

Assessing Soil Health Sustainability Under Same Long Term Cropping System

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Sustainability of any cropping system over the years depends on sustainability of soil health (a component of environment) along with other factors which in turn controls the food safety to the human beings of a particular region as cropping systems are mostly region / zone specific. The present study is an attempt to examine the change in soil nutrients and soil characters, influencing soil nutrient availability to plants over the years under Rice – Wheat cropping system using information from experiment conducted over seventeen years in the same field under different nutrient (inorganic, organic and or different combination of both) management. Altogether twelve treatments were tested for seventeen consecutive years and each year soil characteristics were measured. AR, MA, ARIMA etc. modeling technique was employed to foresee the future soil characteristics and tried to understand the treatment(s) which are more sustainable in maintaining the soil health and ultimately steady crop production. Different forms of autoregressive models were found to be good enough in explaining the time series under different treatments. Out of twelve treatments, treatments with combination of both inorganic and organic nutrients were found to be superior in sustaining soil health and the crop potentiality as well.