ABSTRACT

This A.mangium Expert System is a pilot project that aims at accumulating, validating and using the knowledge base to help workers decide on how to implement the silviculture technique to A.mangium plantation. The experiments and survey were done solely at Lad Krating Plantation, Chachoengsao, of Bangna Plywood Company.

The three steps in developing the system is acquiring knowledge, reorganizing it into decision tables, and translating the decision tables into the production rules. The reasoning process is carried out by the VP-Expert with its backward chaining.

The system is divided into three modules. The first is to determine soil chemical property and stand health relationship. This is the most important factor in managing growth productivity. The second is to assist techinicians and workers in their growth management. The third is to assist them in A.mangium growth diagnosis.

This pilot project is implemented by using VP-Expert Shell. It has been opted for its ease of use and its graphical support. What is needed is to create the knowledge base, which in turn may be implemented also on other platforms, like that of Windows. VP-Expert is also good in the sense that it does not require much of CPU resource. The rules the Shell requires are easily coded as long as the decision tables are made. Thus, it is very flexible and easy to maintain at this stage of development. It also provides the inference engine which works to the target without any necessity of further coding.

This project needs further study and research both on the field data and on the silviculture technique, so to make the system more reliable and accurate. At this stage of development, growth factors and growth data are already identified, and basic actions to be taken are also identified. It remains to test these growth factors and growth data to see whether they really reflect the reality of A.mangium plantation. Further researches will refine the system and make it applicable at a larger scale.