

## **MODDUS®**

PLANT GROWTH REGULATOR

COMMERCIAL

MODDUS® is a micro-emulsion concentrate that will aid in the growth and lodging management of wheat, barley, and oats.

**ACTIVE INGREDIENT:**

Trinexapac-ethyl ..... 11.3%

**READ THE LABEL AND ATTACHED BOOKLET BEFORE USING**

**KEEP OUT OF REACH OF CHILDREN  
WARNING: EYE IRRITANT**

REGISTRATION NO.: **33930**  
PEST CONTROL PRODUCTS ACT

NET CONTENTS: **1 L-1000 L**

**Syngenta Canada Inc.**  
140 Research Lane, Research Park  
Guelph, ON N1G 4Z3  
Telephone: 1-877-964-3682

Label

## 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.

## FIRST AID

**IN CASE OF POISONING**, contact a physician or a poison control center **IMMEDIATELY**. Take container, label or product name and Pest Control Product Registration Number with you when seeking medical attention.

**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 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 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.

## TOXICOLOGICAL INFORMATION

There is no specific antidote if this product is ingested. Treat symptomatically. Do not induce emesis.

## PRECAUTIONS

KEEP OUT OF THE REACH OF CHILDREN.

HARMFUL IF SWALLOWED. Causes eye irritation. DO NOT get in eyes.

Avoid contact with skin. Wash with soap and water after handling, and before eating, drinking or smoking. Remove clothing immediately if pesticide gets inside. Wash contaminated clothing, separately from household laundry, before re-use. Do not wear contaminated shoes. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Apply only to agricultural crops when the potential for drift to areas of human habitation or areas of 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.

DO NOT enter or allow worker re-entry during the restrictive re-entry interval (REI) of 12 hours.

Do not apply when weather conditions favour drift from treated areas.

If this pest control product is to be used on a commodity that may be exported outside of Canada and you require information on acceptable residue levels in these countries, please contact Syngenta Canada Inc. at 1-87-SYNGENTA/1-877-964-3682.

## **PERSONAL PROTECTIVE EQUIPMENT (PPE)**

Wear coveralls over 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. In addition, wear protective eyewear (goggles or face shield) during mixing and loading.

## **ENVIRONMENTAL PRECAUTIONS**

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.

## **STORAGE**

Keep in original container, tightly closed, during storage. Store this product away from food or feed. Store in a cool, dry, well ventilated area, and out of the reach of children and animals.

## **SPILL CLEANUP**

Wear appropriate protective equipment (gloves, glasses, apron) when attempting to clean up the spill. If the container is leaking, secure leak and place the container into a drum or heavy gauge plastic bag. Contact Syngenta Canada Inc. (See EMERGENCY NUMBER) for further information.

For spills and leaks - contain the liquid with dikes of inert material (soil, clay, kitty litter, etc.). Absorb the spill onto inert material and shovel into a sealable waste container.

On hard surfaces - sprinkle spill area with detergent and scrub in a small quantity of water with a coarse broom. Let stand 10 minutes then absorb onto an inert material and shovel into the waste container.

On soil - remove the top 15 cm of soil in the spill area and replace with fresh soil. Dispose of all waste including scrub brush in accordance with provincial requirements.

## **DISPOSAL**

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.

### **CONTAINER DISPOSAL OR REFILLING:**

#### **For returnable containers**

**DO NOT** reuse this container for any other purpose. For disposal, this empty container may be returned to the point of purchase (distributor/dealer).

#### **For refillable containers**

For disposal, this container may be returned to the point of purchase (distributor/dealer). It must be refilled by the distributor/dealer with the same product. **DO NOT** reuse this container for any other purpose.

#### **For recyclable containers**

**DO NOT** reuse this container for any 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. Add the rinsings to the spray mixture in the tank.
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.

***IN CASE OF EMERGENCY INVOLVING A MAJOR SPILL, FIRE OR POISONING,  
CALL 1-800-327-8633 (FASTMED)***

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Pamphlet

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## **GENERAL INFORMATION**

MODDUS Plant Growth Regulator aids in the growth and lodging management of wheat, barley, and oats.

MODDUS Plant Growth Regulator reaches the growing point by foliar uptake. Field data has indicated that MODDUS Plant Growth Regulator is rainfast after 3 hrs.

Environmental conditions, crop management, and cultural practices that affect plant growth and vigour will influence the response of the crop to MODDUS Plant Growth Regulator applications.



NOTE: Due to risk of injury to the crop, avoid overlapping and do not apply to wheat, barley, or oats that are stressed, such as by low fertility, high temperatures, drought, frost or diseased or insect-damaged.

## **DIRECTIONS FOR USE**

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

Avoid contact with non-target plants or any body of water. Avoid drift to these sensitive habitats.

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

## **CROP TOLERANCE**

Plant tolerance has been found acceptable for all crops on the label, however, not all possible tank mix combinations have been tested under all conditions nor have all varieties been tested under all conditions. When possible, it is recommended to test the combinations on a small portion of the crop to ensure a phytotoxic response will not occur as a result of application.

## **GROUND APPLICATION**

Tank mixing:

It is important to check the physical compatibility of tank mixed pesticide products in a small volume prior to filling the sprayer. Check the compatibility of tank mixes containing Moddus using a jar test following the WALES mixing order with proportionate amounts of mix partners, and water, before mixing in the spray tank.

In some cases, tank mixing a pest control product, such as MODDUS, with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced efficacy or increased host crop injury. The user should contact Syngenta Canada Inc. at 1-877-964-3682 or [www.syngenta.ca](http://www.syngenta.ca) for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

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 (ASABE) category indicated on the labels for those tank mix partners.

## **MIXING INSTRUCTIONS**

1. Ensure that the sprayer interior is clean, then fill the spray tank with  $\frac{1}{2}$  the required amount of water and engage gentle agitation. Good agitation is indicated by a rippling or rolling action on the surface of the water.
2. Add any WG or DF formulation mix partners and agitate to ensure complete mixing.
3. Add any SE or SC formulation mix partners and agitate to ensure complete mixing.
4. Add MODDUS and agitate to ensure complete mixing.
5. Add any EC formulation mix partners and agitate to ensure complete mixing.
6. Fill the tank to  $\frac{3}{4}$  the required amount of water.

7. Add any solution (SN or SL) formulation mix partners and agitate to ensure complete mixing.
8. Finish filling the sprayer with water, maintaining good agitation.
9. After any break in spraying operations, agitate thoroughly before spraying again.
10. Spray the pesticide suspension the same day as mixing.
11. Do not mix, load or clean spray equipment where there is a potential to contaminate wells or aquatic systems.

When using chemical handling equipment to fill the sprayer, the following additional recommendations apply:

- WG and DF formulations are preferentially batch mixed.
- SC, SN, and SL formulations may be inducted or batch mixed.
- EC formulations are preferentially batch mixed.

## SPRAYER CLEAN-UP

### Before Spraying:

- Prior to using MODDUS, ensure that the spray tank, lines and filter are thoroughly clean.

### After Spraying:

- Thoroughly clean application equipment immediately after spraying. **DO NOT** allow MODDUS residue to dry within the spray tank
- When using tank mixes, consult the tank-mix partner label for additional clean-up instructions.
- The following recommendations are provided:
  1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water. Rinse with clean water. **DO NOT** clean the sprayer near desirable vegetation, wells or other water sources.
  2. Remove all nozzles and screens and wash separately.
  3. Dispose of all rinsate in accordance with provincial regulations.

## EQUIPMENT SPECIFIC INSTRUCTIONS

**Field sprayer application:** DO NOT apply during periods of dead calm. Avoid application of this product when winds are gusty. DO NOT apply spray droplets which are smaller than the American Society of Agricultural and Biological Engineers medium (classification ASABE Standard S-572.1). Boom height must be 60 cm or less above the crop or ground.

## SPRAYING INSTRUCTIONS

1. **Water Volume:** Apply in a minimum spray volume of 100 L/ha OR the volume given in the crop and pest specific instructions tabulated below, whichever is LARGER.
2. **Sprayer Agitation:** Use a jet agitator or liquid sparge tub which recirculates 10% or more of the tank per minute. **DO NOT** use an air sparger.
3. **Pump:** Screens should be used to protect the pump and prevent clogging. Use 16 mesh or *coarser* screens on the suction side of the pump. **DO NOT** place a screen in the recirculation line. Use 50 mesh or *coarser* screens between the pump and boom unless directed otherwise by the sprayer manufacturer.
4. **Spray Nozzles:** Use a hydraulic nozzle with 80° or 110° drift reducing flat fan (e.g. those with a pre-orifice or turbulence chamber) or air induction nozzles with up to 80 mesh

screens. **DO NOT** use flood type nozzles, controlled droplet application equipment, spray foils or hollow cone nozzles.

5. Pressure: As recommended by the nozzle manufacturer to achieve ASABE medium sized droplets.
6. Apply at uniform speed and avoid overlapping. Shut off spray boom while starting, turning, slowing or stopping to avoid potential crop injury from over application.

**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 and Biological Engineers (ASABE 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. When 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.

### **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.

All ground crew and the mixer/loaders must wear coveralls over a long-sleeved shirt, long pants, chemical-resistant gloves, socks and shoes during mixing, loading, clean-up and repair. In addition, wear protective eyewear (goggles or face shield) during mixing and loading.

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 Syngenta Canada Inc. at 1-877-964-3682 or [www.syngenta.ca](http://www.syngenta.ca) 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.

## SPRAYING INSTRUCTIONS

1. Water volume: Apply in a minimum spray volume of 50 L/ha aerial OR the volume given in the crop and pest specific instructions tabulated below, whichever is LARGER.
2. Spray Nozzles: Use only ASABE medium or coarse nozzles rated as delivering droplets of volume median diameter of 300 microns or greater.
3. Pressure: As recommended by the nozzle manufacturer to achieve ASABE coarse or medium sized droplets.
4. Ensure hopper agitation is engaged whenever possible during flight.

### Tank mixing:

It is important to check the physical compatibility of tank mixed pesticide products in a small volume prior to filling the sprayer. Check the compatibility of tank mixes containing MODDUS using a jar test with proportionate amounts of mix partners, and water, before mixing in the spray tank.

In some cases, tank mixing a pest control product, such as MODDUS, with another pest control product or a fertilizer can result in biological effects that could include, but are not limited to: reduced efficacy or increased host crop injury. The user should contact Syngenta Canada Inc. at 1-877-964-3682 or [www.syngenta.ca](http://www.syngenta.ca) for information before mixing any pesticide or fertilizer that is not specifically recommended on this label.

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 (ASABE) category indication on the labels for those tank mix partners.

## MIXING INSTRUCTIONS

Mixing this product directly in the aircraft hopper **IS NOT** recommended. The use of chemical handling or managing equipment to load the hopper **IS** recommended. This product **is not recommended for** induction into a hopper without additional carrier water. This product **MAY BE** batch mixed and pumped into the hopper. In all cases the chemical handling equipment and hopper interior must be clean prior to use.

**NOTE:** WG and DF formulations are preferentially batch mixed.

**NOTE:** SC, SN, and SL formulations may be inducted or batch mixed.

**NOTE:** EC formulations are preferentially batch mixed.

It is **NOT** recommended to combine solid (WG or DF) formulations with liquid tank mix partners within a single batch. Batch mix WG or DF formulations first, pump into the hopper, and then

add liquid tank mix partners by induction or as an additional batch mix. When tank mixing multiple products, follow the mixing order outlined below:

1. Pump water into the hopper to at least  $\frac{1}{4}$  to  $\frac{1}{2}$  of the desired spray volume. Engage hopper circulation, if possible.
2. Thoroughly batch mix any WG or DF formulation mix partners and agitate to ensure complete mixing. Pump into the hopper
3. Induct or thoroughly batch mix any SE or SC formulations.
4. Induct or thoroughly batch mix MODDUS and any EC formulation mix partners. EC formulations may be added to the batch from Step 3, if desired.
5. Induct or thoroughly batch mix any solution (SN or SL) formulation mix partners. SN/SL formulations may be added to the batch from Step 3, if desired.
6. Pump batch mixed SC, EC, and/or SN/SL products into the hopper.
7. Finish filling the hopper with water.
8. If it was not possible to engage hopper agitation in Step 1, do so as soon as possible once airborne.
9. Spray the pesticide suspension the same day as mixing.
10. Do not mix, load or clean equipment where there is a potential to contaminate wells or aquatic systems.

## EQUIPMENT CLEAN-UP

### Before Spraying:

- Prior to using MODDUS, ensure that the hopper, chemical handling equipment, lines and filter are thoroughly cleaned.

### After Spraying:

- Thoroughly clean application equipment immediately after spraying. **DO NOT** allow MODDUS residue to dry within application equipment.
- When using tank mixes, consult the tank-mix partner label for additional clean-up instructions.
- The following recommendations are provided:
  1. Drain and flush tank walls, boom and all hoses for ten minutes with a clean water/detergent mixture. Rinse with clean water. **DO NOT** clean application equipment near desirable vegetation, wells or other water sources.
  2. Remove all nozzles and screens and wash separately.
  3. Dispose of all rinsate in accordance with provincial regulations.

<b>SPRING WHEAT (INCLUDING DURUM) AND OATS</b>	
<b>Rate in L/ha (g ai/ha)</b>	0.83 L/ha (100 g ai/ha) (rate for single application)
<b>Application timing</b>	BBCH 30-39 (pseudo stem erection to ligule of last leaf visible)
<b>Number of applications</b>	1
<b>Note</b>	Optimal application timing is at BBCH 30-32 (beginning of stem elongation to Node 2). Do not apply MODDUS past BBCH 39. Due to risk of injury to the crop, avoid overlapping and do not apply to wheat or oats that are environmentally stressed. Ground application: Use a minimum of 100 L of water per hectare. Use sufficient water for thorough coverage. Aerial application: Use a minimum of 50 L of water per hectare.
<b>Rate in L/ha (g ai/ha)</b>	0.41 L/ha (50 g ai/ha) (rate for split applications)
<b>Application timing</b>	Make the first application at BBCH 21-24 (Main shoot and tiller). Make the second application at BBCH 37-39 (flag leaf just visible to ligule of last leaf visible)
<b>Number of applications</b>	2
<b>Note</b>	Do not apply MODDUS past BBCH 39. Due to risk of injury to the crop, avoid overlapping and do not apply to wheat or oats that are environmentally stressed. Ground application: Use a minimum of 100 L of water per hectare. Use sufficient water for thorough coverage. <b>Aerial application: Use a minimum of 50 L of water per hectare.</b>
<b>WINTER WHEAT</b>	
<b>Rate in L/ha (g ai/ha)</b>	0.83 - 1.03 L/ha (100-125 g ai/ha) (rate for single application)
<b>Application timing</b>	BBCH 30-39 (beginning of stem elongation to flag leaf stage). Optimal application timing is at BBCH 30-32.
<b>Number of applications</b>	1
<b>Note</b>	Use the higher rate in varieties that are more prone to lodging and in fields that are intensively managed (i.e. high fertility, high seeding rate). Do not apply MODDUS past BBCH 39. Due to risk of injury to the crop, avoid overlapping and do not apply to wheat that is environmentally stressed. Ground application: Use a minimum of 100 L of water per hectare. Use sufficient water for thorough coverage. Aerial application: Use a minimum of 50 L of water per hectare.

<b>BARLEY</b>	
<b>Rate in L/ha (g ai/ha)</b>	1.03 L/ha (125 g ai/ha) (rate for single application)
<b>Application timing</b>	BBCH 30-39 (pseudo stem erection to ligule of last leaf visible)
<b>Number of applications</b>	1
<b>Note</b>	Optimal application timing is at BBCH 30-32. Do not apply MODDUS past BBCH 39. Due to risk of injury to barley, avoid overlapping and do not apply to barley that is environmentally stressed. Ground application: Use a minimum of 100 L of water per hectare. Use sufficient water for thorough coverage. Aerial application: Use a minimum of 50 L of water per hectare.
<b>Rate in L/ha (g ai/ha)</b>	0.52 L/ha (62.5 g ai/ha) (rate for split applications)
<b>Application timing</b>	Make the first application at BBCH 21-24(Main shoot and tiller). Make the second application at BBCH 37-39 (Flag leaf just visible to ligule of last leaf visible)
<b>Number of applications</b>	2
<b>Note</b>	Do not apply MODDUS past BBCH 39. Due to risk of injury to barley, avoid overlapping and do not apply to barley that is environmentally stressed, Ground application: Use a minimum of 100 L of water per hectare. Use sufficient water for thorough coverage. Aerial application: Use a minimum of 50 L of water per hectare.

**Preharvest/Grazing Intervals (PHI/PGI)**

<b>Commodity</b>	<b>PHI/PGI (days)</b>
Wheat, Barley and Oats - hay	30
Wheat, Barley and Oats - grain and straw	Harvest at maturity
Wheat and Oats - forage	Do not feed forage to livestock or permit livestock to graze.

**Re-entry Interval (REI)**

DO NOT enter or allow worker re-entry during the restrictive re-entry interval (REI) of 12 hours.

**Plant-back Interval (PBI)**

<b>Commodity</b>	<b>PBI (days)</b>
Wheat, Barley, and Oats	0
All Other Feed and Food Crops	30