LOCATION OLIVENHAIN CA

Established Series
Rev. GK/LAB/LCL
6/73

OLIVENHAIN SERIES

The Olivenhain series is a member of the clayey-skeletal, kaolinitic, thermic family of Ultic Palexeralfs. Typically, Olivenhain soils have brown and reddish brown, medium acid, very cobbly loam A horizons, reddish brown and red, medium and strongly acid, very cobbly clay B2t horizons, grading to pinkish white cobbly loam C horizons.

TAXONOMIC CLASS: Clayey-skeletal, kaolinitic, thermic Ultic Palexeralfs

TYPICAL PEDON: Olivenhain very cobbly loam - native pasture. (Colors are for dry soil unless otherwise noted.)

A11--0 to 6 inches; brown (7.5YR 4/4) very cobbly loam, dark reddish brown (5YR 3/4) moist; weak medium and fine granular structure; soft, friable, nonsticky, nonplastic; common medium, many very fine and fine roots; many fine and very fine interstitial, common fine tubular pores; 25 percent cobblestones; medium acid (pH 5.7); abrupt wavy and irregular boundary. (4 to 8 inches thick)

A12--6 to 10 inches; reddish brown (5YR 4/4) very cobbly heavy loam, dark reddish brown (5YR 3/4) moist; weak and moderate medium subangular blocky structure; slightly hard, friable, slightly sticky, slightly plastic; common very fine and fine, few medium roots; common fine interstitial and tubular pores; 25 percent cobblestones; medium acid (pH 5.6); abrupt wavy and irregular boundary. (4 to 6 inches thick)

B21t--10 to 19 inches; reddish brown (5YR 4/4 dry and moist) very cobbly clay; reddish brown (2.5YR 4/4) mottles, dark reddish brown (2.5YR 3/4) moist; moderate medium subangular blocky structure; very hard, firm, sticky, plastic; few medium fine and very fine roots; few very fine and fine tubular pores; common moderately thick clay films lining pores and on faces of peds and pebbles; 40 percent cobblestones; medium acid (pH 5.6); clear wavy and irregular boundary. (6 to 11 inches thick)

B22t--19 to 29 inches; red (2.5YR 5/6) very cobbly clay, red (2.5YR 4/6) moist; yellowish red and reddish brown (5YR 5/6, 5/3) mottles, reddish brown and yellowish red (5YR 4/3, 4/6) moist; weak and moderate coarse subangular and angular blocky structure; very hard, firm, sticky, plastic; few fine and medium roots; few fine tubular pores; common thin and moderately thick clay films lining pores and on faces of peds and on pebbles and cobbles; 40 percent cobblestones; strongly acid (pH 5.4); clear wavy and irregular boundary. (7 to 12 inches thick)

B3--29 to 42 inches; pink (5YR 8/3) very cobbly clay loam, light reddish brown (5YR 6/3) moist; pinkish white (7.5YR 8/2) mottles, pinkish gray (7.5YR 6/2) moist; massive; hard, friable, slightly sticky, slightly plastic; few fine and medium roots; few thin and moderately thick clay films on pebbles; 40 percent cobblestones; strongly acid (pH 5.3); clear wavy and irregular boundary. (8 to 18 inches thick)

C1--42 to 68 inches; pinkish white (7.5YR 8/2) cobbly loam, pinkish gray (7.5YR 6/2) moist; massive; slightly hard, friable, slightly sticky, slightly plastic; few fine and medium roots; 25 percent cobblestones; strongly acid (pH 5.1).

TYPE LOCATION: San Diego County, California; about 2 miles northwest of Poway; approximately 2,450 feet east of Pomerado Road; SW1/4NE1/4 sec. 11, T.14S., R.2W.

RANGE IN CHARACTERISTICS: The mean annual soil temperature at 20 inches depth is 62 degrees to 64 degrees F. The soil between depths of 6 and 15 inches is usually moist in some part from about December 1 until late May and is continuously dry the rest of the time. The A horizon is yellowish brown, brown or reddish brown (10YR 5/4, 7.5YR 4/4, 5/4; 5YR 4/4). It is cobbly loam or cobbly sandy loam and has less than 1 percent organic matter below a depth of 4 inches. This horizon is slightly or medium acid. The B2t horizon is brown to red (7.5YR 4/4; 5YR 3/4, 4/4, 5/3, 5/4, 5/6; 2.5YR 3/4, 4/4, 5/6). This horizon is very cobbly or very gravelly clay with 35 to 60 percent rock fragments. The clay increase at the A-B horizon boundary is 15 to 25 percent (absolute). This horizon is medium or strongly acid and has 60 to 75 percent base saturation. The C horizon is cobbly loam or clay loam and is medium or strongly acid.

COMPETING SERIES: These are the Cometa, Corning, Guenoc, Keefers, Kimball, Placentia, Positas, and Redding series. All of these soils except Keefers have less than 35 percent rock fragments in the argillic horizons. Keefers soils lack an abrupt or clear A-B horizon boundary with as much as 15 to 20 percent absolute difference in clay content. Also, Cometa, Corning, Positas, and Kimball soils have a base saturation of more than 75 percent in the argillic horizon. Guenoc soils have a lithic contact 20 to 40 inches below the surface. Placentia soils have more than 15 percent exchangeable sodium in the argillic horizon. Redding soils have a duripan.

SETTING: Olivenhain soils are gently sloping to strongly sloping and are on dissected marine terraces at elevations of 100 to 600 feet. The climate is dry subhumid mesothermal. Summers are warm and dry and winters are cool and moist. Mean annual precipitation is 12 to 16 inches. Average January temperature is 50 degrees F., average July temperature is 75 degrees F., and mean annual temperature is 62 degrees F. The frost-free season is 290 to 330 days.

PRINCIPAL ASSOCIATED SOILS: These are the Antioch, Bosanko, Diablo, Linne, and Stockpen soils. Antioch and Stockpen soils have natric horizons and lack rock fragments. Bosanko and Diablo soils have dark gray, fine textured profiles with intersecting slickensides. Linne soils have strongly calcareous mollic epipedons.

DRAINAGE AND PERMEABILITY: Well-drained; slow or medium runoff; very slow permeability.

USE AND VEGETATION: Used principally for grazing. The natural vegetation is flattop buckwheat, wildoats, chamise, morning glory, filaree, soft chess, and cactus.

DISTRIBUTION AND EXTENT: Coastal plains of southern California. The soils are of moderate extent.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: Davis, California

SERIES ESTABLISHED: San Diego County (Oceanside Area), California, 1929.

REMARKS: The Olivenhain soils were formerly classified as Noncalcic Brown soils. The series concept has been narrowed to include only pedons with more than 35 percent rock fragments.

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National Cooperative Soil Survey
U.S.A.