

New Cotton Harvesting System

New Pickers With Module Builders Will Revolutionize Cotton Harvest

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Module builder pickers was a topic of concern of Chuck Danehower, University of Tennessee extension area farm management specialist, recently.

"There has been some research in some other areas on this equipment and I have reviewed that research and tweaked it a little bit for Tennessee conditions," he said. "I considered our yield, the type of yield history that we have, and I tried to come up with what the economics of these machines are."

Cotton farmers have completely gotten away from the wagons and trailers and the module builders probably have been around since the 1970s. They came into Tennessee probably in the late 1980s, early 1990s.

"That might have been tied to the gins," Danehower said. "The gins would have had to make that investment to be able to handle modules and so they had to buy into it."

It took about 10 to 15 years for the wagons to disappear, however now a new era is beginning in that the module builder picker has been presented.

"They are called 'on-board module building pickers' or 'on-board module builders' and they are looking at building the module within the picker as the picker is going through the field picking cotton," Danehower explained.

"That can give a tremendous advantage to a producer from several standpoints. It can increase his efficiency in that field or on his operation. It also would eliminate stand-alone module builders, stand alone module builders, bole buggies that take cotton from the picker to the module builder, and the labor that is required for those machines. That has gotten to be an issue the last several years, having the additional labor to run that kind of harvest system with module builders and pickers or buggies."

While eliminating the added machinery this also eliminates some of the breakdowns and labor associated with them. With the labor issues, too, there's always the concern of whether the help will show up or not. Traditionally, the employees who work the module builders and the bole buggies are seasonal type employees and are not as tied to the operation as full-time employees.

"Currently there are two systems on the market," he added. "I guess the Case product has probably been on the market longer than John Deere's. It has probably been out maybe one or two years to where a producer could buy it."

He explained the new machines are mini modules. The design is similar to the current modules that are shaped like a loaf of bread but only about half the size of the present modules. The cotton is compacted within the picker and then the picker will dump it on the end of the field.

The bale is not wrapped, but is just like the traditional module, but just smaller. Two are put together at the end of the field then a team of two employees will go around and wrap those modules with a small tarp.

While a traditional module has something like 15 bales of cotton in it, the new Case modules on their on-board picker or module picker probably have a capacity of six-and-a-half to seven bales in them.

"They are pretty sizeable," said Danehower. "Much of that depends on how operators get used to building them and making them. There is a lot of electronics computerized to help them determine when the module is full, when it is ready to dump, and how long it will be until it is ready to dump."

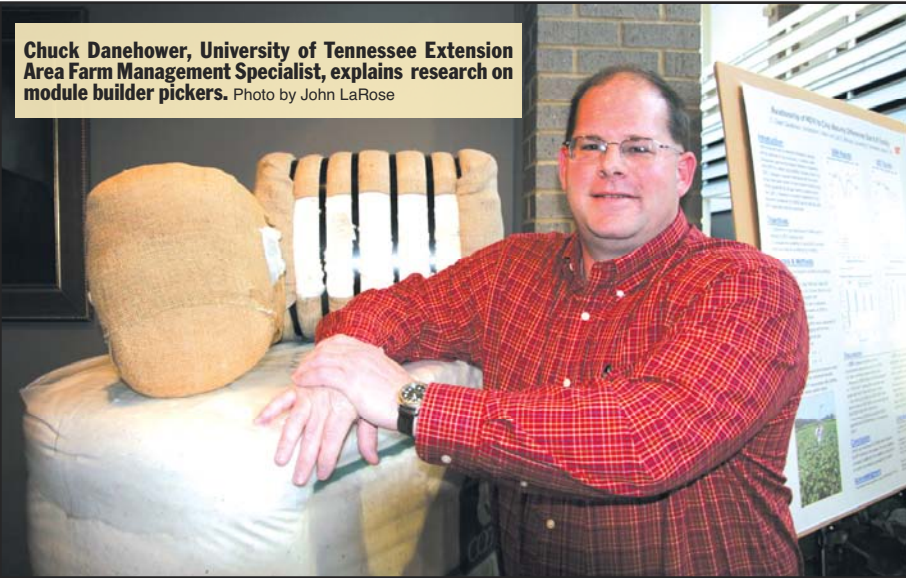
"Now the John Deere system is a little different system," he continued. "It makes like a big round hay bale, except there is about three-four

bales of cotton in that hay bale, so the bale is about 5,000 pounds."

Danehower said the Case picker could fit about two of its modules into a regular module truck, while the John Deere can fit about four of its round bales into the module truck.

"Just like a hay bale, the John Deere will wrap that bale to protect it from the weather and elements, and then it unloads into a bale carrier on the picker," he said. "At the end of the turn row it just dumps it off. You have to have somebody with a tractor and a cotton bale mover to come along and stage then. They will put the

Chuck Danehower, University of Tennessee Extension Area Farm Management Specialist, explains research on module builder pickers. Photo by John LaRose



four bales together for a truck to get them."

The round bales are held together with the wrap, the square bales are held together by compaction with a tarp over the top to protect them.

How quickly farmers latch on to the new system will depend on the size of the producer.

"Both of these systems probably are designed more for a 1,500 to 1,600 acre producer to make it most efficient or cost effective for them," Danehower said. "They probably will have to have that many acres. If you are a 500-acre producer or in and out of cotton, it is not a system for you. I have heard some comments that this might be a pretty good system for a custom harvester to have, and we may see some of that potentially down the road. That will cut their labor costs."

The cost of the new system is one of the bigger issues. Danehower said they cost \$100,000 to \$150,000 more than the traditional six-row standard picker.

"That is just one cost now," he said. "The other cost or savings that we look at may be based on field efficiency, improvement in cotton quality and different factors like that, so when you factor all those things even though it is a higher purchase cost, there will be a reduction of equipment and labor, so you are going to see probably a savings overall."

The gins can handle cotton from the Case module builder with no modifications.

"With the John Deere system there may be a few small modifications on the module hauling truck because the current chain will tear into that plastic and mess it up," Danehower said. "When the bale gets to the gin they will have to have an unwrapper to take the plastic off. They say that is estimated to cost \$250,000 to \$500,000 for a gin. The gin also will need two employees to work that machine. That is not depending on how many John Deere bales that gin will gin, so it may or may not be a significant cost. The examples that I have seen have been like on a 40,000 bale capacity gin, and John Deere bales all they gin. So that would probably be about \$1 a bale cost."

Danehower said it's unlikely the module builders will disappear soon. When the larger farmers go to the module builder pickers, there will be opportunities for the small farmer to purchase a used six row picker and some module builders or bole buggies a little cheaper.

"Maybe they have enough labor or they might not have labor issues, those types of producers probably will be able to take advantage of that and also benefit from it," he added. "The gins will probably be doing similar systems. They are used to the changes. They used to have gin trailers and gin modules also at the same time, so that may not be a big issue." Δ