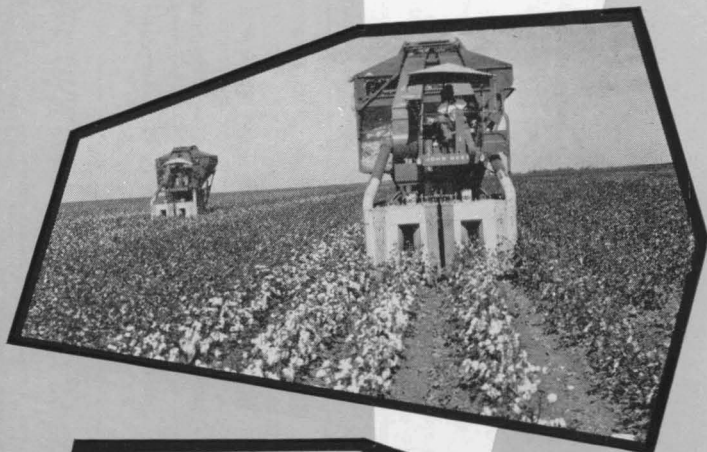


Cotton

DEFOLIATION GUIDE



FOR TEXAS

**READ THE FEDERALLY APPROVED LABEL ON FARM CHEMICALS
AND FOLLOW THE INSTRUCTIONS GIVEN THEREON !!**



THE AGRICULTURAL AND MECHANICAL COLLEGE OF TEXAS
TEXAS AGRICULTURAL EXTENSION SERVICE
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GUIDE FOR USE OF DEFOLIANTS AND DESICCANTS—1963

Effective March 5, 1960, defoliants and desiccants came under the regulations of Public Law 518; however, Public Law 87-19, enacted April 7, 1961, further extends the effective date of enforcement of the Federal Food, Drug, and Cosmetic Act as it concerns selected defoliants and desiccants. No claim is made that this list is complete and others may be added as extensions are granted or as tolerances are set or as exemptions from tolerances are granted under the regulations of Public Law 518 and Public Law 87-19.

Chemical name	Name of defoliant	Percent active ingredient(s)	Rate per acre	Additional information
DUSTS				
Calcium cyanamide ¹	AERO cyanamid	57	30 lb.	Dew is necessary to activate chemical.
Sodium chlorate ²	Shed-A-Leaf "D"	15	20-25 lb.	Dew is necessary to activate chemical.
(with fire suppressant)	White Frost	12	20-33 lb.	Dew is necessary to activate chemical.
Tributyl Phosphorotrithioate ³	5% Folex Dust	5	20-40 lb.	Apply in late afternoon when plants are dry or follow label instructions.
S,S,S-Tributyl Phosphorotrithioate ⁶	DEF Defoliant 7.5% Dust	7.5	15-25 lb.	Dew is necessary to activate chemical.
SPRAYS⁴				
Magnesium chlorate ⁵ (anhydrous and hexahydrate)	Ortho M-C	58	7-10 lb.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
Sodium chlorate-Magnesium chloride	Penco Liquid De-Fol-ate	19.6-13.0	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Mathieson M	19.9-13.2	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
Sodium chlorate ² (with fire suppressant)	DePester Defoliant	19.0	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Fall	18.5	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Niagara Leaf Dropper	18.2	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Mathieson Quick Pick	18.2	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Leaf-Drop	28.0	1-1⅓ gal.	Dilute in 10-20 gal. water per acre by ground; 3-10 by air.
	Ortho Liquid Cotton Defoliant	18.2	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Shed-A-Leaf "L"	18.2	1½-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Stauffer Chlorate-Borate Liquid Defoliant	18.2	1-2 gal.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Stauffer Sodium Chlorate Liquid Defoliant	19	1-2 gal.	Dilute in 4-6 gal. water per acre.
S,S,S-Tributyl Phosphorotrithioate ⁶	DEF	70.5	1½-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	De-Green Defoliant	70.5	1½-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Fos-Fall "A"	70.5	1½-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Niagara Deleaf Defoliant	70.5	1½-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
Tributyl Phosphorotrithioate ³	Folex	75.0	1-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air. For drouth-stressed cotton, use 2 pt. in 3-5 gal. white diesel oil per acre. See label.
DESICCANTS FOR MECHANICAL STRIPPER HARVEST^{4, 7}				
Arsenic Acid ⁸	Niagara Cotton Desiccant	75	1½ qt.	Dilute in 10 gal. water per acre.
	Ortho Arsenic 75 Cotton Desiccant	75	1½ qt.	Dilute 1 gal. in 14 gal. water. Apply 4-6 gal. per acre. See label.
	Penco Desiccant L-10	75	1½ qt.	Dilute in 10 gal. water per acre.
	Southwest Super 75	75	2 qt.	Dilute in 10 gal. water per acre. See label.
	Olin Arsenic Acid	75	1½ qt.	Dilute in 10 gal. water per acre.
	Chipman Arsenic Acid 75	75	1½ qt.	Dilute in 10 gal. water per acre.
	Hi-Yield H-10	75	1-1½ qt.	Mix with water to make 5 gal. per acre. See label.
	ABC Desiccant	75	1-1½ qt.	Mix with water to make 5 gal. per acre. See label.
Pentachlorophenol ⁹	Leaf-Kil	44	2 qt.	Add to 5-10 gal. diesel fuel or kerosene. Apply this with 3 to 5 nozzles per row at 40 p.s.i. at tractor speed of 4 mi. per hour. See label.
	Golden Harvest Defoliant and Crop Dryer	41	2-3 qt.	Dilute with 10 gal. No 2 fuel oil. See label.
	Stauffer Penta 40-S Plant Desiccant	40	2-3 qt.	Follow directions on label.
	Golden Harvest Drop-Dead	30	2-4 qt.	Dilute with enough water to give coverage. See label.
	Scorch	28.8	2-3 qt.	Dilute with 3-10 gal. water per acre. See label.

¹Seventeen pounds technical chemical per acre is the limit allowed according to "USDA Summary of Registered Agricultural Pesticide Chemical Uses." Apply when latest bolls that will make cotton are mature. Apply 7 to 14 days before picking cotton.

²Do not apply within 7 days of harvest. Limit to 5 pounds actual technical chemical per acre. Do not allow livestock to graze treated area.

³If repeat application is necessary, apply 5 to 10 days later at one-half rate.

⁴Tests during the last season indicated that the inclusion of activators or spreaders, such as Colloidal X-77 and others, at the rate of 1½ pints by air and 1 pint per 100 gallons of field mixture by ground gave some increase in leaf drop under conditions unfavorable to defoliation or desiccation such as moisture stress or cool weather. Emulsifiers have already been added to the two materials, Golden Harvest Drop-Dead and Scorch.

⁵Limit to 4 pounds actual technical chemical per acre. Do not apply within 7 days of harvest. Do not graze and do not feed gin trash to livestock.

⁶Apply when 50 percent or more bolls are open. Do not apply within 7 days of harvest.

⁷Pentachlorophenol and arsenic acid are both desiccants rather than true defoliants. Because of their severe action on plant tissues, they should be used only when bolls are fully mature and cotton is over 60 percent open.

⁸Extended for use on cotton to January 1, 1964. Do not exceed 4.4 pounds actual technical chemical per acre. Do not apply within 4 days of harvest. Do not graze treated areas. Do not feed gin trash to livestock.

⁹Extended to January 1, 1964. USDA limitations, 3 pounds actual technical chemical per acre. Do not graze treated areas. Do not feed gin trash to livestock.

WHEN TO APPLY

When 60 percent or more of the bolls are open, it is safe for most defoliants to be applied. Desiccants should be applied when more than 60 percent of the bolls are open under dryland conditions. Under irrigation, apply desiccants when more than 80 percent of the bolls are open. Plants are considered suitably mature if the *youngest* bolls (1) cannot be dented by pressure between the thumb and forefinger or (2) cannot easily be cut through with a sharp knife.

Disregard of these recommendations and applying defoliants or desiccants too early results in (1) reduced yields per acre, (2) lower micronaire reading and (3) weaker fiber. Thus quality is lowered causing cotton to suffer at the market place.

1. Dust defoliants

Use dust defoliants when plants are wet with dew or when adequate dew is forecast. Material must remain in moisture on the leaf for at least 2 hours to activate the chemical; 4 or more hours of moist exposure give better results, or follow label instructions.

2. Spray defoliants

Spray defoliants may be used in the absence of dews and at low humidities. Thorough coverage is essential.

Airplane spraying: Apply at rates given in the table. Swath widths should be limited to the wing-span of the plane. For uniform applications, a flag man is necessary.

Ground spraying: Use rates given in the table. Use in 10 to 20 gallons of water, depending on type of sprayer and extent of plant growth. Use fenders on tractor equipment in rank cotton. Consider carefully all weather information such as dew and humidity forecasts, temperature, wind velocity and rainfall from radio and television stations.

BOTTOM DEFOLIATION

In extremely rank cotton, bottom defoliation may be helpful in reducing boll rot and field loss. Defoliate as high up on the plant as possible until bolls are found that can be cut with a pocket knife.

Defoliation higher up on the stalk will injure the immature bolls. For bottom defoliation, use half the minimum rate given in the table for the spray defoliant. Use extreme caution in bottom defoliation to avoid complete defoliation of the plants. Generally, one fan-type nozzle on each side of the row gives satisfactory results.

For the final defoliant application, *do not exceed* the total maximum residue limits per acre. If necessary, use a chemically different defoliant to stay within the allowable limits of residue tolerance.

CAUTIONS

Defoliate only enough acreage to stay ahead of harvesting. If a second application is required in unusually rank cotton, use a chemical with a different active ingredient, if necessary, to stay within a safe residue tolerance. Read carefully and follow the precautions printed on the container labels. Avoid using any defoliant that is not labeled as to exact chemical content. Unknown defoliant may injure exposed fibers, unopened bolls or cause fire hazards at the gin. Wait 1 or 2 weeks before operating stripper harvesters after applying desiccants. Unusual delay may result in regrowth or barky cotton.

CARE OF EQUIPMENT

Before beginning application, clean spray tanks, pumps, lines and nozzles thoroughly to remove sticky residues left by liquid insecticides. Flush spray machines with water after each day's operation.

If phosphorus-type insecticides have been used in the same spray equipment, thoroughly wash spray tank, particularly dried deposits on aircraft fabric. Likewise, if chlorate-type chemicals have been used in the same spray equipment, thoroughly wash spray tank and dried deposits on aircraft fabric before applying organo-phosphorus defoliant.

SAFETY WITH CHEMICALS

Avoid spray drift to plants and crops other than cotton.

Follow carefully precautions on the label.

If chemicals come in contact with the skin, remove the residue immediately by scrubbing with

soap and water. Store materials in a safe place out of reach of small children and irresponsible persons. Keep the materials in their original, properly labeled containers, away from human food or animal stuff, fertilizers, seeds, insecticides, fungicides, etc., and where there is no fire hazard.

Burn or bury empty arsenic acid desiccant containers.

The basis for the control program on farm chemicals is to prevent undue risk from residues of the chemicals in the raw agricultural product. Any defoliant or desiccant used eventually will have tolerances or an exemption from tolerances designated for its safe use or will be registered on a nonresidue basis. Until official Federal regulations are issued governing the use of a specific defoliant or desiccant, it should not be used.

It is the responsibility of the manufacturer or formulator of a particular defoliant or desiccant to obtain registry with the Pesticides Regulation Division or USDA and the Food and Drug Administration.

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