TUCO

ACCEPTED 5/16/68

UNDER THE FEDERAL INSECTICIDE FUNGICIDE AND RODENTICIDE ACT FOR ECONOMIC POISON REGISTERED UNDER NO. 1023

Botran is a fungicide developed specifically for the control of fruit rots. It controls *Rhizopus* rot, (soft rot or wet rot); *Monilinia*, (brown rot); and *Botrytis* rot, (gray mold).

Botran can protect your crop against these costly diseases before harvest, during picking, in storage and transit and in the store. This protection helps you turn more of your crop into cash.

Botran is registered for pre-harvest use on apricots, blackberries, boysenberries, red raspberries, grapes, nectarines, peaches, plums and prunes, and sweet cherries. Botran can be applied postharvest as a spray on sweet cherries and as a spray, dip or in a hydrocooler on peaches. Information covering uses of Botran on vegetable crops is available in a separate folder.

Causes of Fruit Rots

Monilinia (brown rot) is caused by a fungus that can attack blossoms, twigs and fruit. When it attacks blossoms, the symptoms are called blossom blight. During summer months the fungus can enter ripe fruit. When moist conditions prevail, brown rot can spre: d rapidly through an orchard.

Rhizopus rot (soft rot or wet rot) is caused by a fungus that is ever present in the orchard. It enters the fruit through wounds or bruises on the skin. Often times the infection begins when fruit receive injuries during picking, handling and grad-

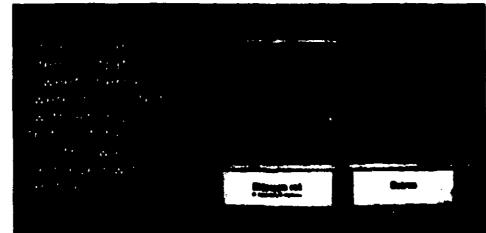
ing operations. Further development and spread of Rhizopus occurs during transit and marketing.

Betrytis rot (gray mold) can also attack the blossoms, twigs and fruit. It can cover an entire plant and during moist periods it spreads rapidly to other plants. This fungus attacks fruits both in the field and after harvest.

How Botran Protects

Botran protects fruit in two ways. First, it helps prevent the initial infection by inhibiting spore germination and suppressing the mycelial growth of the fungus. Second, Botran checks the spread of infection from diseased to healthy fruit. Applications close to harvest or post-harvest treatments protect the fruit from rots in storage and transit and on the shelf.





Availability

Botran is available as a 75% wettable powder in 4and 50-pound bags for pre- and post-harvest application. A 50% wettable powder is also available in 3-pound bags for post-harvest use. Local formulators have Botran dust in areas where this formulation is applicable.

How to Use Botran

Mix recommended amount of Botran as a slurry in a bucket. Fill spray tank ¼ to ⅓ full with water. Pour Botran slurry through screen onto surface of water in spray tank. Add balance of water to fill tank. Keep agitator running during filling and spraying operations. Do not allow mixture to stand.

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Use Botran 75w in sprays according to label directions in full-coverage dilute sprays unless otherwise specified. Sprays should be directed uniformly to all parts of plant and gallonage increased according to size of plants and density of foliage. Low-gallonage or airblast sprayers may be used by adjusting the mixing rate.

Botran 75w is not recommended for aerial application. Contact your local formulator for Botran dust.

Facts About Botran

Botran does not discolor skinned areas of fruit when used as directed. It has excellent wetting and spreading properties. Botran is recommended in key state spray schedules. Botran is a fungicide developed specifically for the control of fruit rots. It controls Rhizopus rot, (soft rot or wet rot); Monilinia, (brown rot); and Botrytis rot, (gray mold).

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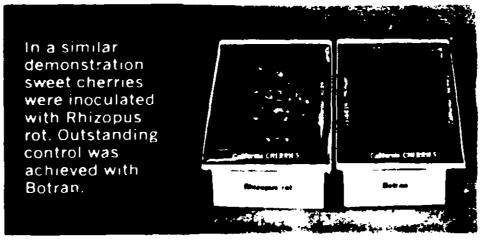
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Harmful if swallowed. Avoid inhalation of dust or spray mist. Avoid contact with skin and eyes. In case of contact, remove contaminated clothing and wash skin with soap and water; for eyes, flush with water and call a physician.

Precaution

Toxic to fish. Do not contaminate water by cleaning of equipment or disposal of waste or containers. Do not use on germinating seeds or annual seedlings except as suggested. Do not feed treated forage to livestock. A variety of extreme environmental conditions may have effects on fungicide treatments. The grower should watch to that the treatment is working and in case or the control should take appropriate measures.

Compatibility

Botran is compatible with wettable powder formulations of captan, zineb, DDT, Guthion, parathion, carbaryl and Thiodan. Normally, Botran can be mixed with other fungicides, insecticides, or defoliants formulated as wettable powders. However, combination sprays of Botran and miscible oil formulations of insecticides, particularly organic phosphorous compounds may cause plant injury. It is suggested that such combinations be used on a small number of plants before treating large areas.

Important—Read Before Use: By using this product user accepts the following conditions, warranty, disclaimer of warranties and limitations of liability:

Conditions: The directions for use of this product are believed to be adequate and should be followed carefully. However, because of extreme weather and soil conditions, manner of use and other factors beyond TUCO's control, it is impossible for TUCO to eliminate all risks associated with use of this product. As a result, crop injury or ineffectiveness is always possible.

Warranty and Disclaimer of Warranties: TUCO warrants that this material conforms to the chemical description on the label and is reasonably fit for use under the directions and conditions on this label. TUCO AND SELLER MAKE NO OTHER EXPRESS OR IMPLIED WARRANTY OF FITNESS, MERCHANTABILITY OR OTHERWISE.

Limitations of Liability: The liability of TUCO or Seller for damages arising from the use of this product is limited to the replacement cost of the product used and shall not include any consequential damages such as loss of profits or other values.

No Changes Authorized: No one (other than an authorized agent of TUCO) is authorized to make any other warranty, or change the above conditions, disclaimer or limitations and then only if in writing and with a specific reference to this label.

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Division of the upleh company / Kalanatod, Michigan
PRINTED IN U.S.A.

C-1356 MARCH, 1966

Fruit Creps Field Applications

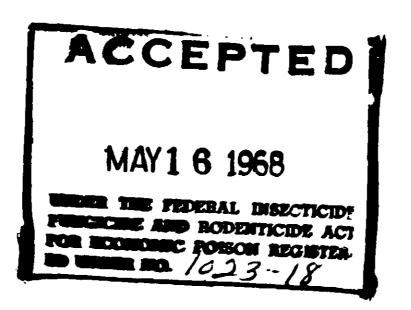
Crop	Disease	Botran 75w Dosage lbs. per 100 gal. of water	Botran 6% dust ibs. per acre	Use
Apricot	Fruit decay Monilinia Brown rot Rhizopus rot	11/3	50	Apply 10 days and 1 day prior to harvest. Allow one day between application and harvest.
Blackberry Boysenberry Raspberry (red)	Fruit decay Botrytis rot	143	50	Use a maximum of 4 applications. Begin applications just prior to bloom and continue at 10-day intervals. Do not use later than 7 days before harvest.
Limit Use to Pac	ific Northwest Only	' .		
Grape	Bunch rot Botrytis rot Storage rot	11/3	30	Apply Botran 75w spray soon after shatter. Use 200 gallons per acre. Follow with applications of Botran dust after cluster tightening. Repeat dust application at two-week intervals. Allow one day before last application and harvest. NOTE: If combining Botran 75w spray with gibberellin, use with last gibberellin application.
Peach and	Blossom blight	11/3	60	Apply at pink bud and full bloom.
Nectarine	Fruit decay Monilinia Brown rot	11/3	60	Apply 18 days, 10 days and 1 day prior to harvest. Allow one day between application and harvest.
	Rhizopus rot			When combining with captan, use 1-11/3 pounds BOTRAN 75w to 1-2 pounds captan 50w or equivalent per 100 gallons of water as recommended.
Plum and Prune	Blossom blight Monilinia Brown rot	11/3		Apply at popcorn and full bloom.
Sweet Cherry	Blossom blight Monilinia	11/3	50	Apply at popcorn, bloom, full bloom and petal fall.
	Fruit decay	•••		Apply 10 days and 1 day prior to harvest.
	Monilinia Brown rot Rhizopus rot	11/3	50	When combining with captan, use 1-11/3 pounds BOTRAN 75w to 1-2 pounds captan 50w or equivalent per 100 gallons of water as recommended.

Fruit Creps Post-harvest Applications

Crop	Disease	Dosage lbs. per 100 gal. of water	dosage lbs. per 100 gal. of water	Us
Peaches	Post-harvest decay Rhizopus rot Botrytis rot	1	11/2	Sp Will Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp Sp
Sweet Cherries	Post-harvest decay Rhizopus rot	11/3	2	Spi Do

Fruit Creps Post-harvest Applications

Crop	Disease	Dosage ibs. per 100 gal. of water		Use
Peaches	Post-harvest decay Rhizopus rot Botrytis rot	1	11/2	Spray or dip: Immediately after picking spray or dip peaches with suspension of BOTRAN. Do not recirculate used spray suspension.
				Processing line operations: BOTRAN is most effective when applied during or after the defuzzing process, either by brushes, spray or in the hydrocooler.
				Brushes—Apply BOTRAN to the brush with traversing feeder nozzle capable of metering approximately 10 gallons of BOTRAN suspension per hour with the valve completely open. Agitate the spray suspension. Unused suspension that drips from the brush should be caught in a drain tray and discarded.
				Spray—Direct a mist spray down upon the rotating peaches. Use pressures between 20-25 psi with delivery system of approximately 45 gallons per hour. TJ80 nozzles are suggested. Agitate the spray suspension. Collect spray run-off in a drain tray and discard.
				Hydrocooler: As volume decreases, make up to original volume by adding BOTRAN 75w suspension of 1 lb. per 100 gal. Drain and flush daily. Do not use antifoam agent.
Sweet Cherries	Post-harvest decay Rhizopus rot	11/3	2	Spray cherries, while sorting, with a suspension of BOTRAN. Do not recirculate used spray suspension.



Botran

An effective fungicide helps you turn more of your fruit into cash



TUCO

Botran is a fungicide developed specifically for the control of certain vegetable crop diseases. It is recommended for the control of blights, rots and molds caused by Botrytis, Rhizopus and Sclerotinia fungi. The common names for these fungus diseases are listed by crop in the application tables.

Botran can protect your crop against these costly diseases in the field, during harvest, in storage and transit and in the store. This protection helps you turn more of your crop into cash.

Botran is registered for pre-harvest use on celery, cucumbers, Irish potatoes, lettuce, onions and garlic, rhubarb, snap beans and tomatoes. Post-harvest use is limited to dips and sprays on carrots and sweet potatoes. Information covering uses of Botran on fruit crops is available in a separate folder.

Importance of Disease Control

Fungus diseases cause growers to lose millions of dollars before market each year. Wind, rain and equipment help spread fungus diseases in the field. Once a disease becomes established, the entire market value of a crop can be destroyed.

Fungus diseases often attack produce during storage and transit. Usually a disease starts when the vegetables are injured during picking, handling and grading operations. When diseased and healthy produce are in direct contact in shipping crates, a mold or rot can spread rapidly. To protect your profits disease incidence should be held to a minimum.

Liow Botran Protects

Botran protects vegetable crops in two ways. First, it prevents the initial infection by inhibiting spore germination and suppressing the mycelial growth of the fungus. Second, Botran checks the spread of infection from disease to healthy plants or produce. Applications close to harvest or post-harvest treatments protect the vegetables from rots and molds in storage and transit and on the shelf.

Availability

Botran is available as a 75% wettable powder in 4and 50-pound bags for pre- and post-harvest application. A 50% wettable powder is also available in 3-pound bags for post-harvest use. Local formula-





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Use Botran 75w sprays according to label directions in full-coverage dilute sprays unless otherwise specified. Sprays should be directed uniformly to all parts of plant and gallonage increased according to size of plants and density of foliage. Low-gallonage or airblast sprayers may be used by adjusting the mixing rate.

Botran 75w is not recommended for aerial application. Contact your local formulator for Botran dust.

Facts About Botran

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Warning: Keep out of the reach of children.

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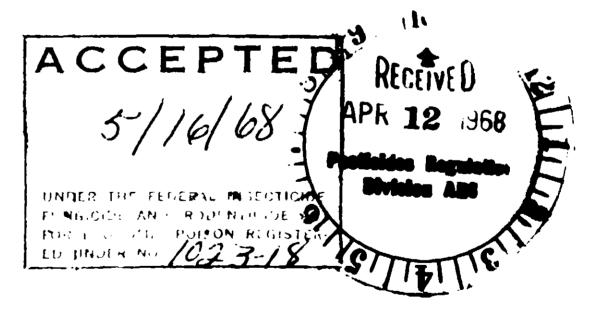
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Limitations of Liability: The liability of TUCO or Seller for damages arising from the use of this product is limited to the replacement cost of the product used and shall not include any consequential damages such as loss of profits or other values.

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TUCO PRODUCTS COMPANY DIVISION OF THE UPJOHN COMPANY / KALAMAZOO, MICHIGAN

Vegetable Crops Pre-Harvest Application

Disease

Crop

Celery	Pink rot Sclerotinia sclerotiorum	2 pounds per acre		Begin application when disease is anticipated or approx. 10 weeks prior to harvest. Repeat at 7-day intervals in summer or 14-day intervals in fall and winter. Apply 100 gals. per acre. Do not apply within 7 days of harvest.
Cucumber (greenhouse)	White mold Sclerotinia sclerotiorum	11/3 pounds per 100 gal. of water		Apply to diseased areas of plants. Additional applications may be required after 14 days.
Irish Potato	Botrytis blight White mold Sclerotinia sclerotiorum	2 pounds per acre		Apply 100 gallons per acre beginning at layby. Continue at 10- to 14-day intervals. Do not apply within 14 days of harvest. Do not feed treated potatoes to livestock. LIMIT USE TO MICHIGAN ONLY.
Lettuce (leaf only)	Blight Botrytis rot (greenhouse)	2 ² / ₃ pounds per acre	30	Apply 100 gallons of spray mixture per acre 7 days following transplanting. Repeat application when plants are half mature. Do not apply to wilted plants or seedlings. Do not use later than 14 days before harvest.
(head)	Wilt Botrytis rot Sclerotinia wilt (field)	22/3 pounds per acre	30	Apply first application at thinning. Repeat application 7 days later. Use 100 gallons per acre. Do not use later than 14 days before harvest.
Tomato	Stem canker Botrytis (greenhouse)	1 pound per 100 gal. of wate	er	Spray stem of plant from ground level up to a height of 18 to 24 inches. Repeat weekly or as necessary. Seedlings or newly set transplants may be injured by drenching.
Onion White rot 32-40* 250-400** and Sclerotium pounds per pounds per Garlic acre broadcast acre or per 43,560 linear feet of furrow. Note: Plow to 8 inches and cross-disc BOTRAN treated area prior to seeding sensitive follow-up crops such as lettuce. Do not plant spinach as follow- up crop in treated soil. * Use 6-10 pounds per acre in North Central States. **Use 90-130 pounds per acre in North Central States.			pounds per acre BOTRAN ollow-up s follow- ates.	Direct seeding—mix (broadcast-incorporate) BOTRAN in top 1½ inches of soil 1-2 weeks before onions are seeded. Planting sets or buus—In Furrow: Use low pressure (30 to 40 psi) spray equipment. Use 50-mesh or coarser screens. Center the front nozzle on the furrow so that spray strikes the soil around the sets or buds and the rear nozzle sprays the covering soil as it fills the furrow. Broadcast: Use 100 gallons per acre for broadcast treatment. Do not exceed 40 pounds per acre broadcast.
Rhubarb (hot house)	Botrytis leaf rot	1½ pounds per 100 gal.		Begin applications when first buds emerge from crowns Repeat at weekly intervals. Do not use later than 3 days before harvest.
Snap Bean	White mold Sclerotinia sclerotiorum (Sclero- tiniose)	4 pounds per acre (pole varieties) 3 pounds per acre (bush varieties)	varieties)	Begin applications when disease is anticipated and continue at 7-day intervals during periods favorable to development of disease. Use 100 gallons (pole varieties) and 75 gallons (bush varieties) per acre. Do not apply within 2 days of any harvest. Do not feed treated foliage to livestock.

Botran 6% dust lbs.

per acre

Use

Botran 75w

dosage*

Vegetable Crops Post-harvest Application

Сгор	Disease	Botran 75w dosage lbs. per 100 gal. of water	Botran 50w dosage lbs. per 100 gal. of water	U
Carrot	Post-harvest decay Sclerotinia sclerotiorum (dip)	1	11/2	D no to A
Sweet Polato	Post-harvest decay Rhizopus rot (spray)	1	11/2	Si di cl ci gi 75
	(dip)	1	11/2	B T so b

^{*} Use specified amount of BOTRAN 75w per 100 gallons of water (unless otherwise specified) in full coverage sprays in conventional sprayers or equivalent amount in concentrate or aerial equipment.

Vegetable Crops Post-harvest Application

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Crop	Disease	Botran 75w dosage lbs. per 100 gal. of water	Botran 50w dosage lbs. per 100 gal. of water	Use
Carrot	Post-harvest decay Sclerotinia sclerotiorum (dip)	1	11/2	Dip carrots for 10 seconds in well agitated suspension. Do not rinse after treatment. Add ½ pound BOTRAN 50w or 75w to 100 gal. of dip suspension after 500 bushels are treated. After each 1,000 bushels treated, drain and flush tank. Refill with fresh dip suspension.
Sweet Potato	Post-harvest decay Rhizopus rot (spray)	1	11/2	Spray, using 8001 fan-shaped nozzle at 50 to 75 psi immediately after washing while the potatoes are conveyed on chain rollers or belts. Do not rinse after treatment. In recirculating systems, as volume decreases, make up to original volume with suspension equivalent to 1 lb. BOTRAN 75w per 100 gal. of water. Where black rot is a problem, do not recirculate used spray suspension.
	(dip)	1	11/2	Dip roots for 10 to 15 seconds in well agitated suspension of BOTRAN. Do not rinse after treatment. Add 34 pound BOTRAN 50w or 1/2 pound BOTRAN 75w to 100 gallons of treating solution after 500 bushels are treated. After each 1,000 bushels treated, drain and flush tank. Refill with fresh dip suspension.

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FOR ECONOMIC POISON REGISTER.

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