

Is there a role for soil testing by farmers in soil health management?

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Soil health is an essential requirement of a well-functioning agroecosystem. Our premise is that with good quality, local soil information, including identification of soil types and their soil health status (here using available soil testing as a proxy) farmers can determine the best course of action to either improve or maintain soil health as well as identify soil health threats such as soil acidity, soil carbon decline, nutrient imbalances and salinity. We examined farmers' participation in gathering soil information at the farm and paddock scale over the last two decades in Australia, by reviewing national-level reporting of soil testing by farmers. However, the level of farmer participation in soil testing has remained stable in the last two decades, with only 25% of landholders participating each year. Data from national-level reporting has a number of limitations in understanding farmers' soil testing practice, and in particular, it was unable to indicate the nature of soil testing, in terms of frequency and intensity, and more importantly why farmers undertook the practice, and what they did with the soil information. The rhetoric is heavy on the use of soil testing as a decision tool, and that it guides best practice, but given that only a quarter of farmers are soil testing, infrequently and in low densities, then the level of information on soil health is poor. The main use of soil testing that is commonly stated is for determining fertiliser requirements, yet data seem to indicate routine practice is just as likely as soil testing when deciding on fertiliser application levels. In contrast to the information poor state regarding soil health, there is strong farmer interest in procuring soil health benefits, through changes in farm practice such as conservation tillage, even if farmers are unable to demonstrate these soil health benefits through soil testing.