LOCATION CROSBY IN+OH

Established Series
Rev. GRS-MLW-TJE
11/2021

CROSBY SERIES

The Crosby series consists of very deep, somewhat poorly drained soils that are moderately deep to dense till. Crosby soils formed in as much as 56 cm (22 inches) of loess or other silty material and in the underlying loamy till. They are on till plains. Slope ranges from 0 to 6 percent. Mean annual precipitation is about 1016 mm (40 inches), and mean annual temperature is about 10.6 degrees C (51 degrees F).

TAXONOMIC CLASS: Fine, mixed, active, mesic Aeric Epiaqualfs

TYPICAL PEDON: Crosby silt loam, on a 1 percent slope in a cultivated field at an elevation of about 326 meters (1,070 feet) above mean sea level. (Colors are for moist soil unless otherwise stated.)

Ap--0 to 20 cm (8 inches); dark grayish brown (10YR 4/2) silt loam, light gray (10YR 7/2) dry; moderate medium granular structure; friable; many fine roots; strongly acid; abrupt smooth boundary. [15 to 25 cm (6 to 10 inches) thick]

BE--20 to 28 cm (8 to 11 inches); grayish brown (10YR 5/2) silt loam; moderate thin platy structure; friable; common fine roots; few fine distinct yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; moderately acid; clear wavy boundary. [0 to 23 cm (9 inches) thick]

Bt1--28 to 36 cm (11 to 14 inches); brown (10YR 5/3) silt loam; moderate medium subangular blocky structure; firm; few fine roots; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; many medium distinct gray (10YR 6/1) iron depletions in the matrix; strongly acid; clear smooth boundary. [0 to 25 cm (10 inches) thick]

2Bt2--36 to 56 cm (14 to 22 inches); brown (10YR 5/3) silty clay loam; moderate medium subangular blocky structure; firm; few fine roots; many distinct dark grayish

brown (10YR 4/2) clay films on faces of peds; many medium distinct yellowish brown (10YR 5/6) masses of oxidized iron in the matrix; many medium distinct gray (10YR 6/1) iron depletions in the matrix; 2 percent rock fragments; strongly acid; clear smooth boundary.

2Bt3--56 to 71 cm (22 to 28 inches); yellowish brown (10YR 5/4) clay loam; weak medium subangular blocky structure; firm; many distinct dark grayish brown (10YR 4/2) clay films on faces of peds and as linings in pores; many medium distinct yellowish brown (10YR 5/6) and prominent strong brown (7.5YR 5/8) masses of oxidized iron in the matrix; 3 percent rock fragments; neutral; clear smooth boundary. [Combined thickness of the 2Bt horizon is 20 to 61 cm (8 to 24 inches).]

2BCt--71 to 91 cm (28 to 36 inches); brown (10YR 5/3) loam; weak coarse subangular blocky structure; firm; few distinct dark grayish brown (10YR 4/2) clay films on faces of peds and as linings in pores; common fine distinct yellowish brown (10YR 5/6) and few fine faint yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; 7 percent rock fragments; slightly effervescent; slightly alkaline; clear smooth boundary. [0 to 25 cm (10 inches) thick]

2Cd--91 to 200 cm (36 to 79 inches); brown (10YR 5/3) loam; massive; very firm; common fine distinct yellowish brown (10YR 5/6) and few fine faint yellowish brown (10YR 5/4) masses of oxidized iron in the matrix; 7 percent rock fragments; strongly effervescent; slightly alkaline.

TYPE LOCATION: Henry County, Indiana; about 2 miles north of Cadiz; 1,000 feet north and 330 feet west of the southeast corner of sec. 27, T. 18 N., R. 9 E.; USGS New Castle West, Indiana topographic quadrangle; lat. 39 degrees 58 minutes 41.76 seconds N. and long. 85 degrees 28 minutes 56.43 seconds W., NAD 27; UTM Zone 16, 629593 easting and 4426452 northing, NAD 83.

RANGE IN CHARACTERISTICS:
Thickness of the loess or silty material: 0 to 56 cm (22 inches)
Depth to the base of the argillic horizon: 51 to 102 cm (20 to 40 inches)
Depth to densic contact: 51 to 102 cm (20 to 40 inches)
Depth to carbonates: 51 to 102 cm (20 to 40 inches)

Ap horizon:
Hue: 10YR
Value: 4 or 5
Chroma: 2 or 3
Texture: silt loam, loam, or fine sandy loam

Rock fragment content: 0 to 5 percent
Reaction: strongly acid to neutral

A horizon, where present:
Hue: 10YR
Value: 3 to 5
Chroma: 2 or 3
Texture: silt loam, loam, or fine sandy loam
Rock fragment content: 0 to 5 percent
Reaction: strongly acid to neutral

BE or E horizon:
Hue: 10YR
Value: 4 to 6
Chroma: 2
Texture: silt loam or loam
Rock fragment content: 0 to 5 percent
Reaction: strongly acid to neutral

Bt, Btg, 2Bt, or 2Btg horizon:
Hue: 10YR or 2.5Y
Value: 4 to 6
Chroma: 1 to 6
Texture: silty clay loam or silt loam in the upper part; silty clay, clay, silty clay loam, or clay loam in the lower part
Clay content: 35 to 45 percent
Sand content: 10 to 30 percent
Rock fragment content: 0 to 10 percent
Reaction: strongly acid to neutral

BCt, CB, 2BCt, or 2CB horizon:
Hue: 10YR
Value: 4 to 6
Chroma: 3 to 6
Texture: loam, clay loam, or less commonly fine sandy loam
Clay content: 12 to 35 percent
Sand content: 25 to 55 percent
Rock fragment content: 1 to 13 percent
Reaction: slightly alkaline or moderately alkaline; carbonates are typically present

Cd or 2Cd horizon:

Hue: 10YR
Value: 4 to 6
Chroma: 3 or 4
Texture: loam or less commonly fine sandy loam
Clay content: 10 to 25 percent
Sand content: 30 to 60 percent
Rock fragment content: 1 to 13 percent
Moist bulk density: 1.75 to 2.00 g/cc
Calcium carbonate equivalent: 20 to 50 percent
Reaction: slightly alkaline or moderately alkaline

COMPETING SERIES: These are the Hyatts, McGary, Pyrmont, and Smothers series. Hyatts soils have a paralithic contact between 102 and 152 cm (40 and 60 inches). McGary soils have less than 30 percent sand in the lower part of the series control section. Pyrmont soils are less than 51 cm (20 inches) to the base of the argillic horizon. Smothers soils have a lithic contact between 51 to 102 cm (20 and 40 inches).

GEOGRAPHIC SETTING: Crosby soils are on nearly level to gently sloping topography on till plains of Wisconsinan age. Slope ranges from 0 to 6 percent. Crosby soils formed in as much as 56 cm (22 inches) of loess or other silty material and in the underlying loamy till. Mean annual precipitation ranges from 889 to 1143 mm (35 to 45 inches). Mean annual temperature ranges from 10.0 to 12.8 degrees C (50 to 55 degrees F).

GEOGRAPHICALLY ASSOCIATED SOILS: These are the Brookston, Celina, Cyclone, Fincastle, Kokomo, Lewisburg, Losantville, Miami, Miamian, Pyrmont, Treaty, and Williamstown soils. The poorly drained Brookston, Cyclone, and Treaty soils and the very poorly drained Kokomo soils have mollic epipedons and are in depressions. The somewhat poorly drained Fincastle and Pyrmont soils are on similar landforms. Fincastle soils have a thicker layer of loess and Pyrmont soils are shallower than 51 cm (20 inches) to carbonates. The moderately well drained Celina, Lewisburg, Miami, and Williamstown soils and the well drained Losantville and Miamian soils are on higher lying landform positions.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Somewhat poorly drained. Depth to the top of a perched seasonal high water table ranges from 15 to 61 cm (0.5 to 2.0 feet) during the winter and spring in normal years. Potential for surface runoff is low or medium. Saturated hydraulic conductivity is moderately low or moderately high in and above the argillic horizon, and low or moderately low below the argillic horizon. Permeability is moderate or moderately slow in and above

the argillic horizon, and slow or very slow below the argillic horizon.

USE AND VEGETATION: Most areas are used to grow corn, soybeans, small grain, and hay. Native vegetation is deciduous forest.

DISTRIBUTION AND EXTENT: MLRAs 111A, 111B, 111C, 111D, 111E, and MLRA 114B in Indiana and Ohio. The type location is in MLRA 111A. The series is of large extent.

SOIL SURVEY REGIONAL OFFICE (SSRO) RESPONSIBLE: AMHERST, MASSACHUSETTS

SERIES ESTABLISHED: Hamilton County, Ohio, 1916.

REMARKS: Diagnostic horizons and features recognized in this pedon:
Ochric epipedon: from the surface to a depth of 28 cm (Ap, BE horizons).
Argillic horizon: from a depth of 28 to 71 cm (Bt1, 2Bt2, 2Bt3 horizons).
Densic contact: at 91 cm (top of 2Cd horizon).
Aquic conditions: redox features present in all horizons below a depth of 20 cm (8 inches).

Drained, undrained, and stony subsoil phases are recognized. The stony subsoil phase may become a new series as subset soil surveys with this phase are updated during MLRA activities.

ADDITIONAL DATA: Characterization data is available for the typical pedon, S1978IN065007, from the Kellogg Soil Survey Laboratory (KSSL), Lincoln, Nebraska. Data for pedons sampled by the Agricultural Experiment Station at Purdue University and at The Ohio State University are also available from KSSL.

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