

Magnesium content of the A, B and C horizons

This is a secondary nutrient that is vital for all plants, as it is part of the chemical formulas of a number of essential compounds, including chlorophyll. It is present in small quantities in most soils, playing a role in plants' nutrition and life cycles. Excess magnesium contributes to clay dispersal (as Ca^{++} is replaced by Mg^{++}), which may entail reduced permeability and water-holding capacity and make the soil more difficult to work (Magny and Baur 1962). Hypomagnisaemia in cattle and sheep is the result of unbalanced fertilization, with too much nitrogen and potassium being applied and not enough magnesium (Bockman et al. 1990). Five magnesium content classes are used (Table 1).

Table 1. Definition of Mg content classes

Class	Mg (meq/100g)	Mg (kg/ha)
Very low	<0.38	<100
Low	0.38 - 1.50	100 - 400
Moderate	1.50 - 2.60	400 - 700
High	2.60 - 3.72	700 - 1000
Very high	≥ 3.72	≥ 1000

Martin and Nolin 1991

Magnesium content distribution in the A horizon reflects surface texture distribution fairly closely. Soils with very low and low (of the area) magnesium content, covering 12.4% and 36.4% and of the area respectively, are generally coarse- and medium-coarse-textured (e.g. Aston and Sainte-Rose series). Soils with moderate (21.2% of area) (e.g. Du Jour series) to high (6.2% of area) (e.g. Boucherville series) magnesium content are medium-fine-textured,

while soils with very high magnesium content (23.8% of area) are fine-textured (e.g. Providence series). As a rule, magnesium enrichment is observable in the underlying horizons. In sandy soils, we find the same phenomenon with magnesium as we saw in the case of calcium, namely leaching in the B horizon and enrichment in the C horizon.