LOCATION STRAW MT+ND SD UT

Established Series
Rev. NRS-JAL-CJH
12/2000

STRAW SERIES

The Straw series consists of very deep, moderately well and well drained soils that formed in alluvium. These soils are on floodplains, stream terraces and drainageways. Slopes are 0 to 8 percent. Mean annual precipitation is about 16 inches, and mean annual air temperature is about 43 degrees F.

TAXONOMIC CLASS: Fine-loamy, mixed, superactive, frigid Cumulic Haplustolls

TYPICAL PEDON: Straw loam, cultivated. (Colors are for dry soil unless otherwise noted)

Ap--0 to 10 inches; dark grayish brown (10YR 4/2) loam, very dark grayish brown (10YR 3/2) moist; moderate fine granular structure; slightly hard, very friable, slightly sticky and slightly plastic; many fine and few medium roots; many fine and medium pores; disseminated lime; slightly effervescent; slightly alkaline (pH 7.6); clear wavy boundary. (4 to 10 inches thick)

A2--10 to 27 inches; grayish brown (10YR 5/2) loam, very dark grayish brown (10YR 3/2) moist; weak coarse prismatic structure; slightly hard, very friable, slightly sticky and slightly plastic; common fine and very fine roots; many fine and very fine pores; disseminated lime; strongly effervescent; moderately alkaline (pH 8.0); diffuse boundary. (8 to 26 inches thick)

Bk--27 to 38 inches; grayish brown (10YR 5/2) loam, dark grayish brown (10YR 4/2) moist; weak coarse prismatic structure; hard, very friable, slightly sticky and slightly plastic; few fine and very fine roots; many fine and very fine pores; disseminated lime; few fine masses of lime; strongly effervescent; moderately alkaline (pH 8.0); gradual wavy boundary. (0 to 25 inches thick)

C1--38 to 54 inches; light brownish gray (2.5Y 6/2) silt loam, dark grayish brown (2.5Y 4/2) moist; massive; hard, very friable, slightly sticky and slightly plastic; few fine and very fine roots; common fine and very fine pores; disseminated lime; strongly effervescent; moderately alkaline (pH 8.3); clear smooth boundary. (10 to 30 inches thick)

2C2--54 to 66 inches; light brownish gray (10YR 6/2) loamy sand, dark grayish brown (10YR 4/2) moist; massive; soft, very friable, nonsticky and nonplastic; strongly effervescent; slightly alkaline (pH 7.6). (0 to 25 inches thick)

TYPE LOCATION: Cascade County, Montana; 500 feet south and 100 feet west of the NE corner of the SE 1/4 of sec. 25, T. 18 N., R. 6 E.

RANGE IN CHARACTERISTICS:

Soil temperature - 41 to 47 degrees F.

Moisture control section - between 4 and 12 inches; not dry in all parts for 60 or more consecutive days following July 1.

Mollic epipedon thickness - 16 to 40 inches.

Depth to Bk horizon - 13 to 30 inches.

The soil may be noncalcareous to a depth of 25 inches. Some pedons have Bw or Ab horizons.

A, Ap horizons - Hue: 10YR or 2.5Y

Value: 3 to 5 dry, 2 or 3 moist

Chroma: 2 or 3

Texture: loam, clay loam, silt loam, sandy clay loam, or silty clay loam

Clay content: 10 to 40 percent with less than 15 to 35 percent fine and coarser sand

Rock fragments: 0 to 10 percent pebbles

Calcium carbonate equivalent: 0 to 5 percent

Reaction: pH 6.6 to 8.4

Bk horizon - Hue: 10YR or 2.5Y

Value: 4, 5, or 6 dry; 3, 4, or 5 moist

Chroma: 2, 3, or 4

Texture: loam, silt loam, silty clay loam, clay loam

Clay content: 18 to 35 percent with less than 15 to 35 percent fine and coarser sand

Rock fragments: 0 to 10 percent pebbles

Calcium carbonate equivalent: 3 to 15 percent

Reaction: pH 6.6 to 8.4

C horizon - Hue: 10YR or 2.5Y

Value: 5 or 6 dry, 4 or 5 moist

Chroma: 2, 3 or 4

Texture: loam, silt loam, or clay loam stratified with sandy loam, or fine sandy loam

Clay content: 18 to 35 percent

Rock fragments: 0 to 10 percent pebbles

Calcium carbonate equivalent: 3 to 15 percent

Reaction: pH 7.4 to 8.4

2C horizon - Hue: 10YR or 2.5Y

Value: 5, 6, or 7 dry; 4, 5, or 6 moist

Chroma: 2, 3 or 4

Texture: stratified loam to loamy sand but mainly sandy loam or loamy sand

Clay content: 5 to 20 percent

Rock fragments: 0 to 10 percent pebbles

Calcium carbonate equivalent: 2 to 12 percent

Reaction: pH 7.4 to 8.4

COMPETING SERIES:

Brycan (UT) - has a cambic horizon.

Cordeston (WY) - no carbonates above a depth of 60 inches.

Dalmatian (CO) - redoximorphic features above 24 inches

Enbar (MT) - redoximorphic features in the particle-size control section.

Jodero (CO) - mollic epipedon more than 40 inches thick; mottled in the series control section; receive less than 14 inches of precipitation.

McGaffey (NM) - hues of 7.5YR and redder throughout the profile.

Nutrioso (AZ) - no horizon of secondary carbonate accumulation; more than 1 discontinuity above 40 inches; elevations of 6,900 feet and higher.

Pinridge (CO) - dry in all parts of the moisture control section for 60 or more days following July 1.

GEOGRAPHIC SETTING:

Landform - flood plains; drainageways; stream terraces. Moderately drained phases are usually associated with channeled map units or as components of steep dissected map units.

Elevation - 2,500 to 6,200 feet. (North Dakota has elevations down to 1,600 feet)

Slope- 0 to 8 percent.

Parent material - alluvium.

Climate - long, cold winters; moist springs; warm summers.

Mean annual precipitation - 13 to 19 inches.

Mean annual air temperature - 39 to 45 degrees F. (South Dakota has temperatures as low as 34 degrees F.).

Frost-free period - 70 to 135 days.

GEOGRAPHICALLY ASSOCIATED SOILS: These are the competing Enbar soils and the Belfield, Korchea, Rhoades, and Velva soils. Enbar, Korchea, and Velva soils occur on similar landscapes as the Straw soils. Enbar soils are somewhat poorly drained and have redoximophic features within the particle control section. Korchea soils do not have a mollic epipedon and Velva soils are coarse-loamy. Belfield and Rhoades soils occur above the Straw soils and have a fine textured natric horizon.

DRAINAGE AND PERMEABILITY: Moderately well and well drained. Moderate permeability. Runoff is negligible to medium depending on slope.

USE AND VEGETATION: Straw soils are used mainly for dryland cropland, irrigated cropland, and range. Potential native vegetation is mainly rough fescue, western wheatgrass, needleandthread, little bluestem, bluebunch wheatgrass, green needlegrass, forbs, and shrubs.

DISTRIBUTION AND EXTENT: Straw soils are of moderate extent in eastern Montana and possibly in Wyoming and North Dakota.

MLRA SOIL SURVEY REGIONAL OFFICE (MO) RESPONSIBLE: St. Paul, Minnesota

SERIES ESTABLISHED: Judith Basin County, Montana, 1960.

REMARKS: Soil interpretations records: MT0292, MT0030, MT0215, MT0251.

Diagnostic horizons and features recognized in this pedon are: mollic epipedon - the zone from the surface of the soil to a depth of 27 inches (Ap and A2 horizons); horizon of secondary carbonate accumulation - the zone from 27 to 38 inches (Bk horizon); discontinuity - from 54 to 66 inches (2C2 horizon); particle-size control section - the zone from 10 to 40 inches (A2, Bk and C1 horizons). Straw soils have a frigid temperature regime and an ustic moisture regime.

National Cooperative Soil Survey
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