

Available water (50 cm soil depth)

A soil's available water is that part of soil moisture of which a plant can make effective use by means of its roots. The available water is the amount of water remaining in the soil between the field capacity (maximum amount of water held in the soil after drying) and the wilting coefficient (Hénin et al. 1969). This is an important factor that may restrict a soil's productivity.

Our estimates of the available water of various soils are based mainly on interpretation of the chart published by Côté et al. (1982), as validated from analytical data from the southeastern part of the Montreal plain. In order to take the inherent variability of every soil into account, minimum and maximum values for available water were estimated, and then the midpoint of the distribution was used as a mean value. The descriptors selected were texture, organic matter content, bulk density, coarse fragment content, and thickness and nature of surface parent material (25 - 75 cm). The lowest value for available water resulted from the coarsest texture, lowest organic matter content, highest coarse fragment content and lowest bulk density (Nolin 1988).

The map shows available water for a 50-cm soil depth, i.e. water usable by shallow-rooted plants such as annual crops (e.g. corn) and grasses. The five available water classes shown on the maps are defined in the table below.

Table 1. Definition of available water classes for two depths of soil

Class	cm water/50 cm soil	Class	cm water/100 cm soil
Very low	<3	Very low	<5
Low	3 - 6	Low	5 - 7.5
Moderate	6 - 9	Moderately low	7.5 - 10
High	9 - 12	Moderate	10 - 15
Very high	≥12	High	15 - 20
		Very high	≥20

Nolin 1988