

This Technical Data Sheet describes the *typical average properties* of the specified soil. It is essentially a summary of information obtained from one or more profiles of this soil that were examined and described during the Topoclimate survey or previous surveys. It has been prepared in good faith by trained staff within time and budgetary limits. However, no responsibility or liability can be taken for the accuracy of the information and interpretations. Advise should be sought from soil and landuse experts before making landuse decisions on individual farms and paddocks. The characteristics of the soil at a specific location may differ in some details from those described here. No warranties are expressed or implied unless stated.

Soil name: **Otikerama**

Overview

Otikerama soils occupy about 1000 ha on the floodplains of rivers and major streams in eastern Southland. They are formed into deep fine alluvium from tuffaceous greywacke. Otikerama soils are moderately well to imperfectly drained, with deep rooting depth, high plant available water and have heavy silt loam texture. Climate is cool temperate with regular rain throughout the year. Soils rarely dry out.

Soil classification

NZ Soil Classification (NZSC): Typic Fluvial Recent; stoneless; silty.

Previous NZ Genetic Classification: Moderately accumulating Recent soil

Classification explanation

The NZSC of Otikerama soils is consistent with previous classifications. The soils are formed in fluvial sediments and have topsoil development, but the subsoil has had limited development. Otikerama soils are typically moderately well drained, deep, and have heavy silt loam textures.

Soil phases and variants

Identified units in the Otikerama soils are:

- Otikerama undulating deep (OtU1): has no gravel within 90cm depth; occurs on slopes of 0–7°.
- Otikerama undulating deep imperfectly drained variant (OtU1vi): is imperfectly drained; has no gravel within 90cm depth; occurs on slopes of 0–7°

The soil properties described in this Technical Data Sheet are based on the most common phase, Otikerama undulating deep (OtU1). Values for other phases and variants can be taken as being similar. Where they differ significantly they are recorded with a separate versatility rating.

Associated soils

Some soils that commonly occur in association with Otikerama soils are:

- Jacobstown: poorly drained, deep to moderately deep soil with silty texture
- Makarewa: poorly drained, deep to moderately deep soil with clayey texture
- Fleming: poorly to imperfectly drained with a fragipan; deep to moderately deep soil with silty texture

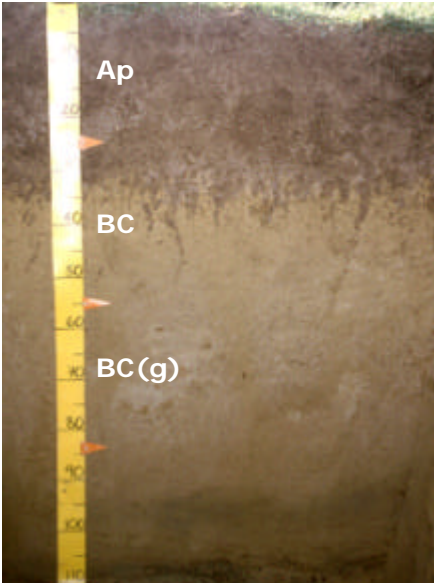
Similar soils

Some soils that have similar properties to Otikerama soils are:

- Mataura: recent soils formed in greywacke and schist alluvium of the Mataura and Oreti rivers
- Pomahaka: recent soils formed in dominantly schist alluvium of the Clutha river

Typical profile features

The following is a 'generic' or composite profile description representing the most common combination of characteristics for this soil type. The actual profiles for which descriptions and data are available are listed at the end of this Technical Data Sheet.

Otikerama profile	Horizon	Depth (cm)	Description
	Ap	0–25	Greyish yellow brown silt loam; slightly firm soil strength; moderately developed fine polyhedral structure; abundant roots.
	BC	25–55	Yellowish brown silt loam; slightly firm soil strength; weakly developed very coarse blocky structure; few roots.
	BC(g)	55–90	Yellowish brown silt loam; many light grey mottles; slightly firm soil strength; massive structure; no roots.

Key profile features

Otikerama topsoils are 25–35cm deep with a moderately developed structure. Subsoils are typically structureless, but may have a weakly developed structure. Soils can have gley features with mottles below 60cm depth. In the imperfectly drained variant, gley mottles occur throughout the profile.

Typical physical properties

Note: values in *Italics* are estimates

Horizon	Depth (cm)	Bulk density	Permeability	Texture	Gravel content
Ap	0–25	<i>Moderate</i>	<i>Moderate</i>	Silt loam	Gravel free
BC	25–55	<i>Moderate</i>	<i>Moderate</i>	Silt loam	Gravel free
BC(g)	55–90+	<i>Moderate</i>	<i>Moderate</i>	Silt loam	Gravel free

Profile drainage: Moderately well
Plant readily available water: *High*
Potential rooting depth: Deep
Rooting restriction: no major restriction

Key physical properties

Otikerama soils have a deep rooting depth with high plant available moisture. The soils have moderate to imperfect drainage, with moderately permeable subsoils. Soil texture is heavy silt loam in all horizons. Topsoil clay content is 25–30%. Soils are stoneless.

Typical chemical properties

Horizon	Depth (cm)	pH	P retention	CEC	BS	Ca	Mg	K	Na
Ap	0–25	—	—	Moderate	High	—	—	—	—
BC	25–55	—	—	Moderate	High	—	—	—	—
BC(g)	55–90+	—	—	Moderate	High	—	—	—	—

Key chemical properties

Only limited chemical data is available for this soil. Values are likely to be similar to Mataura and Makarewa soils that occur on adjacent floodplain surfaces. Measured cation exchange levels are moderate with base saturation high. Soil reserve phosphorus levels are likely to be low. Micronutrient levels can be expected to be adequate.

Vulnerability to environmental degradation

Note: the vulnerability ratings given in the table below are generalised and should not be taken as absolutes for this soil type in all situations. The actual risk depends on the environmental and management conditions prevailing at a particular place and time. Specialist advice should be sought before making management decisions that may have environmental impacts. Where vulnerability ratings of Moderate to Very severe are indicated, advice may be sought from Environment Southland or a farm management consultant.

Vulnerability factor	Rating	Vulnerability compared to other Southland soils
Structural compaction	severe	These soils have a very severe vulnerability to structural degradation by long-term cultivation, or compaction by heavy stocking and vehicles. This rating reflects the likely low organic matter, P-retention and moderate clay content.
Nutrient leaching	moderate	These soils have a moderate vulnerability to leaching to groundwater. This rating reflects the moderate permeability and drainage, but is off-set by high water-holding capacity.
Topsoil erodibility by water	moderate	Due to the likely low organic matter and moderate clay content, topsoil erodibility in these soils is moderate. Erodibility is highly dependent on management, particularly when there is no vegetation cover.
Organic matter loss	slight	Vulnerability to long-term decline in soil organic matter levels is partly dependent on soil properties and highly dependent on management practices (e.g., crop residue management and cultivation practices).
Waterlogging	slight	These soils have a slight vulnerability to waterlogging during wet periods. This rating reflects the moderately well drained nature of the soil and moderate permeability.

General landuse versatility ratings for Otikerama soils

Note: The versatility ratings in the table below are indicative of the major limitations for semi-intensive to intensive landuse. These ratings differ from those used in the past in that sustainability factors are incorporated in the classification.

Refer to the Topoclimate district soil map or property soil map to determine which of the soil symbols listed below are applicable, then check the versatility ratings for that symbol in the appropriate table.

OtU1 (Otikerama undulating deep)

OtU1vi (Otikerama undulating deep imperfectly drained variant)

Versatility evaluation for soil OtU1, OtU1vi		
Landuse	Versatility rating	Main limitation
Non-arable horticulture	Limited	Potential flood risk
Arable	Moderate	Vulnerability of topsoil to structural degradation by cultivation and compaction; potential flood risk.
Intensive pasture	Moderate	Vulnerability of topsoil to structural degradation by cultivation and compaction; vulnerability to leaching to groundwater.
Forestry	Limited	Potential flood risk.

Management practices that may improve soil versatility

- Careful management after heavy rain and wet periods will reduce the impact of short-term waterlogging. Intensive stocking, cultivation and heavy vehicular traffic use should be minimised during these periods.
- Installation and maintenance of subsurface mole and tile drains will reduce the risk of short-term waterlogging.
- If compaction occurs, aeration at the correct moisture condition and depth can be of benefit.

Soil profiles available for Otikerama soils

Soil symbol	Profile ID	Topoclimate map sheet	Profile description available	Physical data available	Chemical data available	Profile photo available
OtU1	M1305	1	✓	✓	✓?	
OTU1	GG/GW 112	35	✓			

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