

Tirasak Thongsiri 2011: Planning of Irrigation System Management in 50th Year Anniversary of HRH Crown Prince Mahavashiralongkorn Agricultural Park, Kasetsart University Chalermphrakiat Sakon Nakhon Province Campus. Master of Engineering (Irrigation Engineering), Major Field: Irrigation Engineering, Department of Irrigation Engineering. Thesis Advisor: Associate Professor Jesda Kaewkulaya, Ph.D. 115 pages.

The main purpose of this study was to develop a computer program , in order to calculate both annual water allocation plan and also weekly water operation plan of the irrigation systems in study area which was in the 50th year Anniversary of HRH Crown Prince Mahavashiralongkorn Agricultural Park, Kasetsart University Chalermphrakiat Sakon Nakhon Province Campus . The irrigation schemes in the area were pressurized. There were many complicated factors and components in decision making for system operation ; such as quantity and sources of the water , weather , crop , soil types and modern water application systems which were sprinkler , micro-irrigation as well as gated pipe for surface irrigation . The computer program was developed by using VBA in MS. Excel to establish water allocation plan. The program composed of 2 portions i.e. “Yearly plan program” and “Weekly plan program.” The outputs of the programs were very well performed. They could be having adjusted and flexible to cope with cropping patterns and the maintenance period not water supply from the Lum Nam Oon Irrigation Project. The weekly water operation schedules were also adjustable. Genetic Algorithm (GAs) could be used to inspect all conditions including rainfall occurrence

Key Words: Irrigation System Management, Computer Program, Pressurized Irrigation System

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