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PATTAYA PANSUWAN: DECISION SUPPORT SYSTEM FOR IDENTIFICATION OF ECONOMICAL THAI TIMBER. THESIS ADVISORS: NATHSUDA PUMIJUMNONG, Ph.D., SUTTINANT NANTACHIT, M.S., TEERA VEENIN, M.S. 180 p. ISBN 974-663-072-5

The objectives of this study are to develop a system of identification of Thai timber as a tool for preliminary identification of Thai timber using gross structure, to present an implementation of a knowledgeable introduction to vernacular species and to identify them on gross structural bases. The decision support system was made by Microsoft Access 97 which developed a database and a connection to users. It was divided into two parts. The first section included wood identification, introduction and data query. Users could utilize two section. The first is for the user to identify wood species and retrieval data. The second is system maintenance which can add and update data concerning species and gross structure for the database per se.

Twenty-seven gross structures were implemented as criterion for classification of concerned designated structures. These structures consisted of : crystal in wood ray, woody grain, specific gravity, annual growth, luster, odor, taste, parenchyma arrangement, longitudinal parenchyma, trace of parenchyma, arrangement of pore, pore distribution, pore number, tyloses, pore deposit, number of ray, type of ray, ripple mark, radial gum canal, vertical gum canal, strength and type of wood. All of these properties were stored in the database. The wood identifier is capable of identifying any wood by perceiving visible gross structures and makes a comparison with those structures in the database. Finally, the finding is sequentially sorted in the order of most descending gross structures.

Three user groups tested the program and found that the system was knowledgeable and comprehensive in identifying wood by implementation of rudiment gross structures. In addition it is somewhat user friendly to modify and update the structural features of any particular species. This program renders reliable evidence to substantiate a correct decision on identifying the species of wood at some certain level, provided data for species are replenished.