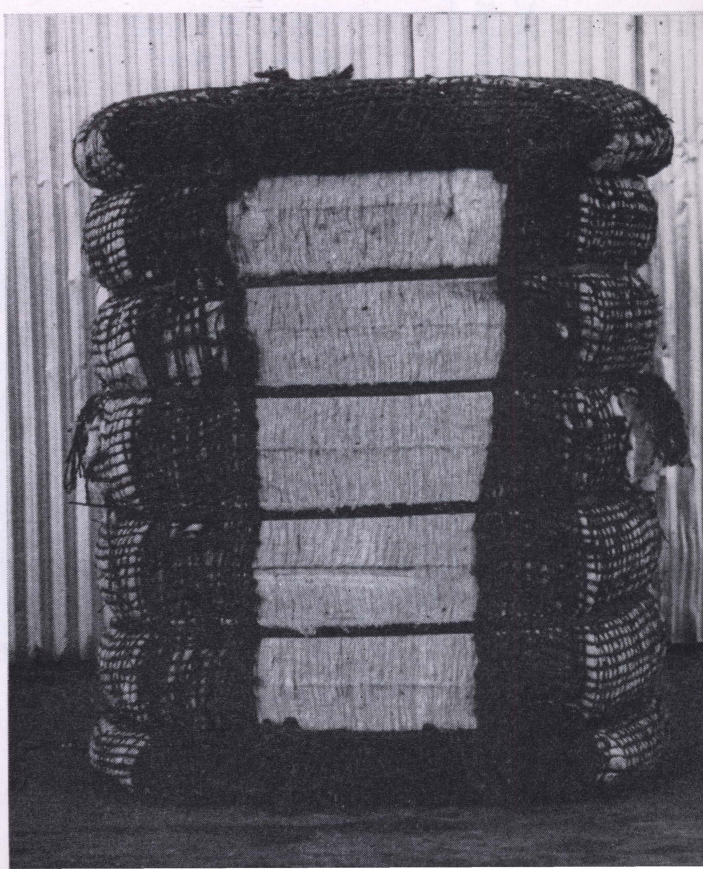
MP-297

Keep Cotton

DRY

LOOSE

CLEAN



TEXAS AGRICULTURAL EXTENSION SERVICE
J. E. Hutchison, Director, College Station, Texas

The way your cotton crop gets to the textile mills—in this country and overseas — means dollars to you in the years ahead.

No other fiber has cotton's unique natural advantages; no other fiber has cotton's amazing versatility. Now that chemistry has added new qualities — quick drying, resistance to soiling, mildew, wrinkling — cotton's uses have been broadened still further.

Let's maintain and protect its quality.

Keep Cotton . . . Dry—Loose—Clean

Fred C. Elliott

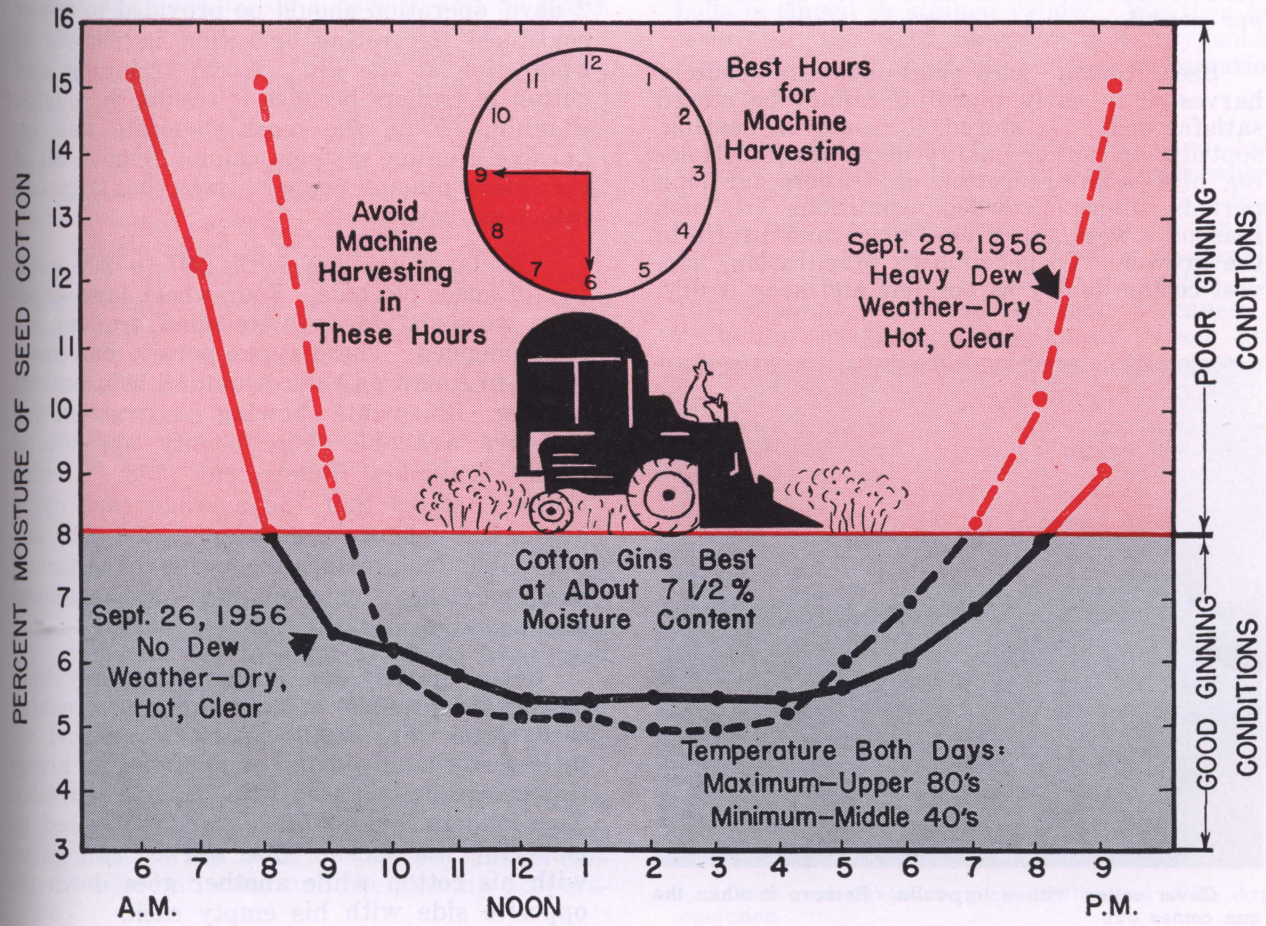
Extension Cotton Work Specialist
The Texas A. & M. College System

THE CONDITION OF SEED COTTON at the time it reaches the gin largely determines the final grade of the lint in the bale. Therefore, cotton should be produced, harvested and handled so that it reaches the gin as *dry, loose* and *clean* as possible.

In 1947 in Texas there were 19 spindle pickers in 13 counties and 3,443 cotton strippers in 58 counties. Ten years later there were 1,600 spindle pickers in 57 counties and 23,132 cotton strippers in 123 counties. During the past decade, the mechanization of cotton harvesting has advanced further than in any comparable previous period. Continued progress should result in more efficient cotton production.

Machine harvesting has brought many benefits to the cotton industry. It also has presented problems in preserving cotton quality. Most machine-harvested cotton is of high quality. Only about one-fourth of the machine-picked or stripped cotton has some quality defect due to contamination or fiber damage.

Most of these problems can be traced to lack of proper care or adjustment and operating too early or late in the day in damp or wet cotton.



Dry Cotton

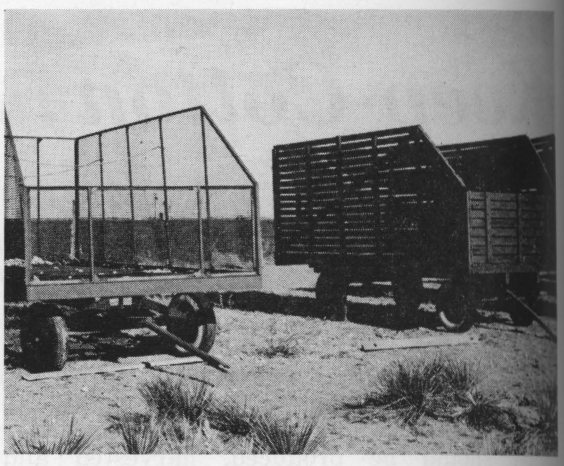
When to Harvest

Cotton gins best at a lint moisture content of seven and one-half percent. Numerous tests show that the high-moisture content of seed cotton during the early morning is due to the high relative humidity of the atmosphere. These tests show that the sun rapidly dries the excess moisture out of field cotton and that harvesting should be delayed until 8 or 9 a.m. These tests also show that the moisture content of the seed cotton begins to increase late in the afternoon. By 7 or 8 p.m. the moisture content may reach eight percent or more.

In ginning laboratory tests, the grades for the afternoon-harvested cotton averaged almost a full grade higher than for the morning-harvested lots. Loss of color associated with delay in ginning of the high-moisture seed cotton accounted for a large part of grade differences between these morning and afternoon harvested treatments. *The average value per bale under test conditions with gin-yard storage was about $12.41 more for the afternoon-harvested lots than for the morning-harvested ones, based on a price of 34 cents per pound.*

Seed cotton with high-moisture content harvested in early morning cannot be stored satisfactorily. If stored, it results in heating, spotting and other quality deterioration. Holding high-moisture cotton on trailers for long periods under crowded conditions in rush seasons lowers the grade, price and profit to the grower. To get smooth preparation, harvest cotton as dry as possible and keep it dry.

Cover cotton with a tarpaulin. Remove it when the sun comes out.



This type of large-capacity, wood-slatted or wire-sided trailer is recommended.

Loose Cotton

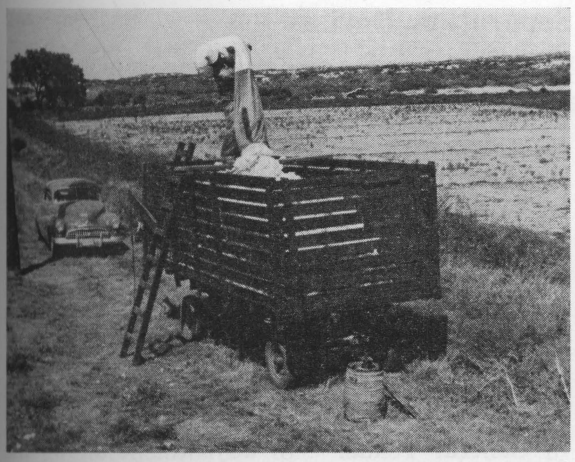
The ginning season in Texas is now concentrated in a 6 to 8-week period in the fall during favorable weather conditions.

Loading the Cotton

Sufficient trailers to hold the cotton from 2 days' operation should be provided to assure continued harvesting operation in periods of congestion at the gin. Avoid tramping seed cotton in trailers because it results in rougher ginning. Even the most elaborate and expensive ginning systems cannot remove all of the small "pin and pepper" trash that is ground into seed cotton.

Use large trailers with 250 to 300 cubic feet of space per bale. Four-wheel, large-capacity, wood-slatted or wire-sided trailers are recommended. These types permit movement of air to condition the cotton and help prevent heating. Blueprints showing construction and size are available from county agricultural agents. Farmers' Bulletin No. 1748, "Ginning Cotton," states that the average capacity to hold a full bale of coton is: 220, 270, 325 and 440 cubic feet, respectively, for hand-picked, machine-picked, hand-snapped and machine-stripped cottons.

Cotton quality can be maintained by eliminating the practice of tramping and crushing seed cotton into small capacity transport vehicles. In hand picking or snapping, a bridge timber can be laid across the top of the trailer. Two ladders, one on each side, will speed up emptying the sacks. One worker can go up with his cotton while another goes down the opposite side with his empty sack.



A bridge timber across the trailer top helps to avoid trampling.

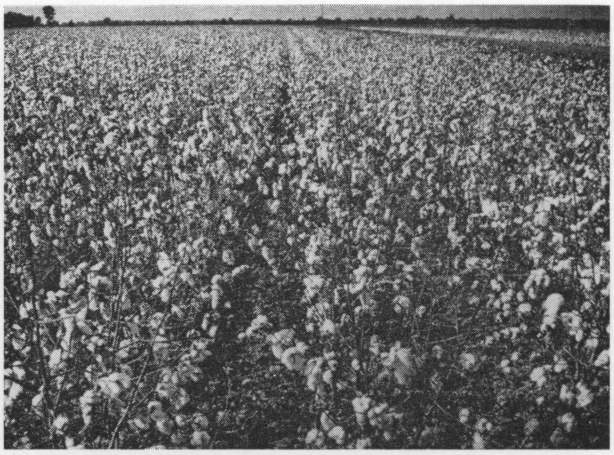
The Cotton Transport

Since permanent seed cotton storage facilities are expensive and since seed cotton must be transported to the gin from the field in some type of conveyance, farm equipment manufacturers have developed the cotton transport. This system of handling seed cotton is designed for economy and efficiency. These units consist of a carrier and as many removable cotton boxes or baskets as are needed. To load the basket or box, the carrier is backed under the basket which is then lifted hydraulically to the travel position. To unload, the carrier lowers the basket to the ground and pulls out from under it. The economical break-even point is one carrier and four baskets of 5-bale capacity. Generally, one carrier can handle 10 baskets. Savings result when growers use such systems of handling their mechanically picked cotton. Where wide usage is made of this system, it will be necessary for the gin to have a carrier so that efficient handling at the gin will be practical.

In some sections where climatic conditions permit, seed cotton is stored on the ground in the open prior to transporting it to the gin. Mobile cotton loaders save labor and time. Farmers are using Rembert-type fans mounted on tractors to load the seed cotton in trailers. Blueprint No. 378, "Cotton Loader," is available from county agricultural agents. Mobile cotton loader fan kits are available from most fan manufacturers.

Clean Cotton

The amount of trash present in lint cotton in a major factor in classing cotton. Cotton is graded on the basis of foreign matter content of the lint, color and the ginning preparation.



A good defoliation job means better grades and less green leaf stain.

Foreign matter includes both green and dry leaves of various kinds, stems, burs, shale from inside the burs, motes or immature seed, seed coat fragments, sand, dust and dirt.

Color of the lint is influenced by insect damage, diseases, fungi, honey dew, boll rot and undue weather exposure before and after the bolls open. Cotton from frost-damaged bolls is tinged or stained yellow. Weather exposure in the field causes a dull-gray color. Green leaf stain, oil and grease contamination reduce the grade.

Good defoliation reduces excessive leaf trash. Defoliation is desirable in fields where moist foliage and rank growth, full boll load and a tendency for cotton to lodge or for the bolls to rot are excessive. Timing the application is the most critical single factor. If the defoliant is applied too early it causes a reduction in yield which might offset any advantage of machine-picking efficiency or

Clean and service the picker at the end of the day's operation.

A blower attached to the stripper elevator means cleaner cotton.

quality improvement. A poor leaf drop probably will be obtained if the cotton is in a definite water stress, has started a regrowth or late, cool weather has started.

When to Defoliate

The time of day for applying defoliants and desiccants is important. Based on the information in the Chart, Page 3, early in the morning or late in the afternoon is the best time to apply true defoliants. The higher moisture content of the atmosphere helps activate these defoliants, in both the dust form and the water-carried sprays.

Desiccants, on the other hand, such as "Penta" mixed in diesel oil or kerosene, should be applied when dew is not present. Better penetration can be obtained by middle-of-the-day application with as little wind as possible.

Desiccants are recommended for defoliation where stripper harvest is practiced before frost. See Leaflet 145, "Cotton Defoliation Guide for Texas."

Servicing Equipment

Spindle pickers should be kept clean, adjusted, serviced and in top mechanical condition. It will pay to spend some time on upkeep of a mechanical picker since it replaces about 50 hands in the field. Instructions in the owner's manual, furnished with the machine, should be read, studied and followed. Good judgment is necessary in operating the picker in the field. Operate your machine at the proper speed, keep it centered on the row at all times; keep it in adjustment; and make regular clean-outs of foreign material.

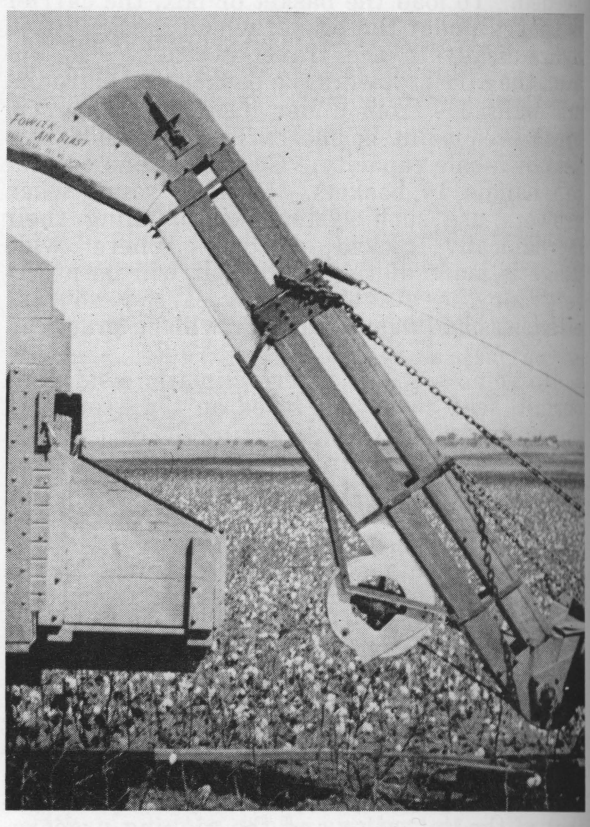
Separation Devices

Cleaner stripper harvesting can result by using separation devices. A blower attached to the elevator allows the stripped cotton to fall into an air stream and blows the cotton to the back of the trailer. If a wood-slatted or wire-sided trailer is used, the air from the blower can escape through the wire sides carrying trash with it. If a solid side is used, the air cannot "bleed" off, will ride over the side, carrying cotton with it and resulting in loss. This is especially true on windy days.

A green boll box on the outside front of the trailer is used by many farmers, particularly in Central Texas. An adjustment allows the green bolls which are heavier to drop into the box. Green bolls can be retained on the farm until dry and ready for separate ginning.

Weed and Grass Control

Since present-day gin machinery does not remove certain weed particles and grass from cotton lint, it is highly desirable to prevent weeds and grass from remaining in the field where they can be harvested by machines and carried to the gin with the cotton. Weed and



Use a green boll box on the trailer front if stripping before frost.

grass control is vital before harvest to prevent grassy bales, field losses and machine stoppage. Spot treatment of Johnsongrass is faster, cheaper and easier than hand hoeing. See B-902 "Spot-spraying Johnsongrass." Another excellent weed and grass control practice is lateral oiling with naphtha using parellel action oiling shoes attached to a regular spray machine.

The key mechanical weed and grass control practice is use of the rotary hoe. Flame cultivation also is becoming more popular in irrigated areas.

The hoe bill is the second most expensive item in growing cotton, but it can be reduced greatly by following certain recommended practices. Hand hoeing often can be eliminated.

Johnsongrass is being spot-sprayed with a jetgun sprayer and a Texas Blade protects the cotton.

Information gained from more than 35 research projects and the best results from cotton producers' experiences have been organized under the *7-Step Cotton Program*:

1. **Fit cotton into balanced farming.**
2. **Take care of your soil and water.**
3. **Get together on the best variety.**
4. **Follow practical mechanization.**
5. **Control insects and diseases.**
6. **Harvest, handle and gin for high grade.**
7. **Sell for grade, staple and quality value.**

Ideas from this informational program can be obtained from your county agricultural agent.

POINTERS

Pointers for Harvesting Cotton Dry

1. Harvest in the middle of the day. Seed cotton moisture is high in the morning before 8 to 9 a.m.

2. Protect cotton in trailers from the weather with a tarpaulin, but remove it when the sun comes out.

3. Do not mix high and low-moisture cotton. Mixtures of early morning damp-harvested cotton and later dry-harvested cotton should be avoided because the entire load will be down graded. If a spindle picker is used, set two trailers and alternate dumping the basket.

4. In operating a spindle picker, use only enough water on the spindles to keep them clean. If high field moisture is present, there is no need to apply spindle moisture.

5. Many stripper operators will wait until about 11 a.m. to start on damp mornings, thus allowing burs and cotton to dry. One machine can still strip 6 to 8 bales during the day.

6. When ginning is crowded, cotton maintains quality longer, particularly in West Texas, if stored on a well-drained spot in the field than when left on the stalk.

7. Observe the recommended "cut-off" date in making the last application of irrigation water.

8. Cooperate with your ginner in grouping cotton on the gin yard according to moisture and trash content for higher quality ginning.

Pointers for Handling Cotton Loose

1. Do not tramp and crush cotton in the trailer.

2. Provide trailers with 250 to 300 cubic feet of space per bale.

3. Provide enough trailers.

4. Avoid using small, two-wheel trailers.

5. Use a bridge timber across the top of trailers if hand picking or pulling is practiced. Also, provide two ladders, one on each side of the trailer.

6. The most practical height from the ground to the top of trailer bed for the mechanical picker is 7 to 8 inches. Some adjustment can be made by placing wheels on one side in a shallow furrow if necessary.

Pointers for Keeping Cotton Clean

1. Clear fields of sticks, stumps, rocks, scrap iron, etc. These obstacles can damage a machine severely.

2. Control cotton insects. Practice early season control and follow through in late season. Ask your county agricultural agent for L-218, "Texas Guide for Controlling Cotton Insects."

3. Control grass and weeds by chemical and mechanical methods.

4. Avoid leaf trash from grain sorghum fields as much as possible.

5. Practice cotton disease prevention and control.

6. Use defoliation recommendations for the area, and use a regrowth inhibitor to help prevent green leaf stain. Stagger the application of defoliants.

7. Store only low-moisture-content cotton and gin seed cotton containing green leaf trash as soon as possible.

8. Do not tramp cotton in trailers or picker baskets.

9. Avoid the use of small, two-wheel trailers. Have enough large trailers.

10. Keep pickers and strippers clean. Make regular clean-outs of foreign material. Follow instructions in the owner's manual.

11. Do not overlubricate. Wipe off excess lubricant; use lubrication guide in operator's manual; stop all oil leaks and keep parts free of oil and grease.

12. Keep cotton trailers clean; remove grease and oils from previous use; keep tar spots out of trailers and cotton.

13. Do not operate strippers too soon after frost or the use of desiccants.

14. Avoid barky cotton; keep the machine centered on the row; operate at proper speed.

15. Follow the best production practices; plant on 40-inch rows; leave about 40 to 50 thousand plants per acre (three to four plants per foot); cultivate shallow throughout the season to maintain a broad, flat row.

16. Use separation devices on strippers such as blowers and green boll boxes. Use wood-slatted or wire-sided trailers.

17. Allow enough room at the ends of the row to turn equipment and enter the row at operating speed. Keep the ends of the row free of grass and weeds at harvest time.

18. **Follow the 7-Step Cotton Program.**

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