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Impact of changing rainfall pattern on rain fed paddy cultivation (Case study at Kamburupitiya)

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Paddy is the staple food crop in Sri Lanka which highly sensitive to the rainfall changes. Large number of rain fed paddy farming peasants are in Kamburupitiya.(1/3) According to latest research findings there is a incompatibility between traditionally adjusted Yala and Maha seasons and changed amount of rainfall and rainfall distribution which leads to substantial yield reduction. This research attempted to find out the most appropriate cropping pattern, which optimally compatible with current rainfall pattern and specific physiological phases of the rice plant using meteorological data. Effects of rainfall change on input application and finding yield losses related to incompatibility of climatic changes and farm practices are other two interested areas of the research. Data derived from pre-tested structured questionnaire were utilized to achieve these interests. This data was obtained from selected 5 Gramasewa divisions in Kaburupitiya DS division where rain-fed paddy farming dominates. Fourty farmers were randomly selected from 8 from each gramasewa division. Thus, some informal discussions were carried out. Different descriptive and inferential statistical methods and Microsoft Excel based Markov chain analysis techniques were used for data analysis.

Seed paddy broad casting and harvesting have been significantly affected by rainfall changes than other cultural practices. Farmers have not shown successful adoption against climatic changes. Farmers have to incur 491.41 Rupees surplus cost per one acre of paddy cultivation due to unexpected climatic variations. It increases unit production cost from Rs 5.69 to 5.90. Rainfall distribution in Kamburupitiya fixed with bi-modal pattern. All twelve month of the year can be considered as wet month for upland crops, but this level of rainfall is not sufficient at critical periods of rice cultivation. It is most appropriate to establish their paddy in between April 30 and May 6 by pure rain fed farmers using short duration paddy varieties for yala season. In Maha season rain fed farmers to be established crop with long duration paddy varieties within second week of October.

Overall distribution of wet spell with in both season of Yala and Maha are match with initial growth stages of rice plant. However after flowering stage some dry condition occurs, may negatively affect on the crop yield in the both season.

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