

EXPERT SYSTEM FOR INTENSIVE EARLY STOCKING

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Expert systems are computer programs which have been shown to be effective decision makers for problems which require heuristic knowledge, a set of rules derived through experience. Thus, an expert system bears many similarities to a human expert. This expert knowledge is needed to make decisions concerning the application of intensive early stocking on Oklahoma pastures. A prototypical expert system was developed to recommend whether to employ intensive early stocking, and if so, how. A range use specialist was interviewed by a knowledge engineer who programmed the expert system in LISP using Texas Instruments Personal Consultant software. The knowledge base contains rules reflecting the expert's knowledge. The knowledge needed to make the necessary decisions were arranged in three parts. First, estimation of the optimal (not necessarily current) stocking rate is made. Then this is used along with other data to decide whether intensive early stocking is indicated. If so, another part of the program and additional information is employed to determine how to proceed with intensive early stocking. The program is interactive, querying the user to input information; allowance is made for uncertain responses. When enough information is collected, the program makes a decision and reports its recommendation. To make this a better tool, more information for each pasture type is needed. Also, additional rules reflecting effects of economic conditions are needed.

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