Modelling SoilMAT-ters

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The Soil Management Assessment Tool (SoilMAT) is being developed as part of the soils work in the Scottish Government's Rural and Environment Science and Analytical Services Division (RESAS) 2016-21 programme.

SoilMAT is a simple summary process-based model, which has been initially being developed in MS Excel. The model has modules to predict soil texture, carbon storage and water supply; to describe the impact of changes in temperature and rainfall on crop production; and to determine fertiliser use, nutrient limitation, nitrate leaching and greenhouse gas emissions in Scottish soils. Inputs to the model include location, soil type and characteristics, land use, rainfall and air temperature, "Land Capability for Agriculture Assessment" class, crop type, typical cereal yield, and fertiliser type and use.

The summary model will be packaged using R and/or Python and made available via Scotland's soils website (SEWeb platform) in the near future. It is expected that it will be of use to policy makers and planners amongst others.

The aim of this presentation is to introduce the tool.