

Development of crop calendar for GIFT strain (*Oreochromis niloticus*) in flood-prone Nilwala River, Matara District of Sri Lanka

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Fish crop calendar is a tool that describes timely information on fish breeding, stocking, rearing, feeding and harvesting periods of fish culture. This study was conducted in five flood affected Divisional Secretariat Divisions of Matara District, i.e. Matara, Thihagoda, Malimbada, Athuraliya and Kamburupitiya to develop a crop calendar for GIFT strain by investigating fish culture activities and changes of climatic conditions. The rainfall and hydrological data associated with Nilwala River were collected from January 2010 to December 2019 from Panadugama station that comes under the Department of Irrigation, Matara. The participatory process and structured questionnaire were used to identify important climatic change events such as heavy rain, flood and drought in the flood prone land of Nilwala River. Since there is no proper irrigation system for fish or rice culture, farmers have to solely depend on rainwater. Information on suitable fish species and the best date to stock fish seeds can be decided through local experience of expertise. According to the crop calendar, the rainy season falls in the months of April, May, June, October and November. Dry season falls in the months of February and July and flood season comes in May, October, November and December. Fish farm activities such as pond preparation, repairing pond dykes, water intake and sluice structures, draining and drying the ponds were conducted in the months of January and February for the first crop and July and August for the second crop. Water filling and fertilization were performed in the months of March and April for the first crop and repeated in the months of September and October for the second crop. Stocking of fish seeds for the first and second crops are formed in the months of March and April and later in September and October. The harvesting time spreads over in the months of July and August for the first crop and January and February in the following year for the second crop. The culture period of GIFT strain prevails 4-5 months and their seeds can be purchased from fish breeding centers throughout the year for the same price. In conclusion, crop calendar supports fish farmers and extensionists in taking correct decisions on fish culture activities in real-time. It also helps to plan all fish farm activities and the cost of production. All the government departments, research organizations and NGOs should help fish farmers of flood-prone land of the Nilwala River to improve and apply knowledge for the challenges and adaptable measures.

Keywords: GIFT tilapia, flood-prone, fish culture, Nilwala River basin, Sri Lanka

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