

Cotton Harvest-Defoliation Scheduling

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Four years of harvest-defoliation experiments conducted by Cannon under Project 550 at the Cotton Research Center were analyzed. The variety used in the experiments was DPSL.

The purpose of the analysis was to evaluate the effect of time of harvest and the effect of the use of defoliant on gross returns from the harvested cotton.

The analysis required the use of a common time datum developed from the crop maturity rate. The time datum selected was 50 percent bolls open. This was used to define the beginning of the harvest stage and serve as the base point for all subsequent events of harvest.

From the data, sets of curves for both green picked and defoliated cotton were developed for use in predicting the time-based performance of the crop and its interaction with the harvesting machine. Grade-index was also found to have a time-based reduction, as was total harvested cotton.

A Measure of Value (MoV) of the harvested cotton was developed from the sum of the products of grade-index times yield for the two pickings. Measure of Value reflects the gross value of the harvested cotton, resulting from the time-based reduction of both grade index and harvested cotton with the advance of the season.

The MoV curves for defoliated and for green pick are useful for defining a harvest schedule, selecting machine capacity for optimizing return, and for evaluating the cost of defoliation and other management practices during harvest for their probable contribution to net return.

Comparison of the curves for defoliated and green pick shows that the net gain from defoliation occurs with early defoliation about 5 to 28 days after 50 percent bolls-open. By 40 days after 50 percent bolls-open less total harvested cotton will be taken with defoliation than with green picking because the losses are greater.

During the 1965 crop year, data for the crop maturity rate were taken. These data confirmed the maturity rate used in the analysis and showed that when boll weights as well as boll counts are taken, an accurate prediction of total yield is possible when 25 percent or more of bolls are open.

Explanation of the analysis and the examples of its use are available as mimeo copies of papers presented on "Cotton Harvest-Defoliation Scheduling."

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