

GROUP	<b>M</b>	FUNGICIDE
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**KUMULUS® DF**

**WATER DISPERSIBLE GRANULAR FUNGICIDE AND ACARICIDE**

For the control of fungal diseases and rust mites in apples, pears, peaches, plums, sweet and sour cherries, grapes and greenhouse cucumbers; for the control of grape erineum mite in grapes; for the control of powdery mildew on peas; and for the control of *Entomosporium* leaf and berry spot on Saskatoon berries.

**COMMERCIAL (AGRICULTURAL)**

**GUARANTEE:** Sulphur ..... 80%

**REGISTRATION NO. 18836**

**PEST CONTROL PRODUCTS ACT**

**IN CASE OF EMERGENCY ENDANGERING LIFE OR PROPERTY  
INVOLVING THIS PRODUCT, CALL DAY OR NIGHT  
1-800-454-2673**

**READ ENTIRE LABEL BEFORE USING.  
KEEP OUT OF REACH OF CHILDREN.**

**NET CONTENTS:** 25 kg

BASF Canada Inc.  
345 Carlingview Drive  
Toronto, Ontario  
M9W 6N9  
1-877-371-2273

**KUMULUS® DF** is a registered trademark of BASF AG, used under license by BASF Canada Inc.

## PRECAUTIONS

1. **KEEP OUT OF REACH OF CHILDREN.**
2. Do not take internally.
3. Avoid inhalation of vapour, dust, or spray mist and contact with eyes, skin or clothing.
4. Wash thoroughly after handling and before eating, drinking or smoking.
5. Wear goggles or a face shield, chemical-resistant gloves, a hat, a long-sleeved shirt, long pants and rubber boots during mixing/loading, application, clean-up and repair activities. A NIOSH-approved respirator is also required in greenhouses.
6. If clothing becomes contaminated, remove and wash separate from household laundry before reuse.
7. Clean spray equipment thoroughly after use.
8. Do not contaminate domestic or irrigation water, lakes, streams or ponds by the cleaning of equipment or the disposal of wastes.
9. Do not enter or allow workers to enter into treated areas until 24 hours after application.

If this pest control product is to be used on a commodity that may be exported to the U.S. and you require information on acceptable residue levels in the U.S., visit CropLife Canada's web site at: [www.croplife.ca](http://www.croplife.ca)

## FIRST AID INSTRUCTIONS

**IF IN EYES:** Hold eye open and rinse slowly and gently with water for 15–20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control centre or doctor for treatment advice.

**IF ON SKIN OR CLOTHING :** Take off contaminated clothing. Rinse skin immediately with plenty of water for 15–20 minutes. Call a poison control centre or doctor for treatment advice.

**IF SWALLOWED:** Call a poison control centre or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control centre or doctor. Do not give anything by mouth to an unconscious person.

**IF INHALED:** Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably by mouth-to-mouth, if possible. Call a poison control centre or doctor for further treatment advice.

Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

## **TOXICOLOGICAL INFORMATION**

Treat symptomatically.

## **STORAGE**

1. Store in original, tightly-closed container.
2. Do not ship or store near food, feed, seed or fertilizers.
3. Store in cool, dry, locked, well-ventilated area without floor drain.
4. Herbicides should be shipped or stored separate from other pesticides to avoid cross-contamination.
5. Keep away from heat, fire and sparks.

## **DISPOSAL**

1. Triple- or pressure-rinse the empty container. Add the rinsings to the spray mixture in the tank.
2. Follow provincial instructions for any required additional cleaning of the container prior to its disposal.
3. Make the empty container unsuitable for further use.
4. Dispose of the container in accordance with provincial requirements.
5. For information on disposal of unused, unwanted product, contact the manufacturer or the provincial regulatory agency. Contact the manufacturer and the provincial regulatory agency in case of a spill, and for clean-up of spills.

**NOTICE TO USER**

This pest control product is to be used only in accordance with the directions on the label. It is an offence under the Pest Control Products Act to use this product in a way that is inconsistent with the directions on the label. The user assumes the risk to persons or property that arises from any such use of this product.

**POLYRAM® DF** is a registered trademark of BASF AG, used under license by BASF Canada Inc.

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## **GENERAL INFORMATION**

**KUMULUS DF** is a water dispersible granular fungicide and acaricide that can be used effectively on a variety of fruits. **KUMULUS DF** is also a protectant fungicide that can be used for the control of powdery mildew on peas. However, applications of **KUMULUS DF** made after the onset of disease symptoms are less effective.

## **DIRECTIONS FOR USE**

Apply **KUMULUS DF** for fruits and orchard crops in water volumes of up to 3000 L/ha. Water volume will vary according to size of crop and foliage cover required. Use sufficient water volume to thoroughly cover all foliage.

For peas, apply **KUMULUS DF** in a minimum of 100 L/ha. Higher water volumes may be required later in growing season.

For Saskatoon berries, apply **KUMULUS DF** in 100 L water/ha by ground application, a pressurized back pack sprayer.

Do not apply more than 8 applications per season.

Do not apply during periods of dead calm or when winds are gusty.

**For airblast application:** Do not direct spray above plants to be treated. Turn off outward pointing nozzles at row ends and outer rows. Do not apply when wind speed is greater than 16 km/h at the application site as measured outside of the treatment area on the upwind side.

**Do not apply by air.**

Follow provincial recommendations for proper timing and water volumes. The following table is based on a water volume application rate of 3000 L/ha. Adjust rate per hectare according to the water volume used.

## APPLICATION TABLE

<b>Apples</b> <b>Pears</b> Powdery mildew Scab  Rust Mites	750 g/100 L water (or 22.5 kg/ha)	Apply in regular protective schedule from green tip up to and including first cover spray.
	400-500 g/100 L water (12-15 kg/ha)	Apply in later cover sprays, and adjust rate depending on (mildew severity and temperature. Do not apply later than 1 day before harvest.
	200 g/100 L water (or 6.0 kg/ha)	Apply in summer sprays. Do not apply later than 1 day before harvest.
<b>Peaches</b> Brown rot Leaf spot Scab Powdery mildew	750 g/100 L water (or 22.5 kg/ha)	Apply in pink, bloom, shuck, cover and pre-harvest sprays. Apply just before picking and repeat between pickings if weather is wet.
	375-400 g/100 L water (or 11.3 kg-12.0 kg/ha)	Apply at husk-fall and repeat in 10 - 14 days.
<b>Plums</b> Brown rot Leaf spot	750 g/100 L water (or 22.5 kg/ha)	Apply in pink, bloom, shuck, cover and pre-harvest sprays. Apply just before picking and repeat between pickings if weather is wet.
<b>Sweet Cherries</b> Brown rot	750 g/100 L water (or 22.5 kg/ha)	Apply in a regular spray program from the bloom stage until just before harvest. Do not apply later than 1 day before harvest.
<b>Sour Cherries</b> Brown rot  Powdery mildew  Rust mites	750 g/100 L water (or 22.5 kg/ha)	Apply at bloom stage only. Do not apply later than 1 day before harvest.
	400 g/100 L water (or 12.0 kg/ha)	Apply in first, second and third cover sprays. Do not apply later than 1 day before harvest.
	200 g/100 L water (or 6.0 kg/ha)	Apply in summer sprays. Do not apply later than 1 day before harvest.

### Application Table (Cont'd)

<b>Grapes</b> Powdery mildew	420 g/100 L water (or 12.6 kg/ha)	Apply at first sign of mildew and repeat after 10 days on Agawan, Seneca and Seibel varieties. Do not use on Concord, Foch, de Chaunac and Van Buren varieties.
Grape erineum mite	3.4 kg/ha	Apply at pre-bloom immediately the first evidence of erineum development on the leaves and again at mid-season.
<p>Do not use on Concord, Foch, de Chaunac and Van Buren varieties.</p> <p>Table grapes - Do not apply later than 1 day before harvest.</p> <p>Wine grapes - Do not apply later than 21 days before harvest.</p>		
<b>Saskatoon berries</b> <i>Entomosporium</i> leaf and berry spot	7.5 kg/ha	Apply first at flower bud break and at 10-14 day intervals while disease risk persists. Do not apply later than 1 day before harvest.
<b>Cucumbers (greenhouse)</b> Powdery mildew	120 g/100 L water	Apply once every 5 days as required. Do not apply later than one day prior to harvest.
<b>Peas</b> Powdery mildew	1.5 kg/ha	Spray at first appearance of disease and repeat at 7-10 day intervals as necessary. <b>Note:</b> Do not apply later than 1 day before harvest.

### ENVIRONMENTAL HAZARDS

Do not apply directly to aquatic habitats (such as lakes, rivers, sloughs, ponds, coulees, prairie potholes, creeks, marshes, streams, reservoirs, and wetlands) and estuarine/marine habitats. Do not contaminate water by cleaning of equipment or disposing of waste.



### Buffer Zones Required for the Protection of Aquatic Habitats

The following table specifies the buffer zones that are required between the point of direct application and the closest downwind edge of sensitive freshwater habitats (such as lakes, rivers, sloughs, ponds, coulees, prairie potholes, creeks, marshes, streams, reservoirs and wetlands) and estuarine/marine habitats.

Application Method	Crop	Buzzer Zone (Metres) Required for Protection of Aquatic Habitats
Field sprayer	Pea	0
Airblast	Apple Berries, Saskatoon Cherry, sour Cherry, sweet Grape Peach Pear Plum	5

### MIXING

1. Fill spray tank with clean water.
2. Add the required amount of **KUMULUS DF**.
3. Start agitation and continue until spraying is completed.

When tank mixtures are to be used, each product should be pre-diluted first and added separately to the spray tank, taking due note of any instructions given as to order of mixing.

### MIXTURES WITH OTHER SPRAY CHEMICALS

**KUMULUS DF** is miscible and compatible with **POLYRAM DF**. Do not mix with dinitro compounds, tetradifon or oils.

## RESTRICTIONS AND LIMITATIONS

Do not apply if temperature is above 27<sup>0</sup>C (in shade) and high humidity prevails, or if any of the aforementioned conditions are expected within 3 days after the treatment.

Do not apply under intense sunshine.

Do not use **KUMULUS DF** for any crop not listed on the full label.

Do not use **KUMULUS DF** with any registered pesticide not specifically recommended on the full label.

Do not apply **KUMULUS DF** when rain or night frost is expected.

Crops are most sensitive during the flowering period.

Treat when conditions are such that spray will dry on plants.

Do not use on Concord grapes and other sulphur-sensitive varieties of grapes.

Caution is advised in viticulture especially when using mixtures with copper compounds.

Avoid spray drift on neighbouring crops.

Sulphur is phytotoxic to some plants including apricots, Anjou and Cornice pears, cranberries, some cucurbit varieties and spinach.

Do not use within 30 days of an oil spray.

## RESISTANCE-MANAGEMENT RECOMMENDATIONS

For resistance management, please note that **KUMULUS DF** contains a Group M fungicide. Any fungal population may contain individuals naturally resistant to **KUMULUS DF** and other Group M fungicides. A gradual or total loss of pest control may occur over time if these fungicides are used repeatedly in the same fields. Other resistance mechanisms that are not linked to site of action but specific for individual chemicals, such as enhanced metabolism, may also exist. Appropriate resistance-management strategies should be followed.

To delay fungicide resistance:

- Where possible, rotate the use of **KUMULUS DF** or other Group M fungicides with different groups that control the same pathogens.

- Use tank mixtures with fungicides from a different group when such use is permitted.
- Fungicide use should be based on an IPM program that includes scouting, historical information related to pesticide use and crop rotation and considers cultural, biological and other chemical control practices.
- Monitor treated fungal populations for resistance development.
- If disease continues to progress after treatment with this product, do not increase the use rate. Discontinue use of this product, and switch to another fungicide with a different target site of action, if available.
- Contact your local extension specialist or certified crop advisors for any additional pesticide resistance-management and/or IPM recommendations for specific crops and pathogens.
- For further information and to report suspected resistance, contact BASF at 1-877-371-2273.

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