

2019-6159  
2020-12-04

Container label

**MANIPULATOR™ 620**

Solution

PLANT GROWTH REGULATOR

For treatment of spring, durum and winter wheat, spring and winter barley, and spring and winter oats to manipulate apical dominance and produce shorter, thicker, stronger stems for improved lodging resistance.

COMMERCIAL (AGRICULTURAL)

ACTIVE INGREDIENT: chlormequat chloride 620 g/L

REGISTRATION NO. 31462 PEST CONTROL PRODUCTS ACT

READ THE ENTIRE LABEL AND BROCHURE BEFORE USING  
KEEP OUT OF REACH OF CHILDREN



DANGER

POISON

NET CONTENTS: 1- 1050 L

Taminco US LLC. 200 S. Wilcox Drive Kingsport, Tennessee 37600 USA 1 800 223-3258	Distributed by: Belchim Crop Protection Canada 104 Cooper Dr., Unit 3, Guelph, ON N1C 0A4 1-866-613-3336
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## **PRECAUTIONS**

**KEEP OUT OF REACH OF CHILDREN.** Fatal or poisonous if swallowed. Do not take internally. Avoid inhalation of vapour, dust, or spray mist and contact with eyes, skin or clothing. Wash thoroughly after handling and before eating, drinking or smoking. Wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, application, clean-up and repair. Gloves are not required during application within a closed cab and/or cockpit. If clothing becomes contaminated, remove and wash separately from household laundry before reuse. Do not contaminate domestic or irrigation water, lakes, streams or ponds by the cleaning of equipment or the disposal of wastes. Do not enter or allow worker entry into treated areas for 12 hours following application. Do not apply where runoff or erosion is likely to occur. Do not apply when environmental conditions may cause drift from treated areas. Clean spray equipment thoroughly after use.

Apply only to agricultural crops when the potential for drift to areas of human habitation and human activity, such as houses, cottages, schools and recreational areas, is minimal. Take into consideration wind speed, wind direction, temperature inversions, application equipment, and sprayer settings.

## **ENVIRONMENTAL PRECAUTIONS**

Observe spray buffer zones specified under DIRECTIONS FOR USE.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil or clay.

Avoid application when heavy rain is forecast.

Contamination of aquatic areas as a result of runoff may be reduced by including a vegetative strip between the treated area and the edge of the water body.

## **FIRST AID**

**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 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 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.

**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.

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

*IN CASE OF EMERGENCY INVOLVING A POISONING OR MAJOR SPILL,  
CALL 1800-424-9300*

### **TOXICOLOGICAL INFORMATION**

Treat symptomatically.

### **STORAGE**

Keep in original container, tightly closed, during storage. Store this product away from food and feed. Do not ship or store near food, feed, seed or fertilizers. Store in cool, dry, locked, well-ventilated area without floor drain. Herbicides should be shipped or stored separately from other pesticides to avoid cross-contamination. Protect from freezing.

### **DISPOSAL**

DO NOT reuse this container for any other purpose. This is a recyclable container, and is to be disposed of at a container collection site. Contact your local distributor/dealer or municipality for the location of the nearest collection site. Before taking the container to the collection site:

1. Triple- or pressure-rinse the empty container. Dispose of the rinsings in accordance with provincial requirements.
2. Make the empty, rinsed container unsuitable for further use.

If there is no container collection site in your area, dispose of the container in accordance with provincial requirements.

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.

Pamphlet label

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200 S. Wilcox Drive  
Kingsport, Tennessee 37600 USA  
1 800 223-3258

Distributed by:  
Belchim Crop Protection Canada  
104 Cooper Dr., Unit 3,  
Guelph, ON N1C 0A4  
1-866-613-3336

## **DIRECTIONS FOR USE**

As this product is not registered for the control of pests in aquatic systems, **DO NOT** use to control aquatic pests.

**DO NOT** contaminate irrigation or drinking water supplies or aquatic habitats by cleaning of equipment or disposal of wastes.

Shake well before using.

### **Field sprayer application**

**DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE) medium classification. Boom height must be 60 cm or less above the crop or ground.

### **Aerial Application**

**DO NOT** apply during periods of dead calm. Avoid application of this product when winds are gusty. **DO NOT** apply when wind speed is greater than 16 km/h at flying height at the site of application. **DO NOT** apply with spray droplets smaller than the American Society of Agricultural Engineers (ASAE S572.1) medium classification. Reduce drift caused by turbulent wingtip vortices. Nozzle distribution along the spray boom length **MUST NOT** exceed 65% of the wing- or rotor-span.

Apply only by fixed-wing or rotary aircraft equipment which has been functionally and operationally calibrated for the atmospheric conditions of the area and the application rates and conditions of this label.

Label rates, conditions and precautions are product specific. Read and understand the entire label before opening this product. Apply only at the rate recommended for aerial application on this label. Where no rate for aerial application appears for the specific use, this product cannot be applied by any type of aerial equipment.

Ensure uniform application. To avoid streaked, uneven or overlapped application, use appropriate marking devices.

### **Use Precautions**

Apply only when meteorological conditions at the treatment site allow for complete and even crop coverage. Apply only under conditions of good practice specific to aerial application as outlined in the National Aerial Pesticide Application Manual, developed by the Federal/Provincial/Territorial Committee on Pest Management and Pesticides.

Do not apply to any body of water. Avoid drifting of spray onto any body of water or other non-target areas. Specified spray buffer zones should be observed.

Coarse sprays are less likely to drift, therefore, avoid combinations of pressure and nozzle type that will result in fine particles (mist). Do not apply during periods of dead calm or when wind velocity and direction pose a risk of spray drift. Do not spray when the wind is blowing towards a nearby sensitive crop, garden, terrestrial habitat (such as shelter-belt) or aquatic habitat.

## Operator Precautions

Do not allow the pilot to mix chemicals to be loaded onto the aircraft. Loading of premixed chemicals with a closed system is permitted.

It is desirable that the pilot have communication capabilities at each treatment site at the time of application.

The field crew and the mixer/loaders must wear a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, clean-up and repair. Follow the more stringent label precautions in cases where the operator precautions exceed the generic label recommendations on the existing ground boom label.

All personnel on the job site must wash hands and face thoroughly before eating and drinking. Protective clothing, aircraft cockpit and vehicle cabs must be decontaminated regularly.

## Product Specific Precautions

Read and understand the entire label before opening this product. If you have questions, call Belchim Crop Protection Canada at 1-866-613-3336 or obtain technical advice from the distributor or your provincial agricultural representative. Application of this specific product must meet and/or conform to the following:

Volume: Apply the recommended rate in a minimum spray volume of 50 litres per hectare.

## Spray Buffer Zones

A spray buffer zone is NOT required for uses with hand-held application equipment permitted on this label.

The spray buffer zones specified in the table below are required between the point of direct application and the closest downwind edge of sensitive terrestrial habitats (such as grasslands, forested areas, shelter belts, woodlots, hedgerows, riparian areas and shrublands).

Method of Application	Crop	Spray buffer zones required for the protection of terrestrial habitat (m)	
Field Sprayer	Winter, Spring, and Durum Wheat Spring and Winter Barley Spring and Winter Oats	1	
Aerial	Wheat (winter, spring, and durum)	Fixed-wing	10
		Rotary-wing	10
	Barley (spring and winter), Oats (spring and winter)	Fixed-wing	15
		Rotary-wing	10

For tank mixes, consult the labels of the tank-mix partners and observe the largest (most restrictive) buffer zone of the products involved in the tank mixture and apply using the coarsest spray (ASAE) category indicated on the labels for those tank mix partners.

## GENERAL INFORMATION:

MANIPULATOR™ 620 is a plant growth regulator for use on spring, durum and winter wheat, spring and winter barley, and spring and winter oats between Zadoks Growth Stages (GS) 12 (the 2-leaf stage) to 39 (the flag leaf collar visible stage). Its influence on plant growth can improve resistance to lodging through reduced plant height, enhanced root structure and improved stem characteristics.

### **RATE & TIMING OF APPLICATION**

Apply Manipulator 620 when risk of lodging is high or when a high nitrogen fertilizer system is used.

### **Crop Specific Rates and Timing:**

#### **WINTER WHEAT**

Do not exceed a total of 1.8 L/ha of MANIPULATOR 620 on the winter wheat per year.

#### Single Application Technique:

Apply MANIPULATOR 620 at 1.8 L/ha as a single dose between GS31-39 (the 1-node stage to the flag leaf collar visible stage).

#### Split Application Technique:

Apply MANIPULATOR 620 at 1 L/ha between Zadoks GS 12 (the 2-leaf stage) and GS 30 (the beginning of stem elongation stage) followed by a second application of 0.8 L/ha between Zadoks GS 31-39 (the 1-node stage to the flag leaf collar visible stage).

#### **SPRING AND DURUM WHEAT**

Do not exceed a total of 1.8 L/ha of MANIPULATOR 620 on the spring and durum wheat per year.

#### Single Application Technique:

Apply MANIPULATOR 620 at 1.8 L/ha as a single dose between Zadoks GS31 to 32 (the 1- to 2-node stage). If applications are not possible at Zadoks GS 31 to 32 due to environmental or field conditions, do not apply later than GS 39.

#### Split Application Technique:

Apply MANIPULATOR 620 at 0.8 L/ha between Zadoks GS 12-30 (the 2-leaf stage to the beginning of stem elongation) followed by a second application of 1 L/ha MANIPULATOR 620 at Zadoks GS 31-32. If the second application is not possible at GS 31-32 due to environmental or field conditions, do not apply later than GS 39.

#### **BARLEY**

Do not exceed a total of 2.3 L/ha of MANIPULATOR 620 on the spring and winter barley per year.

#### Single Application Technique:

Apply MANIPULATOR 620 at 2.3 L/ha as a single dose between Zadoks GS30 to 32 (the start of stem elongation to the 2-node stage). If applications are not possible at Zadoks GS 30 to 32 due to environmental or field conditions, apply up to GS 39.

#### Split Application Technique:

Apply MANIPULATOR 620 at 1.15 L/ha between Zadoks GS 14 to GS 32 (the 4-leaf stage to the second node stage) followed by a second application of 1.15 L/ha MANIPULATOR 620 between Zadoks GS 32-39.

### **OAT**

Do not exceed a total of 2.3 L/ha of MANIPULATOR 620 on the spring and winter oats per year.

#### **Single Application Technique:**

Apply MANIPULATOR 620 at 2.3 L/ha as a single dose between Zadoks GS30 to 32 (the start of stem elongation to the 2-node stage). If applications are not possible at Zadoks GS 30 to 32 due to environmental or field conditions apply up to GS 39.

#### **Split Application Technique:**

Apply MANIPULATOR 620 at 1.15 L/ha between Zadoks GS 14 to GS 32 (the 4-leaf stage to the second node stage) followed by a second application of 1.15 L/ha MANIPULATOR 620 between Zadoks GS 32-39.

### **APPLICATION VOLUME**

Apply in sufficient water volume to obtain thorough coverage; a minimum spray volume of 100 L/ha and 50 L/ha is recommended for ground and aerial application, respectively.

### **APPLICATION CONDITIONS**

DO NOT apply MANIPULATOR 620 to crops under stress from waterlogging, drought or nutrient deficiency. In hot, dry weather a better result may be obtained from application in the early morning or evening.

### **CAUTION**

Although MANIPULATOR 620 may be applied under normal seasonal temperatures (down to 1°C) and ground conditions, DO NOT spray onto plants covered with frost. For optimal results, MANIPULATOR 620 requires two hours before rain or frost occurs. Do not allow MANIPULATOR 620 to drift onto neighbouring crops. Do not use in tank mixture with liquid nitrogen fertilizer. DO NOT apply later than GS39.

### **UNDERSOWN CROPS**

MANIPULATOR 620 may be used on crops under-sown with clovers and grasses.

### **VARIETAL RESPONSE**

Where varieties may be more or less prone to lodging under different fertility regimes and field conditions, establish the varietal response initially using a low rate. When a variety has a high risk of lodging use the full rate, a maximum 1.8 L/ha per year for wheat and 2.3 L/ha on barley and oats.

### **PRECAUTIONS**

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cockpit. If clothing becomes contaminated, remove and wash separately from household laundry before reuse. Do not contaminate domestic or irrigation water, lakes, streams or ponds by the cleaning of equipment or the disposal of wastes. Do not enter or allow worker entry into treated areas for 12 hours following application. Do not apply where runoff or erosion is likely to occur. Do not apply when environmental conditions may cause drift from treated areas. Clean spray equipment thoroughly after use.

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## **ENVIRONMENTAL PRECAUTIONS**

**TOXIC** to non-target terrestrial plants. Observe spray buffer zones specified under **DIRECTIONS FOR USE**.

The use of this chemical may result in contamination of groundwater particularly in areas where soils are permeable (e.g. sandy soil) and/or the depth to the water table is shallow.

To reduce runoff from treated areas into aquatic habitats avoid application to areas with a moderate to steep slope, compacted soil or clay.

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