



SPOT TREATING Johnson grass in cotton with Dalapon. This herbicide should be applied when the grass is about eight inches high. Delaying treatment until grass reaches the size shown in the illustration increases costs and may reduce control.



DALAPON

Controls Johnson Grass And Bermuda Grass

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Farm laborers, chopping Johnson grass under our June sun, may believe they see new sprouts when glancing back to observe progress, and may dream of a herbicide that would cause this and similar grassy weeds certain death. Recent research in Arizona indicates Dalapon, a relatively new herbicide, approaches the answer to these dreams.

Dalapon is a systemic herbicide. When applied to the leaves, some of the Dalapon is absorbed, enters the conducting system and is translocated to the roots and rhizomes. Dalapon causes destruction of grass foliage, with initial symptoms usually becoming evident at the tips and margins of the leaves. The browning of leaves becomes evident within a few days when temperature and humidity are high. At low temperatures, browning of the leaves is much slower. Dalapon may completely kill, cause temporary dormancy, or have no visible effect on the rhizomes of perennial grasses.

Apply to Foliage

When Dalapon is applied to the soil it can be absorbed by plant roots. However, Dalapon is most effective when applied to the foliage. Under most conditions, when Dalapon is used to control grass, it should be applied to the leaves.

Many farmers and water users' associations use Dalapon to control Johnson grass along ditchbanks. Although there is disagreement as to the optimum time and rate of application, most farmers agree that Dalapon is an effective and economical control method. Dalapon usually is dissolved at the rate of one pound per five gallons of water and sprayed to wet the grass foliage. Retreatments usually are necessary.

As Johnson grass is destroyed with Dalapon, other weeds often increase, especially the annual broadleaved weeds. For general ditchbank weed control, alternating applications of Dalapon with weed oils and/or liquified petroleum burners may yet prove the most effective control program.

Spot Treatment In Cotton

During 1957 considerable cotton acreage in the Salt River Valley was spot treated with Dalapon to control Johnson grass. When properly applied, results were generally excellent. Most growers had good early season control with two applications. Some fields required one hoeing after layby to eliminate late season growth of Johnson grass.

The results of last year emphasize the importance of applying Dalapon at the proper time. Retreatment is needed, prior to the second or third irrigation, when grass regrowth is about eight inches high. Delaying retreatment until regrowth was 18 to 20 inches tall gave poor control

EDITOR'S NOTE: Additional information on Dalapon will be presented in Bulletin No. 293 which will be available from your County Agent in a few weeks.

and injured excessive amounts of cotton. Grasses treated when flower tissue had started to form often were not controlled and usually produced flowers. Many of these flowers were imperfect and produced no viable seed.

Edges Bermuda Grass Lawns

Home owners will find Dalapon a useful tool for lawn maintenance. Removing runners from the edges of Bermuda lawns is a chore during the growing season. Two timely applications of Dalapon will replace most, often all, hoeing, knifing, or clipping.

When runners are four to six inches long, Dalapon should be applied in a band about four inches wide with a knapsack sprayer. (For small areas, 100 to 200 feet of edging, a paint brush can be used to apply Dalapon.) Two to four ounces of Dalapon per gallon of water makes a good solution for edging.

Treated runners are destroyed and Bermuda grass is inhibited a few inches beyond the treated band. Runners are usually inhibited for four to eight weeks. Care is essential in directing the Dalapon solution to the treatment band. Improper application may injure portions of the lawn proper.

Lawn Renovation

Dalapon can be used in renovating Bermuda grass lawns. Before a new perennial turf is planted, the established Bermuda grass must be destroyed. Dalapon applied to grass foliage at the rate of one pound per thousand square feet usually kills Bermuda grass. For best results the grass should be growing vigorously when treated. Irrigation or rainfall immediately after treatment will decrease the effectiveness of Dalapon.

A week to 10 days after treatment, the turf should turn brown. It can then be spaded, disked, or rototilled. The ground should then be irrigated. Within two to three weeks the new lawn can be established.

Unless Dalapon has become inactivated in the soil it could injure the new lawn. With adequate soil moisture and high soil temperatures this inactivation is rapid. Under Arizona growing conditions injury has not occurred when: (1) adequate soil moisture was maintained for two to four weeks between treating the original sod and establishing the new turf; and (2) the treated sod was completely turned under when preparing the new seedbed.

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A Soft Rot Affecting Green-Wrapped

TOMATOES

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Tomatoes have been grown in Arizona only on a limited scale as a winter crop on the Yuma Mesa and in warmer areas of the Salt River Valley. Attempts to grow spring planted tomatoes in valleys of 2,000 to 4,000 feet altitude have too often resulted in severe losses from the curly top virus.

A recent attempt to grow a fall-maturing crop has met with considerable success in field culture and freedom from curly top, but ran into other difficulties. July planting, at least in 1955 and 1956, gave almost complete freedom from curly top. Apparently no virus-bearing leaf hoppers were present.

In 1956 between 700 and 800 acres of tomatoes were grown commercially in Arizona. Stand, vine condition and yield in the best fields were considered good. No leaf diseases and very little fruit decay was noted in the fields. Continuous warm weather matured some fields too early for the best prices.

Green Tomatoes 'Melted'

Attention was directed to a decay of the green fruit by a report of a consignee that from 15 to 20 per cent of the truck-load was "melted" when received. Fortunately several unsold 60 pound wired crates of the same lot of tomatoes remained in the packing house. These on examination showed the same percent of "melts."

The rot encountered was soft, the fruit becoming a "bag of water" as the whole fruit was involved. A whitish scum and a white fluffy fungus growth was observed. Ripening fruit was also susceptible. A third (13 of a total of 40) large pink to red fruits in a packed flat showed the same soft rots.

Cultures made from the decaying tissues showed that two fungi were present often in combination in the rotted areas. *Rhizopus nigricans* developed in two days as a grey to black growth on the fruit and *Oospora lactis* developed a white scum-like growth. Black mold and sour rot are two descriptive common names for these rots. A third fungus, *Pythium*, was also common.

These fungi were inoculated into sound green fruit under sterile conditions and produced the typical rots.

Result From Abrasions

The fungi causing melting of tomatoes are wound parasites, and breaks in the skin are necessary to permit their entrance. Avoiding these losses depends upon three principles:

1. SANITATION — to keep the spores present to a minimum.
2. CARE IN HANDLING — to avoid injuries to the fruit.
3. TEMPERATURE AND HUMIDITY in transit and storage is perhaps equally important.

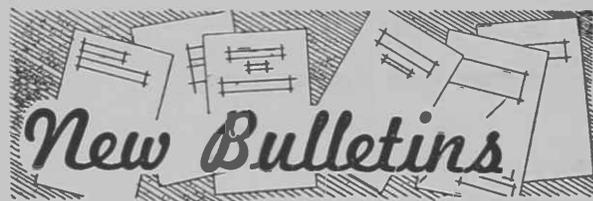
Sanitation is most important around the packing plant, where all rotted or spilled fruit must be gathered and buried daily and all picking boxes and packing equipment, floors, etc. should be kept clean and free from dried residues of decayed fruits.

Handle It Like Eggs

In every step of picking, hauling, grading, packing and shipping the fruit should be handled carefully, as only injured fruit develops soft rots.

High humidity is perhaps even more important than temperature, as surface moisture is necessary for infection if the wounds present are small.

Similar soft rots have appeared in some lots of green wrap tomatoes shipped from the west coast of Mexico.



These new U of A publications are available at no cost to you from your local county agricultural agent.

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Bulletins:

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283—(Reprinted) Chemical Control of Annual Weeds in Cotton

290—Experiment Station Annual Report

291—Arizona Needs More Meat Packing Facilities

292—Arizona Agriculture 1958

293—Johnson Grass Control with Dalapon and Liquefied Petroleum Burners

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Still Use a Hoe

Small amounts of Dalapon in the soil will not control seedlings of Bermuda grass or other weeds which appear while the new lawn is being established. Such weeds must be controlled with a hoe, knife, or suitable herbicide.

Relatively little is known concerning the action of Dalapon and how it interferes with the growth of grasses. Considerable research is necessary before this herbicide can be used most effectively. However, our limited experience indicates Dalapon is a promising tool for farmers, ranchers and home owners in their attempts to control grass.