Mechanical Harvesting Becoming More Important Despite Problems

By E. R. Holekamp and W. I. Thomas

Will machines pick Arizona's 1950 cotton crop? Indications are they will pick a lot of it.

Mechanical harvesting of cotton is playing a more important role in modern cotton production every year. In 1948, 20 mechanical pickers were working in Arizona; in 1949, there were about 120.

The development of mechanical cotton harvesters represents nearly a century of work by many individuals and firms. In general, two types of mechanical harvesters are used—the spindle picking machine and the cotton stripper.

The picking machine uses many barbed spindles that reach into the bush and pull the seed cotton out of the open bolls. The stripper employs either a pair of rollers or a single roller and bar to remove the bolls from the bush. Later, the seed cotton is separated from the burs by an extractor.

The cotton picker seen in our fields today can be used to advantage when the bolls are well opened and the cotton is not too tall or bushy. The picking in green cotton is generally not practiced because green leaves in the cotton are difficult to remove and they stain the lint,

Best When Leaves Removed

The general practice is either to wait until frost removes the leaves, or the leaves are removed by induced defoliation. The stripper can be used only after all the cotton has matured, which usually is a few weeks after the first killing frost. This machine harvests both mature and immature bolls.

At the University of Arizona Agricultural Experiment Station both the stripper and machine picker have been used in late-season harvesting.

Experiences with Arizona 44 show field losses comparable to that of Arizona 33 and Santan Acala.

The time of harvesting cotton is important. By waiting to harvest all the cotton at one time, considerable storm and weather loss may result in addition to machine-picking losses. This was experienced in 1948 when all attempts to harvest all the cotton at one time was made. The storm losses were estimated at 5 percent of the yield, being higher in the Paula variety.

Thickness of stand has very slight influence on machine-harvesting efficiency. Only small differences in harvesting efficiencies have been noted between rows thinned to a stand and unthinned rows seeded at rates varying from 5 to 10 pounds per acre. A uniform stand with fairly close spacing is the most desirable.

Grade reduction of machine-picked cotton is usually caused by excessive trash content. Sources of trash are weeds, grasses, and cotton leaves. To overcome leaf trash, good defoliation is required. This has been experienced only on rare occasions in the past. Natural defoliation is caused by light frosts; freezes generally kill plants without defoliation.

Induced defoliation has been accomplished, but is erratic largely due

(Please turn to page 12)

On the cover is shown a spindle-picking machine at work in Arizona.

A ten-foot combined hull separator-cleaner and a 56-inch burr extractor being used to clean roughly harvested cotton.
Picking Arizona Cotton
By Machine
(From page 3)

to lack of moisture. Calcium cyanamide will induce defoliation when dew is present after a rain. Induced defoliation is most effective when followed by frost within a two or three-week period. Otherwise, the plants will take on new growth. Under Arizona conditions the first frost does not occur until four to six weeks after the last summer rain.

Research agencies are trying new defoliants for irrigated cottons. Some progress is reported, but certainly nothing that can be depended on for commercial use.

Machine picking can be aided further by having clean fields, by timeliness of harvesting, by a conscientious operator and by using a minimum of spindle water.

Cotton cleaning equipment, assembled as a portable unit, was used in an attempt to reduce grade losses of machine-harvested cotton. Cleaning machine-picked cotton has shown some promise, but additional studies are needed. This equipment was found very effective on roughly hand-picked cottons, consistently maintaining higher grades. It is quite possible that the grade criticism against picking machines may be reduced by effective cleaning equipment in the gins.

Due to the general labor shortage in recent years and the laborer’s desire to work only in good cotton, some fields have been abandoned, while some cotton remained in the field as opened bolls or as bollies. Work is in progress on methods to harvest this remaining crop.

Strippers Used
Strippers are being used to gather this cotton and extractor units are being used to clean it in the field, leaving the waste as crop residue. Fields averaging as low as one-tenth bale per acre have been harvested. Considerable difficulty is being experienced in the satisfactory removal of stems from the cotton.

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New Bulletins

Here are newly issued bulletins and circulars. See or write your local county agricultural agent for a copy, or for other information.

Experiment Station Bulletins

They Call It Glamour Class
(From page 10)
saleslady is right when she says, “That dress is perfect for your figure!” This question starts off a study of how to choose clothing designs most flattering to one’s figure. With a class full of models for tiny girls, tall stately ones, skinny ones and fat ones, there are plenty of examples. Solving many minor difficulties like choosing a hat with a brim if one wears glasses steadfastly are also explained.

Make Clothing Budget

Making clothing budgets for themselves is one of the students’ last class assignments. Lectures explain good planning, such as the use of one rather neutral foundation like brown, navy or black for expensive coats and suits and then planning less expensive blouses and accessories to go with this one color for one season or one year.

Another seemingly obvious planning tip is not to buy things with which is already well-stocked. The girls find this hardest to heed in regard to sweaters and skirts. Having found them comfortable and easy to care for, they nearly all have four or five to seven or eight sets of sweaters and skirts and continue to yearn for more!

How much do Arizona girls plan to spend on clothes? A study at Kansas State College at Manhattan five years ago showed that a group of girls there spent an average of $255 a year. Last semester, the University of Arizona’s costume-selection class averaged $274.32 and this semester it was $218.70. The presence in class of GI wives and others on infinitesimal incomes who plan clothing budgets of $37 or $50 a year is an effective reminder of what must be done if one is to look well on a low-clothing budget.

—Mildred R. Jensen is Associate Professor of Textiles, Clothing, and Related Arts.

Extension Service Circulars & Folders
Circular 122 (Revised)—Control Garden Pests.
Circular 132 (Revised)—Scorpions in Arizona.
Circular 148 (Revised)—Grape Insect Control Hints.
Circular 160—Tailor Your Draperies.
Folder 53 (Revised)—Control Flies and Mosquitoes.
Folder 54 (Revised)—Cotton Insect Control.
Folder 57 (Revised)—Newcastle Disease.