | Williamsburg silt loam |

TABLE 15.—Soils by Productivity Ratings (continued)

| 6 | 7 |
|--------------------------------------|-------------------------------|
| Avonburg silt loam (6.5) | Allis silty clay loam |
| Belmont silty clay loam (steep) | Atkins silt loam |
| Caneadea fine sandy loam | Berrien fine sand |
| silty clay loam | Bethel silt loam |
| Colyer silt loam | Clermont silt loam |
| Crosby silty clay loam | Condit silt loam |
| Eden silty clay loam | Delmar silt loam |
| Edenton silt loam | Mahoning silty clay loam |
| Ellsworth silty clay loam | Sebring silt loam |
| Fairmount silty clay loam | Tyler silt loam |
| Ginat silt loam | |
| Heitt silty clay loam | 8 |
| Holly silt loam | Meigs silty clay loam (steep) |
| Mahoning silt loam | Plainfield fine sand |
| Meigs silty clay loam | Trumbull silty clay loam |
| Melvin silt loam | Upshur clay (steep) |
| Newton fine sand | |
| Rimer fine sandy loam | 9 |
| Robertsville silt loam | Muskingum silt loam (steep) |
| Upshur clay | |
| Westmoreland silty clay loam (steep) | |

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| Algiers silt loam | () | 43 |
| Allis silty clay loam | (7) | 18, 25, 39 |
| Atherton silt loam | (2.5) | 19 |
| Atkins silt loam | (7) | 33, 42 |
| Avonburg silt loam | (6.5) | 12, 34 |
| Bedford silt loam | (5) | 27, 40 |
| Bellefontaine loam | (3.5) | 10, 11 |
| Bellefontaine silt loam | (3) | 10, 11, 34 |
| Belmont silty clay loam | (4) | 29, 41 |
| Belmore gravelly loam | () | 21 |
| Belmore loam | (5) | 21, 38 |
| Bennington silt loam | (5) | 17, 36 |
| Bentonville silt loam | () | 26 |
| Berrien fine sand | (7) | 21, 24, 38, 39 |
| Bethel silt loam | (7) | 10, 34 |
| Blago silty clay loam | () | 31 |
| Blanchester silt loam | (5) | 12, 34 |
| Bono silty clay | (3) | 22, 38 |
| Braceville silt loam | (5) | 19, 32, 37 |
| Bratton silt loam | (3.5) | 27 |
| Brooke' silty clay loam | (3.5) | 29, 41 |
| Brookston silt loam | (1) | 11, 34 |
| Brookston silty clay loam | (1) | 10, 34 |
| Brookston clay loam | (1) | 23 |
| Brookston clay | (1) | 23, 38 |
| Burgin silt loam | (4) | 27, 40 |
| Caneadea fine sandy loam | (6) | 24, 39 |
| Caneadea silty clay loam | (6) | 24, 39 |
| Caneadea silty clay | (6.5) | 24 |
| Canfield silt loam | (4) | 16, 36 |
| Captina silt loam | (5) | 31, 42 |
| Cardington silt loam | (4.5) | 17, 36 |
| Catawba silt loam | () | 43 |
| Cedarville silt loam | (3.5) | 26 |
| Chagrin loam | () | 20, 25 |
| Chagrin silt loam | (3) | 20, 25, 37, 39 |
| Chenango loam | (4) | 23, 37 |
| Chenango gravelly loam | (5) | 19, 23, 32, 39, 42 |
| Chenango silt loam | (3) | 19, 32, 37, 42 |
| Chilo silty clay loam | (4) | 14, 32, 42 |
| Chippewa silty clay loam | (3) | 16, 25, 36, 39 |
| Chippewa silt loam | (2.5) | 16, 36 |
| Cincinnati silt loam | (5) | 12, 34 |

*Productivity rating.

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| Clermont silt loam | (7) | 12, 34 |
| Clyde silty clay loam | (1) | 10, 34 |
| Clyde clay loam | (1) | 23 |
| Clyde clay | (1) | 23 |
| Coloma fine sand | () | 43 |
| Colyer silt loam | (6) | 27, 40 |
| Condit silt loam | (7) | 17, 36 |
| Coolville silt loam | () | 30 |
| Crosby silt loam | (5) | 10, 34 |
| Crosby silty clay loam | (6) | 10, 34 |
| Danbury silty clay loam | () | 43 |
| Delmar silt loam | (7) | 11, 34 |
| Dunkinsville silt loam | (3) | 43 |
| Dunkirk silt loam | () | 21 |
| Dunkirk silty clay loam | () | 21 |
| Dunning silt loam | (1) | 28, 33 |
| Eden silty clay loam | (6) | 26, 40 |
| Edenton silt loam | (6) | 12, 34 |
| Eel silt loam | (3) | 15, 35 |
| Eel silty clay loam | () | 15, 23 |
| Elk silt loam | (4) | 31, 42 |
| Ellsberry silt loam | (4) | 26, 40 |
| Ellsworth silt loam | (5) | 17, 25, 36 |
| Ellsworth silty clay loam | (6) | 17, 25, 36, 39 |
| Fairmount silty clay loam | (6) | 12, 26, 34, 40 |
| Fallsbury silt loam | (5) | 18, 36 |
| Fawcett silt loam | () | 27 |
| Fincastle silt loam | (5) | 11, 34 |
| Fox loam | (3) | 13 |
| Fox silt loam | (2) | 13, 35 |
| Fulton silt loam | (4.5) | 21 |
| Fulton silty clay loam | (5) | 21, 38 |
| Genesee loam | (4) | 23, 38 |
| Genesee silt loam | (2) | 15, 23, 35, 38 |
| Genesee clay loam | () | 23 |
| Ginat silt loam | (6) | 14, 32, 42 |
| Glenford silt loam | (5) | 19 |
| (Guernsey) silt loam | () | 29 |
| Hagerstown silt loam | (3.5) | 26, 40 |
| Hanover silt loam | (5) | 18, 36 |
| Heitt silty clay loam | () | 26, 40 |
| Hocking silt loam | () | 43 |

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| Holston silt loam | (4) | 31, 42 |
| Huntington silt loam | (2) | 15, 28, 33, 35, 40, 42 |
| Huntington silty clay loam | () | 15, 28, 33 |
| Jacksonville silt loam | () | 27 |
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| Lindside silty clay loam | (3) | 15, 28, 33 |
| Lobdell silt loam | (4) | 20, 25 |
| Lorain loam | (2) | 24, 39 |
| Lorain silty clay loam | (2.5) | 24 |
| Lorain silty clay | (3) | 24, 39 |
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| Maddox silt loam | (4) | 26, 40 |
| Mahoning silt loam | (6) | 17, 25, 36 |
| Mahoning silty clay loam | (7) | 17, 25, 36, 39 |
| Marengo silty clay loam | (3) | 17, 36 |
| Maumee fine sand | (5) | 22, 38 |
| Meigs silty clay loam | (6) | 29, 41 |
| Melvin silt loam | (6) | 15, 28, 33, 35, 42 |
| Melvin silty clay loam | (6.5) | 15, 28, 33 |
| Mentor silt loam | (4) | 19, 37 |
| Miami silt loam | (3) | 10, 34 |
| Miami silty clay loam | (4) | 10, 34 |
| Millsdale silty clay loam | (2) | 11 |
| Milton silt loam | (3) | 11 |
| Monongahela silt loam | (5) | 31, 42 |
| Montgomery silty clay loam | (1) | 13 |
| Montgomery silty clay loam | (1) | 13 |
| Moshannon silt loam | (3) | 33, 42 |
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| | | |
| Painesville fine sandy loam | (5) | 24, 39 |
| Painesville silt loam | (4) | 24, 39 |
| Palmer clay | (6) | 23 |
| Pandora silty clay loam | (1.5) | 10, 34 |
| Papakating silty clay loam | (3) | 20, 37 |
| Paulding clay | (3) | 23, 38 |
| Philo silt loam | (5) | 33, 42 |
| Plainfield fine sand | (8) | 21, 24, 38 |
| Pope loam | (5) | 33 |
| Pope silt loam | (4) | 33, 42 |
| | | |
| Randolph silt loam | (5) | 11 |
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| Ravenna silt loam | (5) | 16, 36 |
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| Rodman gravelly loam | () | 43 |
| Ross silt loam | (1) | 43 |
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| | | |
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| Sloan silt loam | () | 15 |
| St. Clair silty clay loam | () | 23 |
| | | |
| Tilsit silt loam | (5) | 30, 41 |
| Toledo very fine sandy loam | (1) | 22, 38 |
| Toledo clay loam | (1) | 22, 38 |
| Toledo silty clay | (2) | 22, 38 |
| Trumbull loam | (6.5) | 16 |
| Trumbull silt loam | (7) | 16, 25, 36 |
| Trumbull silty clay loam | (8) | 16, 36, 39 |
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| Wabash silty clay loam | (2) | 15 |
| Wadsworth silt loam | (5.5) | 16, 36 |
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| Warners loam | (5) | 22 |
| Warsaw silt loam | (2) | 13 |
| Wauseon fine sandy loam | (3) | 22, 38 |
| Wayne silt loam | (4) | 16 |
| Wellston silt loam | (4) | 30, 41 |
| Westland silty clay loam | (2) | 13 |
| Westmoreland silty clay loam | (4) | 29, 41 |
| Wheeling silt loam | (3) | 14, 32, 35, 42 |
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