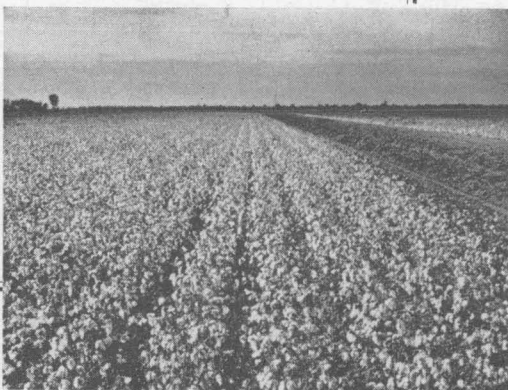


Cotton Defoliation Guide

FOR TEXAS



TEXAS AGRICULTURAL EXTENSION SERVICE

J. E. HUTCHISON, DIRECTOR, COLLEGE STATION, TEXAS

GUIDE FOR USE OF DEFOLIANTS

Chemical name	Name of defoliant	Percent active ingredient(s)	Rate per acre	Dilution Information
— DUSTS —				
Calcium cyanamide	AERO cyanamid	57	30-40 lb.	None
Sodium chlorate Sodium metaborate	Shed-A-Leaf "D"	50	20-25 lb.	None
— SPRAYS ¹ —				
Amino triazole	Amino Triazole Defoliant and Growth Inhibitor	90	1-2 lb. alone or ¾-1 lb. in mixture	Apply in 5-10 gal. water by air, 15 or more gal. water by ground sprayer. Mix with ½ the recommended rate of other water soluble defoliants and apply at above rate or follow instructions on label.
	Meeno	90	1-2 lb. alone or ¾-1 lb. in mixture	Same as above.
Endothal	Penco Endothal Harvest Aid	6.3	4-5 qt.	5-10 gal. water per acre by air, 10-25 gal. by ground applicator.
Magnesium chlorate (hexahydrate)	Magron	40	2-3½ qt.	5-10 gal. water per acre by air, 20-30 gal. by ground applicator.
	General Chemical E-Z Off Liquid Defoliant	18.15	1½-2 gal.	5-7 gal. water per acre by air, 15-20 by ground.
	Niagara M-C Defoliant	58	7-10 lb.	5-10 gal. water per acre by air, 15-25 by ground.
	Penco De-fol-ate	60	7-10 lb.	5-10 gal. water per acre by air, 10-30 gal. by ground.
	Ortho M-C	58	7-10 lb.	10 gal. water per acre by air, 10-20 gal. by ground.
Merphos	Folex	72	1-2 lb.	7-10 gal. water per acre by air, 20-30 gal. by ground.
S,S,S-Tributyl Phosphorothrithioate	DEF Defoliant	88	1½-2 lb.	Dilute with enough water to wet plants or follow instructions on labels.
Sodium ethyl xanthate	S.E.X.	90	4-8 lb.	Use enough water to wet plants, or follow instructions on label.
Sodium chlorate-	Shed-A-Leaf 'L'	18	6-8 qt.	7-10 gal. water per acre by air, 20-30 gal. by ground.
Sodium pentaborate	Chlorate-Borate Liquid Defoliant	40-52	1½-2 gal.	Same as above or follow label instructions.
Sodium chlorate- Sodium pentaborate Sodium tetraborate	Ortho C-1 Defoliant	40-45-11	5-10 lb.	5-10 gal water per acre by air, 10-15 gal. by ground.
Sodium chlorate (Sodium metaborate)	Fall	18.5	1½-2 gal.	Mix with water to give good coverage or follow instructions on label.
	Drop-Leaf	18.5-12	1½-2 gal.	Same as above.
— DESICCANTS FOR STRIPPER HARVEST ^{1 2} —				
Pentachlorophenol	Leaf-Kil	38-2.0-30-30	2 qt.	Add to 4½ gal. diesel fuel or kerosene. Apply this 5 gal. with 3 nozzles per row at 40 p.s.i. at tractor speed of 4 mi. per hour.
	Golden Harvest Crop Dryer	44	2-3 qt.	Dilute with enough colorless fuel oil No. 2 to give uniform coverage or follow label instructions.
	Permaguard Defoliant Concentrate	40	2 qt.	3-6 gal. diluted solution per acre using distillate, fuel oil, diesel oil or kerosene.
	Stauffer Penta Concentrate	40	2 qt.	Dilute with enough colorless fuel oil or kerosene to give uniform coverage or follow label instructions.

¹Tests during the last season indicated that the inclusion of activators or spreaders, (1) Colloidal X-77 or (2) Multifilm "C" at the rate of 1½ pints per 100 gallons of field mixture gave some increase in leaf drop under such conditions as moisture stress or cooler weather.

²Pentachlorophenol and arsenic acid both are primarily desiccants rather than true defoliants. Because of their severe action on plant tissues they should not be used on immature cotton. Use only when all bolls are fully mature and cotton is over 60 percent open.

The desiccant, arsenic acid, gave excellent drying for stripper harvest in all tests at 1½ quarts in 5 to 10 gallons of water per acre. Due precaution and strict sanitation should be followed in using the material. The compound is corrosive to application equipment and is toxic to man and animal. Due to its corrosive and toxic nature further research is needed to clarify application hazards and possible residue problems attending its use.

WHEN TO APPLY

Defoliants, dusts or sprays should be applied at least 35 days after the period of maximum flower load. This permits maximum staple length development. Another way to time the application of defoliants would be 30 days after cotton quits making "cut out" or when the youngest bolls expected to make cotton are 30 days old. Make application 10 days or 2 weeks prior to intended picking date in Central and South Texas, and 2 to 3 weeks on the High Plains. When 50 percent or more of the bolls are open, it is safe for most defoliants to be applied. Desiccant applications should be made when over 60 percent of the bolls are open.

1. Dust Defoliants

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

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 at least 25 gallons of water, depending on type of sprayer and extent of plant growth. Use fenders on tractor equipment in rank cotton. More efficient defoliation results when cotton is mature with leaves in a condition of activity, not wilted and not toughened by drouth or starved by lack of fertility; and where plant moisture is adequate and weather is warm and humid. Consider carefully all weather information, such as dew and humidity forecasts, temperature, wind velocity and rainfall from radio stations.

CAUTIONS

Defoliate only enough acreage to stay ahead of harvesting. A second application may be necessary in unusually rank cotton, or if plants are immature. This should be after leaves have fallen from the first application, usually 7 to 10 days. 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 defoliants may injure open fiber, unopen bolls or cause fire hazards at the gin. Wait 2 weeks before operating stripper harvesters after applying desiccants.

CARE OF EQUIPMENT

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

FRED C. ELLIOTT

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