

021**Drought analysis in relation to crop production: Anuradhapura district**

M K N Kumari and C M Navaratne

Department of Agricultural Engineering, University of Ruhuna, Sri Lanka.

In order to identify the risk on drought for crop production in Anuradhapura district, daily rainfall data over 35 years in seven rain gauge stations were analyzed. The selected stations were Anuradhapura, Mahailuppallama, Nochchiyagama, Kalawewa, Elayapaththuwa, Padaviya and Vavuniya.

Among all the stations, both highest mean annual rainfall of 1488.5 mm and annual dependable rainfall of 1276.6 mm were recorded in Padaviya. The minimum rainfall values of 1087.6 mm and 903.1 mm were noted in Nochchiyagama respectively. 31% and 69% of total annual rainfall was received in *yala* and *maha* seasons respectively. Number of dry weeks in the district was assessed by Hargreaves' Moisture Availability Index (MAI) method and 10 mm and 20 mm weekly rainfall at 75% probability level for upland and wetland crops respectively.

According to MAI, average number of dry weeks in the district was 25 (out of 26) for *yala* season and 19 (out of 26) for *maha* season. The maximum dry period of 100% was recorded in Nochchiyagama, Elyapaththuwa and Padaviya in *yala* season. It was 85% for *maha* season in Nochchiyagama and Elayapaththuwa. The highest dry run of 42 weeks was recorded in Nochchiyagama, Elayapaththuwa and Padaviya throughout the year. Based on the monthly dependable rainfall 74.5% of total rainfall is concentrated into last 3 months in the region.

Based on 20 mm weekly rainfall at 75% probability, the whole district was completely dry during *yala* season. Total 100% dryness was observed in Elayapaththuwa based on 10 mm and 20 mm weekly rainfall at 75% probability for *maha* season. Average 96% of dryness was recorded in the district under 10 mm weekly rainfall at 75% probability in *yala* season.

The analysis depicts the risk on drought in the area for crop production. It indicates the irrigation need for the crop production in the district both in *yala* and *maha* seasons.

022**Role of plants in traditional livestock production**A N F Perera¹, A N K Perera² and E R K Perera³¹Uva Welassa University, Badulla, Sri Lanka²University of Wayamba, Sri Lanka³University of Peradeniya, Sri Lanka

Plants have been used from ancient time to sustain local livestock production in various aspects. Historically, traditional veterinary practices were mainly based on the "*Hela Vedakama*" in which plants played a vital role. Phyto-based traditional veterinary practices dated back to beyond the period of King Ravana. This "phyto-based" system sustained the local livestock production over a period of many centuries to date and same remedies are presently used extensively and effectively in rural livestock production systems. According to the chronicles and traditional knowledge based information, the cattle can suffer from 16400 and the buffalo from 4448 different ailments. In traditional veterinary practices the most important group diseases are known as "*Veppu*" and "*Adappan*". In this category there are more than 4000 different diseases. Majority of these diseases are cured with phyto-based medicinal system. When obtaining plant parts for treatment selection criteria for the plant is very important. Usually "*pancha pangu*" is used in preparations. Collection of plant parts are done by auspicious time and by specific persons. According to a extensive study conducted during the last three years, it was revealed, 74% of the surveyed livestock farmers practice "phyto-based" treatments in livestock medicine. Many plant species are used for different cattle ailments. 38 plant species are used to treat wounds, ulcers, cuts and boils. Some of these medicinal recipes are even recommended