

## Development of water management system to bg 358 rice variety using a computer model

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Sri Lanka is a tropical country with two major cultivation seasons, called *Yala* and *Maha*. Rice is the major staple food grows under different climate and environmental conditions. Crop models have been found to be very good methods for testing different decision making process and management option in crop cultivation. Agricultural Production Systems Simulator (APSIM) is a best crop model used in present day in several cropping systems. Study was done in Kadaweramulla area of the Kurunegala district and APSIM crop model was used to evaluate paddy yield under different water management methods (irrigation only, rainfall only and irrigation+rainfall conditions) to identify water stress condition for paddy cultivation. The crop model used for simulate rice yield under number of dates irrigation supply for each farmer and graphical show yield variation and simulated water content in the root zone under different water management methods. According to the results of different water management options, the simulated yield was higher under the irrigation+rainfall option compared to other two options because of less water stress conditions. According to simulate data after increasing number of irrigation days supply for paddy field, soil moisture less fields paddy yields continuously increase and after some point yield try to decrease. Soil moisture condition high paddy fields can see opposite results. Those two phenomena mainly happened due to water stress condition in the paddy fields. Soil water content in the root zone is varied in whole life cycle of the rice plant according to the simulation results.

**Key words:** APSIM, water stress, water management, irrigation days, soil moisture

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