FIELD TO GIN-SEED COTTON HAULING COST ESTIMATOR

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Abstract

Reduction in cotton acreage in the Mississippi Delta region over the past 10 years has led to a sharp reduction in the number of cotton gins in the area. As a result, some ginners and producers are forced to transport seed cotton over much longer distances. This paper describes the development of a decision support aid to calculate the cost of transporting seed cotton. Simulated results indicate that with round modules and the hauling capacity of drop-bed or lowboy trailers, seed cotton transportation costs are dramatically reduced relative to conventional modules transported with module trucks at ranges of 50 to 100 miles.

Introduction

Reduction in cotton acreage in the Mississippi Delta region over the past 10 years has led to a sharp reduction in the number of cotton gins in the area. As can be seen in Figure 1, while the acreage of cotton declined from 2,520,000 acres in 2004 to 930,000 acres in 2014 the range of the production area remained relatively stable. As a result, some producers are forced to transport seed cotton over much longer distances.

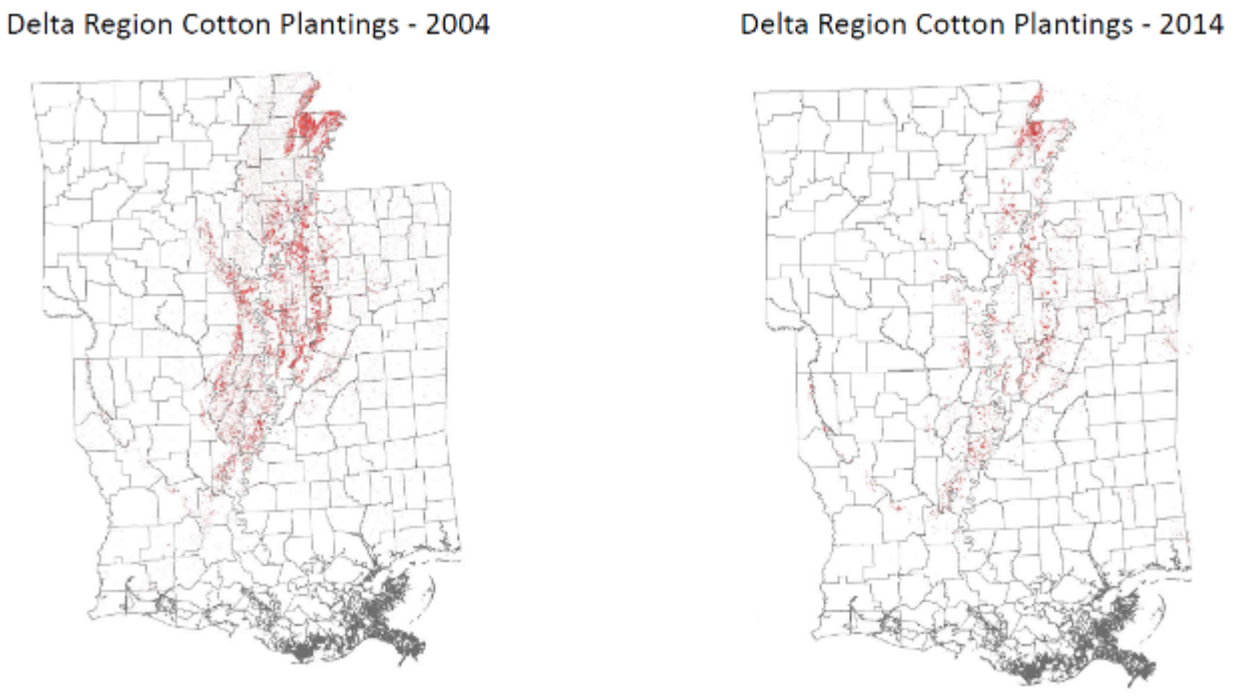

Figure 1. Delta Region Cotton Plantings. Source: USDA-NASS.

Materials and Methods

To assist ginners and producers in making transportation decisions, a decision support aid was developed using Microsoft Excel. A screen shot of the decision aid is shown below in Figure 2.

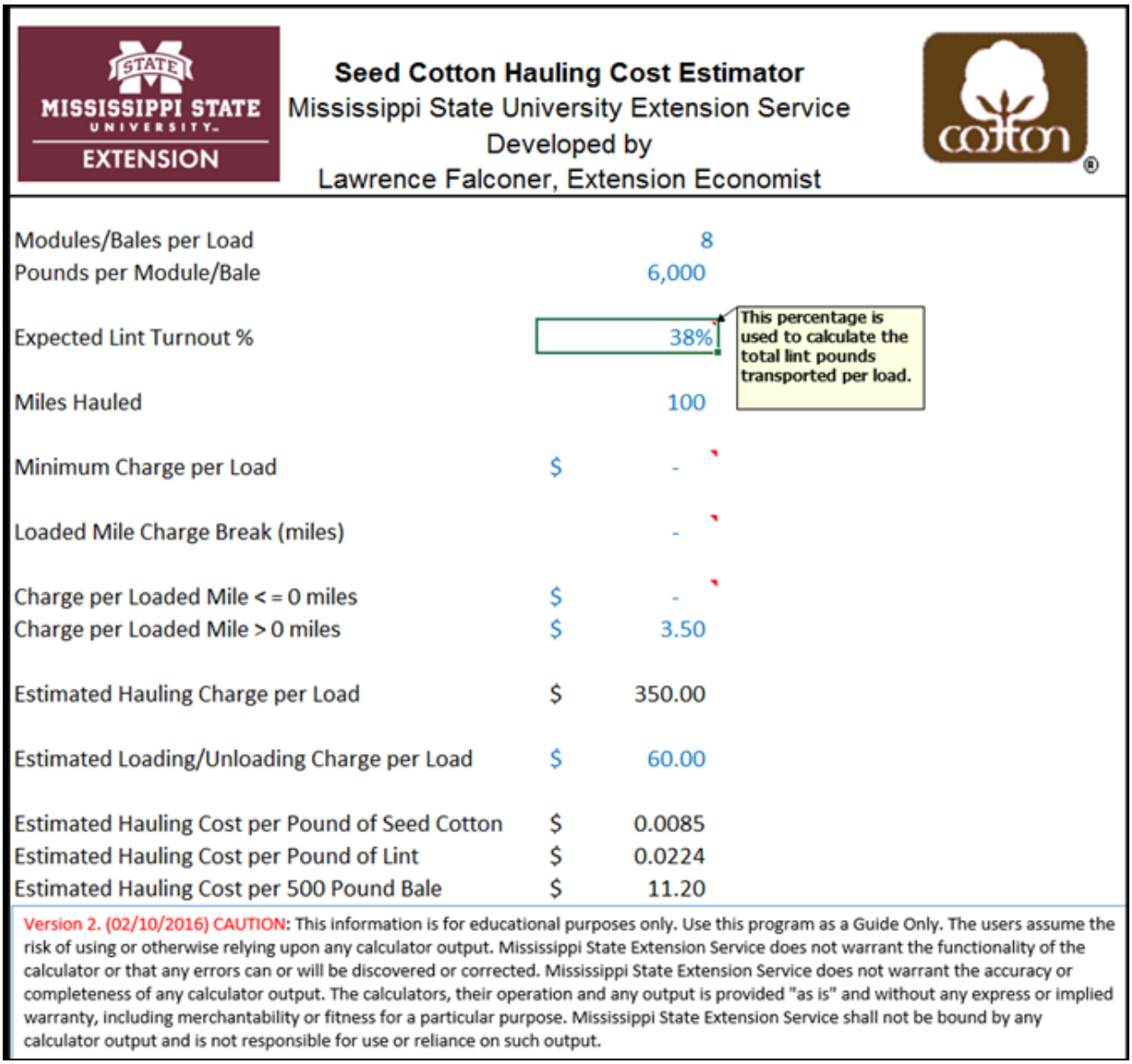

Figure 2. Seed Hauling Cost Estimator.

All input parameters for the decision support aid are shown in blue. The seed cotton hauling cost estimator has the capability to calculate transportation costs for standard module trucks or semi-trailer trucks. To make this calculation, input parameters are requested for the number of modules or round bales per load along with the average weight per module which is used to calculate the estimated weight for each load. If the user wishes to calculate the estimated hauling cost per lint pound, an estimate for the turnout needs to be entered. Context-sensitive help related to each input parameter can be accessed by placing the cursor over the input cell is seen in Figure 2.

After entering the information related to the calculation of the weight per load and turnout, the user can enter the number of miles for the haul. If there is negotiated minimum charge per load, that value should be entered in the designated input cell. This input cell can also be used to enter a value if there is a flat negotiated rate per load, along with entering zeros in the loaded mile charge break and the charge per loaded mile cells.

In most cases, the loaded mile charge break cell will contain a blank or 0 entry. This parameter is nonzero only in the case of a change in negotiated rate above a specific number of miles. In the case where one rate will be charged below a specific number of miles, that mileage should be entered in that cell, along with the applicable rates in the cells next two cells.

If desired, the user may enter a handling charge in the Estimated Loading/Unloading Charge per Load cell. The decision support aid expects that this value will be entered on a per load basis as opposed to a per Module/Bale basis. If a value has been entered in the Expected Lint Turnout % cell, the decision aid will calculate an estimated hauling cost per pound of lint along with the expected hauling cost per bale, based on a 500 pound bale weight.

Results and Discussion

Output from the seed hauling cost estimator decision aid can be used to simulate hauling costs for different methods of transport and distance. An example of the Seed Hauling Cost Estimator output is shown below in Table 1.

Table 1. Estimated per bale hauling costs using different production and transportation methods.

Transportation Method	Distance – Miles				
	10	25	50	75	100
Module Truck	$5.00	$7.50	$14.00	$20.00	$25.00
Module Truck with 4 rounds	$4.00	$6.50	$11.50	$16.50	$20.00
Flat Bed Trailer with 6 rounds	$5.00	$6.50	$10.00	$12.50	$16.50
Drop Bed Trailer with 8 rounds	$4.00	$5.00	$7.50	$10.00	$12.50

Summary

The objective of this paper was to describe a decision support aid designed to aid ginners and producers in calculating transportation costs for different methods of transportation of seed cotton. The decision support aid that has been developed and described has the flexibility to develop transportation cost estimates through the use of parameters that describe both the weight per module or round bale along with the number of modules or round bales per load. The decision support aid provides the user the capability to analyze flat rate charges per load, single rate charges per loaded mile along with a situation where to rates are applicable, where the first rate is applied to a negotiated distance, and a 2nd lower rate is charged for the remainder of the haul.

References

USDA National Agricultural Statistics Service Cropland Data Layer. Published crop-specific data layer [Online]. Available at http://nassgeodata.gmu.edu/CropScape/ (accessed 06/02/2015; verified 06/02/2015). USDA-NASS, Washington, DC.