LOCATION CROTON NJ+MD PA VA

Established Series
Rev. KK-MDJ
04/2018

CROTON SERIES

The Croton series consists of deep, poorly drained soils on uplands. They formed in medium textured materials mainly over sandstone, siltstone, or shale. Slopes are 0 to 8 percent. Mean annual precipitation ranges from 40 to 48 inches. Mean annual air temperature ranges from 50 to 55 degrees F.

TAXONOMIC CLASS: Fine-silty, mixed, active, mesic Typic Fragiaqualfs

TYPICAL PEDON: Croton silt loam - cropland. (Colors are for moist soil unless otherwise noted.)

Ap--0 to 9 inches; dark grayish brown (10YR 4/2) silt loam, light brownish gray (10YR 6/2) dry; weak fine granular structure; friable, slightly sticky, slightly plastic; many roots; 5 percent subangular gravel, moderately acid; clear smooth boundary. (7 to 10 inches thick).

Btg--9 to 18 inches; gray (N 5/) silty clay loam; moderate medium prismatic parting to weak platy structure; very firm, plastic; few fine roots; many distinct gray (10YR 5/1)iron depletions, and few, fine strong brown (7.5YR 5/6) masses of oxidized iron between peds; common clay films between peds; very strongly acid; clear smooth boundary. (6 to 15 inches thick)

Btxg--18 to 36 inches; strong brown (7.5YR 5/6) silty clay loam; very coarse prismatic parting to moderate medium platy structure; brittle, very firm; few roots distributed along faces of peds; light brownish gray (10YR 6/2) coatings on peds; many medium and coarse dark gray (N 4/) iron depletions; few faint clay films on faces of peds and in voids; 10 percent subangular gravel; strongly acid; gradual smooth boundary. (Combined B-horizon thickness is 27 to 40 inches).

Cx--36 to 48 inches; brown (7.5YR 5/4) silty clay loam; massive; very firm; 15 percent subangular gravel; strongly to moderately acid; abrupt smooth boundary. (0 to 20 inches thick)

R--48 inches; red (10R 4/6) shattered shale.

TYPE LOCATION: Hunterdon County, New Jersey; 1 mile north of Locktown, east of road on Ayre property, north of farm buildings midway to lane, about 25 feet into field from hedgerow.

RANGE IN CHARACTERISTICS: The solum ranges from 25 to 55 inches in thickness. Depth to the top of the fragipan is 15 to 25 inches, and depth to bedrock is from 3 1/2 to 5 feet. Some pedons have stones and large or very large flagstones scattered over the surface. Rock fragments range

from 0 to 10 percent in horizons above the fragipan, 0 to 20 percent in the fragipan, and 0 to 35 percent in the C horizon. The B horizons range from 50 to 70 percent silt and most of the sand is very fine.

The Ap horizon has hue of 5YR to 10YR, value of 3 to 5, and chroma of 1 to 4, and is one or two units higher in value when crushed and dry. Texture is silt loam or silty clay loam. Some pedons have E horizons that have hue of 5YR to 10YR, value of 6, and chroma of 1 or 2. Texture is similar to that of the Ap horizon. Some pedons also have A1 and A2 horizons. Where present, the color and textures are similar to the Ap horizon.

The Btg horizon has hue of 5YR to 10YR or is neutral, value of 4 to 7, and chroma of 0 to 2 and is mottled. It is silt loam or silty clay loam and contains less that 15 percent fine sand and coarser materials.

The Bx, Btx, or Btxg horizon has hue of 2.5YR to 10YR, value of 4 to 6, and chroma of 1 to 6, and is mottled. Faces of peds have dominant chromas of 2 or less. Texture is silt loam, loam, clay loam, or silty clay loam and contains from 0 to 20 percent coarse fragments.

The Cx or C horizon has hue of 10R to 5YR, value of 3 to 5, and chroma of 2 to 4. It contains coarse masses of oxidized iron with hue of 5YR to 10YR, value of 5 or 6, and chroma of 1 to 8. Texture is silt loam, loam, clay loam, or silty clay loam. Coarse fragments increase markedly as depth increases and are as much as 20 to 35 percent or more by volume near the base of the horizon. The C horizon is massive, dense, brittle and firm or very firm.

COMPETING SERIES: These are the Doylestown, Sheffield and Thorndale series in the same family. Doylestown, Sheffield and Thorndale soils all have solum thicker than 40 inches. Doylestown soils formed in silty materials, presumably eolian, deposited over a wide variety of material weathered from shale, sandstone, limestone, schist and gneiss. Sheffield soils are formed in glacial till on till plains. The regolith from these soils is principally low-lime glacial till strongly influenced by clayey shale and siltstone. Thorndale soils have bedrock deeper than 150 centimeters and formed in medium textured colluvium derived from limestone and calcareous shale. The Calvert soils have 2C horizons, which have finer textures than the overlying Bx horizon, with a depth of 40 inches.

Series in related families are the Abbottstown, Andover, Brinkerton, Calvert, Chalfont, Frenchtown, Ginat, Loysville, Nolo, Readington, Robertsville and, Shelmadine series. Abbottstown, Andover, Frenchtown, Loysville, Nolo, Readington series have fine-loamy textural control sections. Chalfont soils lack dominant chromas of 2 or less in the B horizon. Brinkerton soils formed in medium textured colluvium derived from acid gray shale and siltstone on footslopes of uplands. Ginat soils are poorly drained soils on stream terraces. Robertsville soils formed on stream terraces and concave upland areas in old, mixed alluvium or colluvium.

GEOGRAPHIC SETTING: Croton soils are on nearly level and sloping upland flats or in depressions. Slopes are 0 to 8 percent. The soils formed mostly in residuum weathered from fine-grained silty sandstones, argillites siltstones or red shales, but the upper soil horizons of some pedons formed in a thin silt layer deposited by either wind or water. The climate is humid temperate. Average annual precipitation ranges from 40 to 48 inches, average annual air temperature from 50 to 55 degrees F. and average frost-free season from 160 to 190 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the better drained Abbottstown, Readington and Reaville and the poorly to somewhat poorly drained soils of Chalfont, Abbottstown and Bowmansville soils which are on level areas or depressions, concave upland slopes and flood plains respectively.

DRAINAGE AND SATURATED HYDRAULIC CONDUCTIVITY: Drainage is poor. Runoff is negligible to low and saturated hydraulic

conductivity is moderately low in the fragipan. Excess water is perched above the fragipan in late winter and early spring but this has been used or has evaporated by summer.

USE AND VEGETATION: Wild vegetation is forest of pin oak, white oak, ash, beech and red maple. Cleared areas are used mostly as pasture, hayland or are idle. A small part is used for growing corn.

DISTRIBUTION AND EXTENT: In the Triassic shale and sandstone belt in New Jersey, Pennsylvania and Maryland. The series is extensive, more than 100,000 acres.

SOIL SURVEY REGIONAL OFFICE (SSRO) RESPONSIBLE: RALEIGH, NORTH CAROLINA

SERIES ESTABLISHED: Hunterdon County, New Jersey, 1917.

REMARKS: Croton soils were classified as Planosols in the 1938 system. Soils that have claypans rather than fragipans were formerly included in the Croton series in Virginia. Such soils are now placed in the Albano series.
Diagnostic Horizons and other features recognized in this pedon are:
a) Ochric epipedon - the zone from 0 to 9 inches (Ap)
b) Argillic horizon - the zone from 9 to 36 inches (Btg, Btxg)
c) Fragipan - the zone from 18 to 36 inches (Btx)

2008: Revisions updated the type location, geographically associated, competing series and profile description. Prior revision 5/2001 - CFE-MLM-MJL.