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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—1962

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 Phosphorotrithioite ³	50% Folex Dust	5	20-40 lb.	Apply in late afternoon when plants are dry or follow label instructions.
S,S,S-Tributyl Phosphorotrithioate	DEF Defoliant 7.5% Dust	75	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 (with fire suppressant)	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.
	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.
S,S,S-Tributyl Phosphorotrithioate ⁶	Stauffer Sodium Chlorate Liquid Defoliant	19	1-2 gal.	Dilute with 4-6 gal. water per acre.
	DEF	70.5	1⅓-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	De-Green Defoliant	70.5	1⅓-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Fos-Fall "A"	70.5	1⅓-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
Tributyl Phosphorotrithioite	Niagara Deleaf Defoliant	70.5	1⅓-2 pt.	Dilute in 10-20 gal. water per acre by ground; 5-8 by air.
	Folex	75.0	1-2½ 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.
	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.
Pentachlorophenol ⁹	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.

³Tolerance established under USDA of 0.25 parts per million; if 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, 1963. USDA limitations 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, 1963. USDA limitations, 3 pounds actual technical chemical per acre.

WHEN TO APPLY

When 60 percent or more of the bolls are open, it is safe for most defoliant to be applied. Desiccant applications should be made when more than 60 percent of the bolls are open under dryland conditions. Under irrigation, desiccants should be applied when more than 80 percent of the bolls are open. A boll that can be cut easily with a pocket knife may be damaged by desiccants or defoliant.

1. Dust Defoliant

Use dust defoliant 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 Defoliant

Spray defoliant 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 wingspan of the plane. For uniform applications, a flag man is necessary.

Ground spraying: Use rates given in the table. Use in 10-20 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 one-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, be sure the maximum residue limits are within the allowable

range for the defoliant being used. If necessary, use a 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, it is suggested that spray tanks, pumps, lines and nozzles be cleaned thoroughly to remove sticky residues left by liquid insecticides. Flush spray machines with water after each day's operation.

SAFETY WITH CHEMICALS

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.

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