THE USE OF DAILY RAINFALL IN ANALYSING REPEATED MEASUREMENTS DATA IN PERENNIAL CROPS

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Repeated measurements are very common in perennial crops where measurements are taken over the years. Various methods are used to analyze such data but, in general little consideration is given to the effect of rainfall variation during the entire duration of the experiment. Consequently, inferences gathered from such an analysis is often incomplete.

An alternative method is therefore illustrated to show how better use can be made of daily rainfall variation into the analysis of data from repeated measurements data in perennial crops. The parameters such as the start of rain, the end of rain, the length of rain and the risk of dry spells are used to incorporate rainfall data into repeated measurement data. This method gives more precise information on the treatment effect of the experiment. Further this method has the advantage to overcome the dependence structure of the repeated measurements over the years. The proposed method is illustrated by real examples.