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DUJDAO KOMONWEERAKATE : DEVELOPMENT OF PARENTAL DATABASE AND CLONAL SELECTION SYSTEM FOR SUGARCANE IMPROVEMENT PROGRAM. THESIS ADVISORS : PANYA KAIMUK, M.D., BOARD OF ORTHOPEDIC SURGERY, PRASERT CHATWACHIRAWONG, M.S. 91 P. ISBN 974-04-2074-5

For sugarcane improvement, cane characteristics data is important for the selection of a sugarcane parent, as well as the selection method being important for the selection of progeny clones to yield the desired cane characteristics. Although index selection is one selection method that can be used to select the progeny clones with several traits simultaneously, the calculation procedure is very complicated. Furthermore, sugarcane data used for sugarcane improvement works is scattered and cannot be used immediately. Therefore, information system technology was applied to organize sugarcane data and facilitate the sugarcane selection procedures. This research is to study and develop a prototype for a program to be used in sugarcane improvement.

Application of the Sugarcane Improvement Program, or SIP, developed in this study consists of two parts: 1) Sugarcane database and 2) Index selection. The sugarcane database, which is the relational database, is used as the source of cane characteristics information for parent selection. The index selection program is used to calculate the index for sugarcane clone selection. In this study, Microsoft Access was used to create the relational database, while Microsoft Visual Basic 6.0 was used to create the user interface. This program is operated on Microsoft Windows 98.

SIP can be used to organize the sugarcane data into an information system that can be used easily and facilitate the sugarcane improvement works. It also saves time, labor and facilitates the parent selection procedure. Nevertheless, SIP has limitations, such as the existing observed data in other formats like an Excel file, cannot be used in this program, but the program does not provide the variables for index coefficient calculation, etc.