

Expression of wetness in the names of agricultural mineral soils of Finland

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Wetness is an essential characteristic of agricultural land in Finland, 86% of the fields being artificially drained. According to the WRB system, most clay soils of Finland have however been traditionally classified as Vertic Cambisols, and the medium-textured soils as Eutric or Dystric Cambisols. This is also how the areas dominated by agricultural land in Finland are described in the Soil Geographical Database of Europe (SGDE) at scale 1:1000 000. None of these names expresses the inherent wetness. According to US Soil Taxonomy, the same soils have been classified as Aquepts or Aquic subgroups of Inceptisols, indicating wetness at a high level of classification. In Norway, the most common agricultural soils are Stagnosols and Planosols, expressing the stagnic colour pattern and wetness at the reference group level, while Luvisols and Albeluvisols commonly have gleyic and stagnic qualifiers. The hypothesis that the same soils occur in both countries was tested in Finland in 2012 during a soil excursion. The major agricultural soils of Southern Finland were investigated and soil classifications among the two countries was harmonized. Almost all investigated soils in Finland had stagnic colour patterns. Most clay soils were classified as Vertic Luvic Stagnosols, in the lowest positions also as Gleysols. Stagnic colour pattern occurred also in soils with sandy top soils and clayey subsoils, these being classified as Luvic Planosols. Fine silt soils were very poorly developed, falling into Stagnig Regosols instead of their earlier classification as Eutric or Dystric Cambisols. After these revisions the Soil Database of Finland at scale 1:250,000 expresses much better the essential soil characteristics of the country. These soil names can now be used for identification of areas where agriculture is constrained by wetness. Moreover, the soil names, presented in more detail in the presentation, indicate the important soil forming processes in soils of Finland.