



# NUANCE<sup>®</sup>

## HERBICIDE

Water Dispersible Granule For Use on Wheat, Barley, Triticale, Fallow and as a Pre-plant or Post Harvest Burndown Herbicide

Active Ingredient:	By Weight
Tribenuron methyl:	
Methyl 2-[[[(4-methoxy-6-methyl-1,3,5-triazin-2-yl)methylamino]carbonyl]amino]sulfonyl]benzoate . . . . .	75.0%
<b>Other Ingredients:</b> . . . . .	25.0%
<b>TOTAL:</b> . . . . .	100.0%

EPA Reg. No. 67760-73

EPA Est. No. 086294-DEU-001

**KEEP OUT OF REACH OF CHILDREN  
CAUTION**

### FIRST AID

**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 center or doctor for further treatment advice.

Have the product container or label with you when calling a poison control center or doctor, or going for treatment. You may also contact 1-866-303-6950 for emergency medical treatment information.

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**CHEMINOVA**  
HELPING YOU GROW

## PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS

Causes moderate eye irritation. Avoid contact with eyes or clothing. Wash thoroughly with soap and water after handling.

## PERSONAL PROTECTIVE EQUIPMENT (PPE)

Some of the materials that are chemical-resistant to this product are listed below. If you want more options, follow the instructions for Category A on an EPA chemical-resistance category selection chart.

### Applicators and other handlers must wear:

Long-sleeved shirt and long pants.

Chemical resistant gloves made of any waterproof material such as polyethylene or polyvinyl chloride.

Shoes plus socks.

Discard clothing and other absorbent materials that have been drenched, or heavily contaminated with this product.

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables exist, use detergent and hot water. Keep and wash PPE separately from other laundry.

## USER SAFETY RECOMMENDATIONS

**USERS SHOULD:** Wash hands before eating, drinking, chewing gum, using tobacco or using the toilet. Users should remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing. Users should remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

## ENVIRONMENTAL HAZARDS

Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposing of equipment washwaters.

## PESTICIDE HANDLING

- Calibrate sprayers only with clean water away from the well site.
- Make scheduled checks of spray equipment.
- Ensure that all operation employees accurately measure pesticides.
- Mix only enough product for the job at hand.
- Avoid overfilling of spray tank.
- Do not discharge excess material on the soil at a single spot in the field, grove, or mixing/loading station.
- Dilute and agitate excess solution and apply at labeled rates or uses.
- Avoid storage of pesticides near well sites.
- When triple-rinsing the pesticide container, be sure to add the rinsate to the spray mix.

## DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

## AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 40 CFR part 170. This Standard contains requirements for the protection of agricultural workers on farms, forests, nurseries, and greenhouses, and handlers of agricultural pesticides. It contains requirements for training, decontamination, notification, and emergency assistance. It also contains specific instructions and exceptions pertaining to the statements on this label about personal protective equipment (PPE) and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. PPE required for early entry to treated areas that is permitted under the Worker Protection Standard and the involves contact with anything that has been treated, such as plants, soil, or water, is:

- Coveralls
- Chemical Resistant Gloves made of any waterproof material such as polyethylene or polyvinyl chloride
- Shoes plus socks

NUANCE® should be used only in accordance with instructions on this label or in separately published Cheminova, Inc. instructions.

Cheminova, Inc. will not be responsible for losses or damages resulting from the use of this product in any manner not specified by Cheminova.

NUANCE® may be used on wheat, barley, triticale, post-harvest burndown, fallow and pre-plant burndown in most states. Check with your state extension service or Department of Agriculture before use, to be certain NUANCE® is registered in your state.

NUANCE® is a water dispersible granule that is used for selective postemergence weed control in wheat (including durum), barley, triticale, post-harvest burndown, fallow and pre-plant burndown weed control. The best control is obtained when NUANCE® is applied to young, actively growing weeds. The use rate will depend on weed spectrum and size of weed at time of application. The degree and duration of control may depend on the following:

- weed spectrum and infestation intensity
- weed size at application
- environmental conditions at and following treatment

NUANCE® is noncorrosive, nonflammable, nonvolatile, and does not freeze. NUANCE® should be mixed in water and applied as a uniform broadcast spray.

## BIOLOGICAL ACTIVITY AND ENVIRONMENTAL CONDITIONS

NUANCE® is absorbed through the foliage of broadleaf weeds, rapidly inhibiting their growth. Leaves of susceptible plants appear chlorotic from 1 to 3 weeks after application and the growing point subsequently dies.

NUANCE® provides the best control in vigorously growing crops that shade competitive weeds.

Weed control in areas of thin crop stand or seeding skips may not be as satisfactory. However, a crop canopy that is too dense at application can intercept spray and reduce weed control.

NUANCE® may injure crops that are stressed from adverse environmental conditions (such as extreme temperatures or moisture), abnormal soil conditions, or cultural practices. In addition, different varieties of the crop may have differing levels of sensitivity to treatment with NUANCE® under otherwise normal conditions.

Treatment of sensitive crop varieties may injure crops. To reduce the potential of crop injury, tank mix NUANCE® with 2,4-D (ester formulations perform best-see the Tank Mixtures section of this label) and apply after the crop is in the tillering stage of growth.

In warm, moist conditions, the expression of herbicide symptoms is accelerated in weeds: in cold, dry conditions, expression of herbicide symptoms is delayed. In addition, weeds hardened-off by drought stress are less susceptible to NUANCE®

Weed control may be reduced if rainfall or snowfall occurs soon after application. Several hours of dry weather are needed to allow NUANCE® to be sufficiently absorbed by weed foliage.

## USE RATE

Apply 0.17 to 0.33 ounce NUANCE® per acre to wheat (including durum), barley, triticale, fallow and pre-plant burndown. Two applications of NUANCE® may be made per season provided the total amount applied does not exceed 0.33 ounce per acre.

### WHEAT, BARLEY AND TRITICALE

Use 0.33 ounce NUANCE® per acre for heavy infestation of those weeds listed in the "WEEDS PARTIALLY CONTROLLED" section of this label and/or when application timing and environmental conditions are marginal (refer to "BIOLOGICAL ACTIVITY AND ENVIRONMENTAL CONDITIONS" section of this label for best performance).

Use 0.17 to 0.25 ounce NUANCE® per acre for light infestation of weeds listed in the "WEEDS CONTROLLED" section of this label. Conditions at application should be optimum for effective treatment of these weeds.

### FALLOW

Apply 0.17 to 0.33 ounce NUANCE® per acre to fallow fields. Two applications of NUANCE® may be made per crop season provided the total amount applied does not exceed 0.33 ounce per acre.

NUANCE® should be applied in combination with other suitable registered fallow herbicides (See the "TANK MIXTURES" section of this label for additional information).

### PREPLANT BURNDOWN

Apply NUANCE® at 0.17 to 0.33 ounce per acre as a burndown treatment prior to planting any crop, or shortly after planting wheat (including durum), barley or triticale (prior to emergence). Use the higher rate when weed infestation is heavy and predominantly consists of those weeds listed under the "WEEDS PARTIALLY CONTROLLED" section of this label, or when application timing and environmental conditions are marginal. (See the "APPLICATION TIMING" section of this label for restriction on planting intervals).

Sequential treatments of NUANCE® may be made provided the total amount of NUANCE® applied during one fallow/pre-plant cropland season does not exceed 0.33 ounce per acre.

NUANCE® should be applied in combination with other suitable registered pre-plant burndown herbicides (See the "TANK MIXTURES" section of this label for additional information).

### POST HARVEST

Apply 0.17 to 0.33 ounce NUANCE® per acre to crop stubble after harvest. Use 0.33 ounce per acre rate when weed infestation is heavy and predominantly consists of those weeds listed under the "WEEDS PARTIALLY CONTROLLED" section of this label, or when application timing and environmental conditions are marginal. (See the "APPLICATION TIMING" Section for restriction on planting intervals). NUANCE® should be applied in combination with other suitable registered burndown herbicides (See the "TANK MIXTURES" section of this label for additional information).

Sequential treatments of NUANCE® may also be made provided the total amount of NUANCE® applied during one fallow/pre plant cropland season does not exceed 0.33 ounce per acre.

## APPLICATION TIMING

### WHEAT, BARLEY AND TRITICALE

Apply NUANCE® after the crop is in the 2-leaf stage, but before the flag leaf is visible. Do not harvest within 45 days of the last application.

Since NUANCE® has very little or no soil activity, it controls only those weeds that have germinated; therefore, apply NUANCE® when all or most of the weeds have germinated. For best results, annual broadleaf weeds should be past the cotyledon stage, actively growing, and less than 4" tall or wide. See the "SPECIFIC WEED PROBLEMS" section of this label for more information.

Rainfall immediately after treatment can wash NUANCE® off of weed foliage, resulting in reduced weed control. Several hours of dry weather are needed to allow NUANCE® to be sufficiently absorbed by weed foliage.

### FALLOW

NUANCE® may be used as a fallow treatment when the majority of weeds have emerged and are actively growing.

## FOR USE IN FALL FALLOW FOR POST-EMERGENCE BURNDOWN

NUANCE® water-dispersible granular herbicide may be used at rate of 0.17 to 0.33 oz per acre for postemergence burndown of up to 3" emerged weeds in fallow fields in the Fall.

### Adjuvants

An adjuvant must be added to the tank.

- For best results, add a crop oil concentrate or modified seed oil (methylated, ethylated or saponified) at 1% v/v (1 gallon per 100 gallons of spray)
- OR, add nonionic surfactant at 0.25 - 0.5% v/v (1 - 2 quarts per 100 gallons of spray).

### Crop Rotation

Following application of NUANCE®:

- Wheat, Barley and Triticale may be planted anytime after application.
- Cotton, Corn , Soybeans and Grain Sorghum may be planted 14 days after application.
- Sugarbeets, Winter Rape and Canola can be planted 60 days after application.
- Any other crop may be planted 45 days after application.

### Tank mixes

NUANCE® may be tank mixed with other suitable registered herbicides such as GLYFOS® or 2,4-D LVE. Read and follow all manufacturer's label restrictions for the companion herbicide. If they conflict with the NUANCE® Section 3 label use directions, do not tank mix the herbicide with NUANCE®.

## WEEDS CONTROLLED

Bushy wallflower  
Buttercup, small flower, hairy  
Chamomile, false, mayweed, wild  
Canada thistle  
Chickweed, common  
Coast fiddleneck  
Corn spurry  
Dandelion\*  
Deadnettle\*  
Early whitlowgrass  
Field pennycress  
Groundsel, common, cressleaf  
Henbit\*  
Lambsquarters, common, slimleaf  
Marestail\*

Miners lettuce  
Mustards, wild, black, blue/purple  
Parsnip\*, wild  
Pineappleweed  
Poison hemlock\*  
Prickly lettuce\*\*  
Purslane, common  
Redroot Pigweed  
Russian Thistle\*  
Smallseed falseflax  
Shepherds-purse\*\*  
Tansymustard  
Tumble/Jim Hill mustard  
Tarweed fiddleneck

## WEEDS PARTIALLY CONTROLLED\*\*\*

Hairy nightshade  
Pennsylvania smartweed  
Prostrate knotweed  
Redmaids  
Sowthistle, annual

Sunflower, common  
Wild buckwheat  
Wild garlic  
Wild radish

\* 2,4-D LVE addition required

\*\* 2,4-D LVE addition recommended

\*\*\* Partially controlled weeds exhibit a visual reduction in numbers as well as a significant loss of vigor.

## PREPLANT BURNDOWN

Apply NUANCE® as a burndown treatment to wheat (including durum), barley or triticale fields to control emerged weeds prior to, or shortly after planting (prior to emergence). Make applications when the majority of weeds have emerged and are actively growing.

Apply NUANCE® as a burndown treatment to sugarbeets, winter rape and canola fields at least 60 days prior to planting. Apply NUANCE® as a burndown treatment to fields where any other crop is to be grown (such as corn, cotton, rice, grain sorghum or soybeans) at least 14 days prior to planting.

## PRE-PLANT OR AT-PLANTING BURNDOWN IN COTTON, FIELD CORN, GRAIN SORGHUM, RICE, AND SOYBEANS

NUANCE® water-dispersible herbicide may be applied for burndown of emerged weeds before planting, or at planting, of cotton, field corn, grain sorghum, rice and soybeans.

NUANCE® may be used as part of a pre-plant or at-planting burndown treatment, in combination with other suitable registered herbicides. Read and follow all manufacturers label restrictions for the companion herbicide. If they conflict with this label, do not tank mix the herbicide with NUANCE®. It is a violation of Federal law to use this product in a manner inconsistent with its labeling. In fields to be planted to cotton, apply NUANCE® at 0.2 ounce per acre. In fields to be planted to field corn, grain sorghum, rice or soybeans, apply NUANCE® at 0.17 to 0.33 ounce per acre for control or partial control of the weeds listed on the EPA registered label. Allow at least 14 days between application and planting of cotton, corn, soybeans or grain sorghum. Include a nonionic surfactant, petroleum based crop oil concentrate, or vegetable-seed oil-based product (methylated seed oils are considered a vegetable seed-based oil).

- If another herbicide is tank mixed with NUANCE® to increase the broadleaf weed spectrum, select adjuvants Crop Oil Concentrate Under dry conditions or during cool weather, a petroleum based crop oil concentrate, or vegetable-seed oil-based product may be used in place of a nonionic surfactant at 1-2 gallon/100 gallon of spray solution 1-2% v/v to enhance weed control. Use a petroleum-based crop oil concentrate with at least 14% emulsifiers/surfactant and 80% oil.

## SPRAY ADJUVANTS

### Nonionic Surfactant (NIS)

Apply at a rate (concentration) of 0.25-0.5% v/v (1-2 quart per 100 gallon spray solution). Use the higher rate in hot and dry conditions to enhance control.

### Ammonium Nitrogen Fertilizer

An ammonium nitrogen fertilizer can be added to a surfactant or a crop oil concentrate to enhance control. Alternatively, a high quality, sprayable grade of ammonium sulfate (21-0-0) may be used.

### Crop Oil Concentrate

Under dry conditions or during cool weather, a petroleum based crop oil concentrate, or vegetable seed oil-based product may be used in place of a nonionic surfactant at 1-2 gallon/100 gallon of spray solution 1-2% v/v to enhance weed control. Use a petroleum-based crop oil concentrate with at least 14% emulsifiers/surfactant and 80% oil.

## IMPORTANT PRECAUTIONS

Seedling disease, nematodes, cold weather, deep planting (more than 2"), excessive moisture, high salt concentration, and/or drought may weaken cotton seedlings and increase the possibility of crop injury. Cotton resumes normal growth once favorable growing conditions return.

## RESTRICTIONS

- DO NOT apply later than 14 days before planting cotton, corn, soybeans or grain sorghum.
- DO NOT apply after planting field corn, grain sorghum, rice or soybeans.
- DO NOT allow livestock to graze on, or feed forage, hay or straw from treated soybean fields.
- DO NOT make more than one pre-plant or at-planting application of NUANCE® to field corn, grain sorghum, rice, or soybeans per growing season.
- DO NOT apply more than 0.33 ounce of NUANCE® to rice, grain sorghum, field corn, or soybeans pre-plant or at-planting.

## POST HARVEST

NUANCE® may be used as a burndown treatment to crop stubble when the majority of weeds have emerged and are actively growing.

## WEEDS CONTROLLED

NUANCE® controls up To 3" In Height Or Diameter – Fallow And Pre-Plant Burndown when used according to directions

Black mustard  
Blue/purple mustard  
Bushy wallflower  
/Treacle mustard\*  
Canada thistle\*\*  
Coast fiddleneck  
Common Chickweed  
Common Lambsquarters  
Common Purslane  
Corn, Gromwell\*\*  
Corn spurry  
Cowcockle  
Curly Dock\*\*  
Dandelion\*\*\*  
Deadnettle\*\*\*  
Early whitlowgrass  
False chamomile/  
Wild chamomile/Scentless chamomile  
(*Matricaria maritima L.*)  
Field pennycress  
Flixweed

Hairy buttercup  
Kochia\*\*‡  
London Rocket  
Marestail \*  
Mayweed chamomile/Stinking chamomile/  
dog fennel (*Anthemis cotula L.*)\*\*  
Miners lettuce  
Pineappleweed  
Poison hemlock\*  
Prickly lettuce\*\*‡  
Redroot pigweed  
Russian thistle\*\*‡  
Shepherd's -purse  
Slimleaf lambsquarters  
Smallseed falseflax  
Tansymustard  
Tarweed fiddleneck  
Tumble/Jim hill mustard\*\*  
Wild mustard

## WEEDS PARTIALLY CONTROLLED\*

NUANCE® partially controls the following weeds when used according to label directions:

Annual sowthistle  
Common cocklebur  
Common sunflower  
(volunteer) \*\*  
Common vetch\*\*  
Hairy nightshade  
Hairy vetch\*\*

Henbit  
Pennsylvania smartweed  
Prostrate knotweed  
Redmaids  
Wild buckwheat  
Wild garlic  
Wild radish\*\*

\* Partially controlled weeds exhibit a visual reduction in numbers as well as a significant loss of vigor. For better results use 0.25 to 0.33 ounce NUANCE® per acre and include a tank mix partner such as 2,4-D, MCP, bromoxynil (such as "Buctril", "Bison", "Bronate" or "Bronate Advanced"), or dicamba (such as "Banvel"/"Clarity"). Refer to the "TANK MIXTURES" section of this label.

\*\* See the specific Weed Problems section of this label for more information.

\*\*\* 2,4-D LVE addition required.

‡ Naturally occurring resistant biotypes of kochia, prickly lettuce and Russian thistle are known to occur. See the "TANK MIXTURES" and "SPECIFIC WEED PROBLEMS" sections of this label for additional details.

## FOR VEGETATION BURNDOWN

NUANCE® water-dispersible granular herbicide may be applied for burndown of the emerged weeds listed below in the "WEEDS CONTROLLED AND WEEDS PARTIALLY CONTROLLED" sections.

## RATES AND ADJUVANTS

- Apply NUANCE® at 0.17 to 0.33 ounce per acre. Use the higher rate for denser populations or where weeds are approaching the maximum size.
- Add a spray adjuvant (See Surfactants)

## TANK MIXTURES

- Addition of a minimum of 0.50 pound active ingredient per acre of 2,4-D LVE ester (e.g. 1 pint of a 4 lb/gal 2,4-D LVE formulation) is recommended for best results and required for burndown of some weeds.
- NUANCE® may be mixed with one or more other suitably registered herbicides such as, but not limited to simazine and glyphosate for expanded weed size, weed spectrum, or to add residual control. Read and follow all manufacturers label instructions for the companion herbicide. If those instructions conflict with this label, do not tank mix the herbicide with NUANCE®.

## APPLICATION EQUIPMENT AND SPRAY VOLUMES

Apply uniformly by ground equipment using a properly calibrated fixed boom sprayer. For burndown applications of existing vegetation use with spray nozzles that provide thorough coverage of the weeds.

## WEEDS CONTROLLED - UP TO 3" IN HEIGHT OR DIAMETER

Black mustard  
Blue/purple mustard  
Bushy wallflower/Treacle mustard  
Canada thistle  
Common chickweed  
Common groundsel  
Common lambsquarters  
Common purslane  
False chamomile  
Field pennycress  
Hairy buttercup  
Marestail\*  
Mayweed chamomile (dog fennel)  
Miners lettuce  
Pineappleweed

Poison hemlock\*  
Prickly lettuce\*\*  
Purslane speedwell  
Russian thistle  
Shepherd's-purse\*\*  
Slimleaf lambsquarters  
Small-flower buttercup  
Smallseed falseflax  
Tansymustard  
Tarweed fiddleneck  
Tumble/Jim hill mustard  
Wild chamomile  
Wild mustard  
Wild parsnip\*

\* 2,4-D LVE addition required

\*\* 2,4-D LVE addition recommended

## WEEDS PARTIALLY CONTROLLED\*\*\* - UP TO 3" IN HEIGHT OR DIAMETER

Annual sowthistle	Prostrate knotweed
Common sunflower (volunteer)	Redroot pigweed
Common vetch	Redmaids
Hairy vetch	Wild buckwheat
Hairy nightshade	Wild garlic
Pennsylvania smartweed	Wild radish

\*\*\* partially controlled weeds exhibit a visual reduction in numbers as well as a significant loss of vigor.

## SPRAY ADJUVANTS

Include a spray adjuvant with applications of NUANCE®. In addition an ammonium nitrogen fertilizer may be used.

Consult your Ag dealer or applicator prior to using an adjuvant system. If another herbicide is tank mixed with NUANCE®, select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients (40 CFR 10017).

### Nonionic Surfactant (NIS)

- Apply 0.06 to 0.50% volume/volume 2 pint to 4 pint per 100 gallon of spray solution)
- Surfactant products must contain at least 60% nonionic surfactant with a hydrophilic/lipophilic balance (HLB) greater than 12. – See the Tank Mixtures section of this label for additional information.

### Crop Oil Concentrate (COC) Petroleum or Modified Seed Oil (MSO)

- Apply at 1% volume/volume (1 gallon per 100 gallon spray solution) or 2% volume/volume under arid conditions.
- Oil adjuvants must contain at least 80% high quality petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.

### Special Adjuvant Types

- Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.
- In addition to the adjuvants specified above, other adjuvant types may be used if they provide the same functionality and have been evaluated and approved by Cheminova, Inc.

### Ammonium Nitrogen Fertilizer

- Use 2 quart/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 pound/acre of a spray-grade ammonium sulfate (AMS). Use 4 quart/acre UAN or 4 pound/acre AMS under arid conditions.

## GROUND APPLICATION

For optimum spray distribution and thorough coverage, use flat-fan or low-volume flood nozzles.

- For best performance, select nozzles and pressure that deliver MEDIUM spray droplets.
- Nozzles that deliver COARSE spray droplets may be used to reduce drift, provided spray volume is increased to maintain coverage on small weeds. For optimal product performance and minimal spray drift, adjust the spray boom to the lowest possible spray height listed in manufacturers' specifications.
- Overlaps or starting, stopping, slowing, and turning while spraying may result in crop injury.
- For flat-fan nozzles, use a spray volume of at least 5 gallon per acre (GPA).
- For flood nozzles on 30" spacing, use flood nozzles no larger than TK10 (or the equivalent), a pressure of at least 30 psi and a spray volume of at least 10 GPA only. For 40" nozzle spacing, use at least 13 GPA; for 60" spacing use at least 20 GPA. It is essential to overlap the nozzles 100% for all spacings.
- "Raindrop RA" nozzles are not recommended for NUANCE® applications, as weed control performance may be reduced.
- Use screens that are 50-mesh or larger.

For application in California refer to the "CALIFORNIA APPLICATION REQUIREMENTS FOR PROTECTION OF SENSITIVE CROPS" section of this label for specific ground application requirements.

## FOR SPRINKLER CHEMIGATION WITH NUANCE® AND BROMOXNYL CONTAINING HERBICIDES (SUCH AS "BISON", "BRONATE" OR "BRONATE ADVANCED") FOR POSTEMERGENCE WEED CONTROL IN WINTER & SPRING WHEAT & SPRING BARLEY IN IDAHO

NUANCE® water dispersible granular may be used in combination with bromoxynil containing herbicides (such as "Bison", "Bronate" or "Bronate Advanced"), for use in fall-seeded wheat, spring seeded barley and spring seeded wheat when applied through sprinkler irrigation systems in the State of Idaho.

## HOW TO USE

Use 0.25 to 0.33 ounce NUANCE® per acre in combination with bromoxynil containing herbicides at 3 to 6 ounce active ingredient per acre (such as "Bronate" or "Bison" at 0.75 to 1.5 pint per acre). Apply to wheat and barley after the 3-leaf stage but before the flag leaf is visible. Make only one chemigation application of this tank mixture per crop year. For best results, apply to broadleaf weeds up to the 4-leaf stage, or 2 inches in height or 1 inch in diameter, whichever comes first. Consult NUANCE® and bromoxynil containing herbicides package labels for a list of weeds controlled or suppressed.

## SPRINKLER IRRIGATION APPLICATION

Apply this tank mix through sprinkler irrigation systems including center pivot, lateral move, side (wheel) roll, solid set or hand move irrigation systems only. Do not apply these herbicides through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers or other experts. Do not connect an irrigation system (including greenhouse systems) used for NUANCE® application to any public water system. A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise. The sprinkler chemigation system must contain a functional check valve, vacuum relief valve, and low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump. The pesticide injection pipeline must also contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock. Do not apply when wind speed favors drift beyond the area intended for treatment.

## SPECIFIC REQUIREMENTS FOR APPLICATION THROUGH SPRINKLER IRRIGATION SYSTEMS

1. In center pivot and continuous lateral move systems, NUANCE® + bromoxynil containing herbicides should be applied continuously for the duration of the water application. In solid set systems, application of the tank mix should be made during the last 30 to 45 minutes of the irrigation.
2. Set the sprinkler system to deliver approximately 0.5 inch or less of water per acre for best product performance.
3. Fill the supply tank with half of the water amount desired, add the NUANCE® and agitate it well. Add the bromoxynil containing herbicide and then add the remaining water amount with agitation. Bromoxynil containing herbicides require a dilution with at least 4 parts water to 1 part bromoxynil containing herbicide.
4. Agitation is recommended in the pesticide supply tank when applying this tank mix.
5. Inject the NUANCE® + bromoxynil containing herbicide solution at least 8 feet ahead of a right angle turn of irrigation pipe to insure adequate mixing. Allow sufficient time for the herbicide mixture to be flushed through the lines before turning off irrigation water.
6. Follow both NUANCE® and bromoxynil containing herbicide label instructions for spray tank cleanout both before and after application. Flush lines with clean water following application.
7. Do not apply when wind speed favors drift beyond the area intended for treatment. Avoiding spray drift is the responsibility of the applicator.

## AERIAL APPLICATION

Use nozzle types and arrangements that provide optimum spray distribution and maximum coverage at 2 to 5 GPA.

Use at least 2 GPA. In Idaho, Oregon and Utah use at least 3 GPA.

Do not apply NUANCE® by air in the state of New York.

See the "SPRAY DRIFT MANAGEMENT" section of this label.

## PRODUCT MEASUREMENT

NUANCE® can be measured using the NUANCE® volumetric measuring cylinder included in the case. The degree of accuracy of this cylinder varies by ± 7.5%. For more precise measurement, use scales calibrated in ounces.

## TANK MIXTURES

NUANCE® may be tank mixed with other suitable registered herbicides to control weeds listed as partially controlled, weeds resistant to NUANCE®, or weeds not listed under "WEEDS CONTROLLED AND WEEDS PARTIALLY CONTROLLED" sections of this label.

### Wheat, Barley and Triticale

#### With 2,4-D (amine or ester) or MCP (amine or ester)

NUANCE® may be tank mixed with 2,4-D and MCP (preferable ester formulations) herbicides for use on wheat, barley and triticale. For best results, add 2,4-D or MCP herbicides to the tank at 0.125 or 0.375 pound active ingredient per acre. In tank mixes containing 0.125 pound active ingredient 2,4-D or MCP per acre, add 1 to 2 pint of nonionic surfactant; in tank mixes containing 0.25 to 0.375 pound active ingredient 2,4-D or MCP per acre, add 1 pint of nonionic surfactant.

Higher rates of 2,4-D or MCP may be used, but do not exceed the highest rate allowed by those respective labels. When using rate of 0.375 pound active ingredient per acre or higher, use of additional nonionic surfactant may not be needed, unless specified otherwise in the 2,4-D or MCP label, or local guidance.

#### With 2,4-D or MCP (amine or ester) and Dicamba (such as "Banvel" / "Clarity")

NUANCE® may be applied in a 3-way tank mix with formulations of dicamba (such as "Banvel" / "Clarity") and 2,4-D or MCP.

Make applications at 0.17 to 0.33 ounce of NUANCE® + 1 to 1.5 ounce active ingredient dicamba (such as "Banvel" / "Clarity") + 0.25 to 0.38 pound active ingredient of 2,4-D or MCP (ester or amine) per acre. Use higher rates when weed infestation is heavy. Add 1 to 2 pint of nonionic surfactant to the 3 way mixture, where necessary, as deemed by local guidance. Use of additional nonionic surfactant may not be needed with the higher phenoxy rates and ester phenoxy formulations. Consult the specific 2,4-D or MCP and dicamba labels, or local guidance for more information.

Apply this 3-way combination to winter wheat after the crop is tillering and prior to jointing (first node). In Spring Wheat (including Durum), apply after the crop is tillering and before it exceeds the 5-leaf stage.

Do not apply this 3-way mixture at high rates more than once a year, or more than twice per year at the low rates.

#### With Bromoxynil containing products (such as "Buctril", "Bison", "Bronate", or "Bronate Advanced")

NUANCE® may be tank mixed with bromoxynil containing herbicides registered for use on wheat, barley or triticale. For best results, add bromoxynil-containing herbicides to the tank at 3 to 6 ounce active ingredient per acre (such as "Bronate" or "Bison" at 0.75 to 1.5 pint per acre). Note that tank mixtures of NUANCE® plus bromoxynil may result in reduced control of Canada thistle.

#### With "Starane", "Starane + Salvo" or "Starane + Sword"

For improved control of Kochia (2-4" tall), NUANCE® may be tank mixed with 0.3 or 0.6 pints per acre of Starane. 0.6 to 1.3 pints per acre of Starane + Salvo, or 0.75 to 1.5 pints per acre of Starane + Salvo and Starane + Sword. Refer to this label, and the Starane, Starane + Salvo, and Starane + Sword labels for information regarding use restrictions, labeled crops, rotational cropping intervals, sprayer cleanup, use precautions and other information. 2,4-D and MCP herbicides (preferable ester formulations) may be tank mixed with NUANCE® plus Starane. Consult local guidance and the Tank Mixtures section of this label for additional information.

#### With "Maverick"

NUANCE® can be tank mixed with "Maverick" herbicide for improved control of weeds in wheat.

#### With "Aim"

NUANCE® can be tank mixed with "Aim" herbicide for improved control of weeds in wheat and barley.

#### With "Stinger", or "Curtail" or "Curtail M"

NUANCE® can be tank mixed with "Stinger", "Curtail", or "Curtail M" herbicides for improved control of weeds in wheat and barley.

#### **With “Assert” Herbicide or “Avenge” Herbicide**

NUANCE® can be tank mixed with “Avenge” or “Assert”. When tank mixing NUANCE® with “Assert”, always include another broadleaf weed herbicide with a different mode of action – for example 2,4-D ester, MCP ester, or bromoxynil (such as “Buctril”, “Bison”, “Bronate”, or “Bronate Advanced”). Applications of NUANCE® plus “Assert” may cause temporary crop discoloration, stunting, or injury when heavy rainfall occurs shortly after application.

#### **With “Puma”**

NUANCE® can be tank mixed with “Puma” herbicide for improved control of weeds in wheat and barley.

#### **With “Discover”**

NUANCE® can be tank mixed with “Discover” herbicide for improved control of weeds in spring wheat.

#### **With “Everest”**

NUANCE® can be tank mixed with “Everest” herbicide for improved control of weeds in spring wheat.

#### **With Other Herbicides**

- Tank mixtures of NUANCE® plus metribuzin may result in reduced control of wild garlic.
- Tank mixtures of NUANCE® plus dicamba (such as “Banvel”/“Clarity”) may result in reduced control of some broadleaf weeds.
- Tank mixtures of NUANCE® with “Hoelon 3EC” may result in reduced grass control.

#### **With Fungicides**

NUANCE® may be tank mixed or used sequentially with fungicides registered for use on cereal crops.

#### **With Insecticides**

NUANCE® may be tank mixed or used sequentially with insecticides registered for use on cereal crops. However, under certain conditions (drought stress, or if the crop is in the 2 to 4 leaf stage), tank mixtures or sequential applications of NUANCE® with organophosphate insecticides (such as “Nufos”) may produce temporary crop yellowing or, in severe cases, crop injury. The potential for crop injury is greatest when wide fluctuations in day/night temperatures occur just prior to or soon after application.

Test these mixtures in a small area before treating large areas.

Do not apply NUANCE® within 60 days of crop emergence where an organophosphate insecticide has been applied as an in-furrow treatment since crop injury may result.

Do not use NUANCE® plus Malathion since crop injury may result.

#### **With Liquid Nitrogen Solution Fertilizer**

Liquid nitrogen fertilizer solutions may be used as a carrier in place of water. Run a tank mix compatibility test before mixing NUANCE® in fertilizer solution. NUANCE® must first be pre-splurried with water and then added to liquid nitrogen solutions (e.g. 28-0-0, 32-0-0). Ensure that the agitator is running while the NUANCE® is added. Use of this mixture may result in temporary crop yellowing and stunting.

If using low rates of liquid nitrogen fertilizer in the spray solution (less than 50% of the spray solution volume), the addition of surfactant is necessary. Add surfactant at 0.5 pint to 1 quart per 100 gallon of spray solution (0.06 to 0.25% v/v) based on local guidance.

When using high rates of liquid nitrogen fertilizer solution in spray solution, adding surfactant increases the risk of crop injury. If 2,4-D or MCP is included with NUANCE® and fertilizer mixture, ester formulations tend to be more compatible (see manufacturer’s label). Additional surfactant may not be needed when using NUANCE® in tank mix with 2,4-D ester or MCP ester and liquid nitrogen fertilizer solutions. Consult your agricultural dealer, consultant, field advisor, or Cheminova, Inc. representative for specific guidance before adding an adjuvant to these tank mixtures.

Note: In certain areas east of the Mississippi river unacceptable crop response may occur with use of straight or dilute nitrogen fertilizer carrier solutions where cold temperatures or widely fluctuating day/night temperatures exist. In these areas consult your agricultural dealer, consultant, field advisor, or Cheminova, Inc. representative for specific guidance before using nitrogen fertilizer carrier solutions.

Do not use low rates of liquid nitrogen fertilizer solution as a substitute for a surfactant.

Liquid nitrogen fertilizer solutions that contain sulfur can increase crop response.

Do not use with liquid fertilizer solutions with a pH less than 3.0.

### **TANK MIXTURES IN FALLOW**

NUANCE® may be used as a fallow treatment, and should be tank mixed with other herbicides that are registered for use in fallow, including glyphosate (such as GLYFOS®), “Landmaster II”, “Fallow Master”, “RT Master”, glyphosate plus 2,4-D (ester formulations work best), glyphosate plus dicamba (such as “Banvel” / “Clarity”), 2,4-D (ester formulations work best), or dicamba (such as “Banvel” / “Clarity”) alone.

### **TANK MIXTURES IN PRE-PLANT BURNDOWN APPLICATIONS**

NUANCE® may be used as a pre-plant burndown treatment alone or tank mixed with other herbicides that are registered for use as a pre-plant burndown product, including glyphosate (such as GLYFOS®), “Landmaster II”, “Fallow Master”, “RT Master”, glyphosate plus dicamba (such as “Banvel” / “Clarity”) or dicamba (such as “Banvel” / “Clarity”) alone.

### **TANK MIXTURES IN POST HARVEST APPLICATIONS**

NUANCE® may be used as a post harvest treatment to crop stubble, and should be tank mixed with other herbicides that are registered for use in fallow.

### **NUANCE® PLUS “GOLDSKY,” “EVEREST,” OR “RIMFIRE” MAX FOR SUPPRESSION OF YELLOW AND GREEN FOXTAIL IN WHEAT IN NORTH DAKOTA, SOUTH DAKOTA, MINNESOTA AND MONTANA**

Use NUANCE® at 0.25 to 0.33 oz/a can be tank mixed with “Goldsy,” or “Everest,” or “Rimfire” Max for yellow and green foxtail suppression in wheat.

#### **Surfactants**

Unless otherwise specified, add a nonionic surfactant having at least 80% active ingredient at 1 to 2 qt per 100 gal of spray solution (0.25 to 0.5%, v/v) when NUANCE® is used in a tank mix with “Goldsy,” “Everest,” or “Rimfire” Max. Antifoaming agents may be used if necessary. Do not use low rates of liquid nitrogen fertilizer solution as a substitute for surfactant.

### **SPECIFIC WEED PROBLEMS**

**Canada thistle:** For best results, apply 0.33 ounce of NUANCE® per acre when all thistles are 4” to 8” tall with 2” to 6” of new growth. Make the application in the spring.

**Corn Gromwell:** For best results, apply 0.33 ounce of NUANCE® per acre in combination with 2,4-D or MCP (refer to the “TANK MIXTURES” section of this label).

**Curly Dock:** For best results, apply 0.25 to 0.33 ounce of NUANCE® per acre in combination with 24-D or MCP (refer to the “TANK MIXTURES” section of this label).

**Kochia:** Naturally occurring biotypes resistant to NUANCE® are known to occur. For best

results, use NUANCE® in a tank mixture with Starane, Starane + Salvo, Starane + Sword, dicamba (such as “Banvel” / “Clarity”) and 2,4-D or MCP (ester or amine) or bromoxynil containing products (such as “Buctril”, “Bison”, “Bronate”, or “Bronate Advanced”).

NUANCE® should be applied in the spring when kochia are less than 2” tall and are actively growing (refer to the “TANK MIXTURES” section of this label for additional details on rates and restrictions).

**Mayweed chamomile/Stinking Chamomile/dog fennel:** For best results apply 0.25 to 0.33 ounce of NUANCE® per acre.

**Russian thistle, Prickly lettuce:** Naturally occurring biotypes resistant to NUANCE® of these weeds are known to occur. For best results, use NUANCE® in a tank mixture with dicamba (such as “Banvel” / “Clarity”) and 2,4-D or MCP (ester or amine), or bromoxynil containing products (such as “Buctril”, “Bison”, “Bronate”, or “Bronate Advanced”).

NUANCE® should be applied in the spring when Russian thistle and prickly lettuce are less than 2” tall or 2” across and are actively growing (refer to the “TANK MIXTURES” section of this label for additional details on rates and restrictions).

**Tumble/Jim Hill mustard:** For best results, apply 0.33 ounce of NUANCE® per acre in combination with 2,4-D or MCP (refer to the “TANK MIXTURES” section of this label).

**Vetch (common and hairy):** For best results, apply 0.25 to 0.33 ounce of NUANCE® per acre when vetch is less than 6” in length. For severe infestations of vetch, or when vetch is greater than 6” in length, apply NUANCE® in combination with 2,4-D or MCP (refer to the “TANK MIXTURES” section of this label).

**Wild radish:** For best results, apply 0.17 – 0.33 ounce NUANCE® per acre, plus 0.26 to 0.375 pound active ingredient per acre MCP, plus 0.25% v/v nonionic surfactant (1 quart per 100 gallon of spray solution) to wild radish rosettes less than 6” diameter. Make the application either in the fall or spring. Applications made later than 30 days after weed emergence will result in partial control. Fall applications should be made before plants harden-off.

**SU/IMI Tolerant Volunteer Sunflowers:** Varieties resistant to SU and IMI products (like NUANCE®, “Beyond”, “Pursuit”, “Raptor”) are under development. For best results, use NUANCE® in a tank mix with Starane, Starane + Salvo, Starane + Sword, dicamba (such as “Banvel” / “Clarity”) and 2,4-D or MCP (ester or amine), or bromoxynil containing products (such as “Buctril”, “Bison”, “Bronate”, or “Bronate Advanced”).

### **FOR IMPROVED CONTROL OF NARROWLEAF HAWKSBEARD**

NUANCE® may be in a tank mix with glyphosate or 2,4-D for postemergence control of up to 3” narrowleaf hawksbeard.

#### **Post Harvest, Fallow, and Pre-plant**

NUANCE® may be used at rate of 0.17 to 0.33 ounce per acre in a tank mix with 1 to 2 pints of glyphosate per acre (4 pounds per gallon formulation or equivalent) for postemergence control of narrowleaf hawksbeard. Application can be made post harvest, fallow, and/or as a pre-plant burndown. Sequential treatments of NUANCE® may be made provided the total amount during the post harvest to preplant period does not exceed 0.33 ounce per acre.

The addition of nonionic surfactant or crop oil may improve weed control since glyphosate products differ in their adjuvant contents. See glyphosate label for specific recommendations.

NUANCE® plus glyphosate may be tank mixed with other suitable registered herbicides such as 2,4-D or dicamba.

#### **After Wheat Emergence**

NUANCE® may be used at rate of 0.17 to 0.33 ounce per acre in tank mix with 2,4-D for postemergence control of narrowleaf hawksbeard. Add 2,4-D at 0.25 to 0.375 pound active ingredient per acre (such as 0.50 to 0.75 pint of a 4 pound/gallon product or 0.3 to 0.5 pint of a 6 pound/gallon product). Apply this tank mix only in the spring when the wheat is fully tillered and before the jointing stage.

Surfactant may be added to the mixture at 0.5 to 1 quart per 100 gallons of spray solution (0.125 to 0.25%); however, adding surfactant may increase the potential for crop injury, especially at the higher 2,4-D rates. NUANCE® plus 2,4-D may be tank mixed with other suitable registered herbicides.

### **FOR WEED CONTROL IN GRASS GROWN FOR SEED ONLY IN THE STATES OF IDAHO, OREGON, WASHINGTON AND UTAH**

NUANCE® water dispersible granular may be used for selective postemergence control/suppression of certain broadleaf weeds in seedling and established stands of bentgrass, bluegrass, annual ryegrass, orchardgrass, tall fescue, and fine fescue grown for seed. NUANCE® may be used on seedling and established perennial ryegrass providing user accepts all risk of possible crop injury and/or reduced seed yield. See the “USE RATES” section of the EPA approved label.

NUANCE® may cause temporary yellowing and stunting of grass. Best results are obtained when NUANCE® is applied to young, actively growing weeds. The degree of control and duration of effect are dependent on the rate used, sensitivity and size of target weeds and environmental conditions at the time of and following application.

Note: Certain varieties of grass may be sensitive to NUANCE®. When using NUANCE® for the first time on a particular variety, limit use to one 10 ounce container.

### **USE RATES AND TANK MIXES WITH OTHER HERBICIDES**

#### **BENTGRASS, BLUEGRASS, ANNUAL RYEGRASS, ORCHARDGRASS, FINE FESCUE AND TALL FESCUE**

**Seedling Stands:** For best results apply NUANCE® in a tank mix with another suitable broadleaf herbicide.

For use on annual ryegrass, orchard grass, tall fescue and fine fescue, apply at 0.17 ounce/acre after stand is in 4-leaf stage.

For use on bentgrass, apply at 0.17 ounce/acre after stolens are 3 to 5 inches across.

For use on bluegrass, apply at 0.17 to 0.33 ounce/acre after stand is in 4-leaf stage.

**Established Stands:** For stands that have been established for at least one growing season (fall or spring), apply NUANCE® at 0.17 to 0.33 ounce/A in a tank mix with another suitable broadleaf herbicide. Use the higher rate for larger weeds and hard to control weeds like wild carrot. Apply prior to jointing.

### **PERENNIAL RYEGRASS**

Perennial ryegrass is more sensitive to NUANCE® than other grass species. Crop injury in the form of stunting and possible reduced seed yield may occur. To minimize the risk of crop injury, use the 0.17 ounce/acre rate and always use either 2,4-D or dicamba and liquid nitrogen with NUANCE®.

**Seedling Stands:** Apply NUANCE® at 0.17 ounce/acre in a tank mix with another suitable broadleaf herbicide after grass is in 5- to 6-leaf stage.

**Established Stands:** For stands that have been established for one growing season (fall or

spring) apply NUANCE® at 0.17 ounce/acre to 0.33 ounce/acre in a tank mix with another suitable broadleaf herbicide. Apply prior to jointing.

**Note:** The 0.33 ounce rate of NUANCE® should be used only for the control or suppression of problem weeds like wild carrot where the benefit of weed control can be offset by possible crop injury including possible yield reduction.

### Tank Mixtures

Always use NUANCE® in a tank mix with another broadleaf herbicide such as 2,4-D, MCP or dicamba as these herbicides safen the effects of NUANCE® on grasses while improving weed control performance on most broadleaf weeds. Testing has shown that 2,4-D and dicamba are more effective in tank mix with NUANCE® than MCP. The addition of liquid fertilizer is also recommended. See "WITH LIQUID NITROGEN SOLUTION FERTILIZER" section of the label. Use a minimum of 1/4 to 1/2 lb. ai/A of 2,4-D or MCP (8 to 16 fluid ounces of 4 lb/gal product). Use a minimum of 1/8 to 1/4 lb ai/A of dicamba (such as 4 to 8 fluid ounces of "Banvel" or "Clarity").

### Liquid Fertilizer

NUANCE® can be applied with liquid fertilizers. Liquid fertilizers (20%, 28%, 32% N at a minimum of 4 gallons/100 gallons of spray solution) enhance the performance of NUANCE® and improve crop safety. Always use a surfactant and another broadleaf herbicide when using liquid fertilizer with NUANCE®.

## FOR WEED CONTROL IN NON-FOOD/NON-FEED GRASS GROWN FOR SEED PRODUCTION ONLY IN THE STATE OF MINNESOTA

NUANCE® is for use on selective postemergence control/suppression of certain broadleaf weeds in seedling and established stands of bluegrass and timothy grown for seed.

NUANCE® may be used on seedling and established perennial ryegrass providing user accepts all risk of possible crop injury and/or reduced seed yield. See "USE RATES" Portion.

NUANCE® may cause temporary yellowing and stunting of grass. Best results are obtained when NUANCE® is applied to young, actively growing weeds. The degree of control and duration of effect are dependent on the rate used, sensitivity and size of target weeds and environmental conditions at the time of the following application.

**Note:** Certain varieties of grass may be sensitive to NUANCE®. When using NUANCE® for the first time on a particular variety, limit use to one 10 ounce container.

## BLUEGRASS AND TIMOTHY

**Seedling Stands:** For best results apply NUANCE® in a tank mix with another suitable broadleaf herbicide. For use on timothy, apply at 0.17 oz/A after stand is in the 4-5 leaf stage. Always use in a tank mix with 2,4-D at 1/2 lb AI/A (1 pint of 4 lb/gal product). For use on bluegrass, apply at 0.10 to 0.25 oz/A after stand is in the 4 leaf stage.

**Established Stands:** For stands that have been established for at least one growing season (fall or spring), apply NUANCE® at 0.10 to 0.33 oz/A in a tank mix with another suitable broadleaf herbicide. Apply prior to jointing. For application on timothy, limit maximum use rate of 0.25 oz/A of NUANCE® and always use in a tank mix with 2,4-D at 1/2 lb AI/A (1 pint of 4 lb/gal product).

### PERENNIAL RYEGRASS

Perennial ryegrass is more sensitive to NUANCE® than other grass species. Crop injury in the form of stunting and possible reduced seed yield may occur. To minimize the risk of crop injury, use the 0.10 oz/A rate and always use either 2,4-D or "Clarity" and liquid nitrogen with NUANCE®.

**Seedling Stands:** For best results apply NUANCE® in a tank mix with another suitable broadleaf herbicide at 0.10 oz/A after grass is in the 5 to 6-leaf stage.

**Established Stands:** For stands that have been established for at least one growing season (fall or spring), apply NUANCE® at 0.10 to 0.25 oz/A in a tank mix with another suitable broadleaf herbicide. Apply prior to jointing

### Tank Mixtures

Always use NUANCE® in a tank mix with another broadleaf herbicide such as 2,4-D, MCP or dicamba as these herbicides safen the effects of NUANCE® on grasses while improving weed control performance on most broadleaf weeds. Testing has shown that 2,4-D, "BANVEL", and "CLARITY" provide the best overall weed control in a tank mix with NUANCE®. However, 2,4-D at 1/2 lb AI/A provides the best crop safening effects.

The addition of liquid fertilizer is also recommended. See "WITH LIQUID NITROGEN SOLUTION FERTILIZER" section of the label. Use a minimum of 1/4 to 1/2 lb. ai/A of 2,4-D or MCP (8 to 16 fluid ounces of 4 lb/gal product). Use a minimum of 1/16 to 1/4 lb ai/A of dicamba (such as 2 to 8 fluid ounces of "Banvel" or "Clarity").

### Liquid Fertilizer

NUANCE® can be applied with liquid fertilizers. Liquid fertilizers (20%, 28%, 32% N at a minimum of 4 gallons/100 gallons of spray solution) enhance the performance of NUANCE® and improve crop safety. Always use a surfactant and another broadleaf herbicide when using liquid fertilizer with NUANCE®.

### WEEDS CONTROLLED

The following weeds are controlled or suppressed:

- White cockle
- Nightflowering catchfly

### WEEDS PARTIALLY CONTROLLED OR SUPPRESSED\*

- Canada thistle

\* Partial Control or Suppression: A visual reduction in weed competition (reduced stand and/or vigor) compared to an untreated area.

### Surfactant

Always use a nonionic surfactant of at least 80% active ingredient at a rate of 0.25% volume/volume (1 quart per 100 gallon of spray solution).

### Precautions/Restrictions

The use of methylated seed oil (MSO) or crop oil is not recommended with NUANCE® on grass seed crops as these adjuvants may produce unsatisfactory crop injury.

Do not apply more than 0.33 ounces of NUANCE® per acre per growing season. Do not graze or cut for hay, or feed associated by-products to livestock, after application. Make last application of NUANCE® at least 60 days prior to harvest of grass seed. Do not apply NUANCE® in a tank mix with organophosphate insecticides as severe crop injury may occur. Do not apply to grass that is under stress from severe weather conditions, drought, low fertility, water saturated soil, disease or insect damage, as crop injury may result. Under certain conditions such as prolonged cool weather (daily high temperatures just prior to or soon after treatment, temporary yellowing and/or crop stunting may occur. Do not apply to Bermudagrass.

## FOR BUNCHBERRY CONTROL IN LOWBUSH BLUEBERRY ONLY IN THE STATE OF MAINE

NUANCE® may be used for selective postemergence control/suppression of certain broadleaf weeds in lowbush blueberry (or also known as, wild blueberry).

Apply NUANCE® at 0.53 to 0.66 ounce per acre in the fall after blueberry harvest, until a killing frost occurs, after which bunchberry control will not occur.

NUANCE® applied earlier in the fall will result in increased blueberry cover and increased bunchberry control in the following year. The degree and duration of effect are dependent upon the rate used, sensitivity and size of the target weeds, and environmental conditions at the time and following application.

### Surfactant

Always use a nonionic surfactant of at least 80% active ingredient at the rate of 0.25% volume/volume (1 quart per 100 gallon of spray solution).

### Precautions/Restrictions

The use of methylated seed oil (MSO) or crop oil is not recommended with NUANCE® on lowbush blueberry as these adjuvants may produce unsatisfactory crop injury.

Do not apply more than 0.66 ounce of NUANCE® per acre per growing season. Do not apply within 365 days of blueberry harvest. Do not apply NUANCE® in a tank mix with organophosphate insecticides as severe crop injury may occur.

Do not apply to lowbush blueberry that is under stress from severe weather conditions, drought, low fertility, water saturated soil, disease or insect damage, as crop injury may result. Under certain conditions such as prolonged cool weather (daily high temperature less than 50°F) or wide fluctuations in day/night temperatures just prior to or soon after treatment, temporary yellowing and/or crop stunting may occur.

## CROP ROTATION

Wheat, Barley and Triticale may be replanted anytime after the application of NUANCE®. Sugarbeets, Winter Rape and Canola can be planted at 60 days after the application of NUANCE®. Any other crop may be planted 45 days after the application of NUANCE®.

## GRAZING

Allow at least 7 days between application and grazing of treated forage. In addition, allow at least 7 days between application and feeding of forage from treated areas to livestock. Allow at least 30 days between application and feeding of hay from treated areas to livestock. Harvested straw may be used for bedding and/or feed. Allow at least 45 days between application and harvesting of grain.

## MIXING INSTRUCTIONS

1. Fill the tank 1/4 to 1/3 full of water.
2. While agitating, add the required amount of NUANCE®.
3. Continue agitation until the NUANCE® is fully dispersed, at least 5 minutes.
4. Once the NUANCE® is fully dispersed, maintain agitation and continue filling tank with water. NUANCE® should be thoroughly mixed with water before adding any other material.
5. As the tank is filling, add tank mixture partners (if desired) then add the required volume of spray adjuvant. Always add spray adjuvant last. Antifoaming agents may be used. Do not use with spray additives that alter the pH of the spray solution below pH 6.0 as rapid product degradation can occur. Spray solutions of pH 7.0 and higher allow for optimum stability of NUANCE®.
6. If the mixture is not continuously agitated, settling will occur. If settling occurs, thoroughly re-agitate before using.
7. Apply NUANCE® spray mixture within 24 hours of mixing to avoid product degradation.
8. If NUANCE® and a tank mixture partner are to be applied in multiple loads, pre-slurry the NUANCE® in clean water prior to adding to the tank. This will prevent the tank mixture partner from interfering with the dissolution of the NUANCE®.

## SPRAY EQUIPMENT

For specific application equipment, refer to the manufacturer's instructions for additional information on GPA, pressure speed, nozzle types and arrangements, and nozzle heights above the target canopy, etc.

Be sure to calibrate air or ground equipment properly before application. Select a spray volume and delivery system that will ensure thorough coverage and a uniform spray pattern with minimum drift. Use higher spray volumes to obtain better coverage when crop canopy is dense. Avoid swath overlapping, and shut off spray booms while starting, turning, slowing, or stopping, to avoid injury to the crop.

Do not make applications using equipment and/or spray volumes or during weather conditions that might cause spray to drift onto nontarget sites. For additional information on spray drift refer to "SPRAY DRIFT MANAGEMENT" section of label.

Continuous agitation is required to keep NUANCE® in suspension.

## SPRAY CLEANUP

The spray equipment must be cleaned before NUANCE® is sprayed. Follow the cleanup procedures specified on the labels of the previously applied products. If no directions are provided, follow the six steps outlined in the "AFTER SPRAYING NUANCE® AND BEFORE SPRAYING CROPS OTHER THAN WHEAT, BARLEY AND TRITICALE" section of this label.

### At The End Of The Day

When multiple loads of NUANCE® herbicide are applied, it is recommended that at the end of each day of spraying the interior of the tank be rinsed with fresh water and then partially filled, and the boom and hoses flushed. This will prevent the buildup of dried pesticide deposits, which can accumulate in the application equipment.

## AFTER SPRAYING NUANCE® AND BEFORE SPRAYING CROPS OTHER THAN WHEAT, BARLEY AND TRITICALE

To avoid subsequent injury to desirable crops, thoroughly clean all mixing and spray equipment immediately following applications of NUANCE® as follows:

1. Empty the tank and drain the sump completely. Remove any contamination on the outside of the spraying equipment by washing with clean water.
2. Spray the tank walls (including the lid) with clean water using a minimum volume of 10% of the tank volume. Add household ammonia at a solution rate of 1 gallon/100 gallon water or other similarly approved cleaner to the tank. Circulate the water through the lines, including all by-pass lines, for at least two minutes. Flush the boom well and empty the sprayer. Completely drain the sump.
3. Repeat step 2. For this rinse, the addition of household ammonia or other cleaner is not required.
4. Remove the strainers, nozzles, tips and screens and clean separately in a bucket containing water and ammonia solution.

If only ammonia is used as a cleaner, the rinsate solution may be applied to the crop(s) listed on this label. Do not exceed the maximum-labeled use rate. If other cleaners are used, consult the cleaner label for rinsate disposal instructions. If no instructions are given, dispose of the rinsate on site or at an approved waste disposal facility.

#### Notes:

1. Always start with a clean spray tank.
2. Steam-cleaning aerial spray tanks is recommended to facilitate the removal of any caked deposits.
3. When NUANCE® is tank mixed with other pesticides, all cleanout procedures for each product should be examined and the most rigorous procedure should be followed.
4. In addition to this cleanout procedure, all pre-cleanout guidelines on subsequently applied products should be followed as per the individual labels.

## SPRAY DRIFT MANAGEMENT

The interaction of many equipment and weather-related factors determines the potential for spray drift. The applicator is responsible for considering all these factors when making application decisions.

### AVOIDING SPRAY DRIFT IS THE RESPONSIBILITY OF THE APPLICATOR.

## IMPORTANCE OF DROPLET SIZE

The most effective way to reduce drift potential is to apply large droplets (>150 – 200 microns). The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. The presence of sensitive species nearby, the environmental conditions, and pest pressure may affect how an applicator balances drift control and coverage. APPLYING LARGER DROPLETS REDUCES DRIFT POTENTIAL, BUT WILL NOT PREVENT DRIFT IF APPLICATIONS ARE MADE IMPROPERLY OR UNDER UNFAVORABLE ENVIRONMENTAL CONDITIONS! See "WIND, TEMPERATURE AND HUMIDITY", and "SURFACE TEMPERATURE INVERSIONS" sections of this label.

### Controlling Droplet Size – General Techniques

- **Volume** – Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- **Pressure** – Use the lower spray pressures recommended for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. WHEN HIGHER FLOW RATES ARE NEEDED, USE A HIGHER CAPACITY NOZZLE INSTEAD OF INCREASING PRESSURE.
- **Nozzle Type** – Use a nozzle type that is designed for the intended application. With most nozzle types, narrower spray angles produce larger droplets. Consider using low drift nozzles.

### Controlling Droplet Size – Aircraft

- **Number of Nozzles** – Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.
- **Nozzle Orientation** – Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.
- **Nozzle Type** – Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

## Boom Length And Height

- **Boom Length (aircraft)** – The boom length should not exceed 0.75 of the wing length, using shorter booms decreases drift potential. For helicopters use a boom length and position that prevents droplets from entering the rotor vortices.
- **Boom Height (aircraft)** – Application more than 10 feet above the canopy increases the potential for spray drift.
- **Boom Height (ground)** – Setting the boom at the lowest height which provides uniform coverage reduces the exposure of droplets to evaporation and wind. The boom should remain level with the crop and have minimal bounce.

## WIND

Drift potential increases at wind speeds of less than 3 mph (due to variable direction and inversion potential) or more than 10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given wind speed. AVOID APPLICATIONS DURING GUSTY OR WINDLESS CONDITIONS.

**Note:** Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

## TEMPERATURE AND HUMIDITY

When making applications in hot and dry conditions, set up equipment to produce larger droplets to reduce effects of evaporation.

## SURFACE TEMPERATURE INVERSIONS

Drift potential is high during a surface temperature inversion. Surface inversions restrict vertical air mixing, which causes small suspended droplets to remain close to the ground and move laterally in a concentrated cloud. Surface inversions are characterized by increasing temperature with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates a surface inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

## SHIELDED SPRAYERS

Shielding the boom or individual nozzles can reduce the effects of wind. However, it is the responsibility of the applicator to verify that the shields are preventing drift and not interfering with uniform deposition of the product.

## CALIFORNIA APPLICATION REQUIREMENTS FOR PROTECTION OF SENSITIVE CROPS

The following drift management requirements must be followed to minimize the potential for exposure of sensitive crops.

Determine the prevailing wind speed and direction before application.

### Spray quality

Apply with nozzles that give a coarse droplet size spectrum (volume median diameter [VMD] of 350–400 microns) and minimize droplets that are less than 200 microns.

### For aerial application:

- **Nozzle orientation:** Solid stream nozzles oriented straight back produce the largest droplet size spectrum and the lowest drift.
- **Spray volume:** Apply a spray volume between 5 and 10 GPA.

- **Wind speed:** Avoid spraying when sustained wind speeds approach or exceed 10 mph. Avoid applications in gusty wind conditions.
- **Aircraft equipment:** Boom length should be 75 percent or less of wing span. For helicopters, use a boom length and position that prevents droplets from entering the rotor vortices.
- **Application height:** Application at more than 10 feet above the canopy increases the potential for spray drift. Applications must be made at the lowest application height that provides uniform coverage and should be consistent with safe operation of the aircraft.

### For ground application:

- **Wind Speed:** Avoid spraying when sustained wind speeds approach or exceed 10 mph. Avoid applications in gusty wind conditions.
- **Boom height – ground sprayers:** Apply with a boom height no greater than 4 feet above the top of the largest plants. The buffer zone may be reduced when application is made with a low boom (20 inches) above the top of the crop canopy. The boom should remain level with the crop and have minimal bounce.

### Buffer Zones

The following buffer zones between the treated area and sensitive crops are required when these sensitive crops are downwind of the application site.

Sensitive crop	Ground application		Aerial application
	low boom	Ground high boom	
Tomato, cucumber, sugarbeet	350 ft	500 ft	1300 ft
Other broadleaf crops	50 ft	50 ft	500 ft
Tree and vine crops	50 ft	50 ft	500 ft
Dormant tree and vine	No buffer required		

Tree and vine crops do not require buffer zones when crops are dormant.

## RESISTANCE

When herbicides that affect the same biological site of action are used repeatedly over several years to control the same weed species in the same field, naturally-occurring resistant biotypes may survive a correctly applied herbicide treatment, propagate, and become dominant in that field. Adequate control of these resistant weed biotypes cannot be expected. If weed control is unsatisfactory, it may be necessary to retreat the problem area using a product affecting a different site of action.

To better manage herbicide resistance through delaying the proliferation and possible dominance of herbicide resistant weed biotypes, it may be necessary to change cultural practices within and between crop seasons such as using a combination of tillage, retreatment, tank-mix partners and/or sequential herbicide applications that have a different site of action. Weed escapes that are allowed to go to seed will promote the spread of resistant biotypes.

It is advisable to keep accurate records of pesticides applied to individual fields to help obtain information on the spread and dispersal of resistant biotypes. Consult your agricultural dealer, consultant, applicator, and/or appropriate state agricultural extension service representative for specific alternative cultural practices or herbicide guidance available in your area.

## INTEGRATED PEST MANAGEMENT

This product may be used as part of an Integrated Pest Management (IPM) program which can include biological, cultural, and genetic practices aimed at preventing economic pest damage. IPM principles and practices include field scouting or other detection methods, correct target pest identification, population monitoring, and treating when target pest populations reach locally determined action thresholds. Consult your state cooperative extension service, professional consultants or other qualified authorities to determine appropriate action treatment threshold levels for treating specific pest/crop or site systems in your area.

## PRECAUTIONS

- Varieties of wheat (including durum), barley and triticale may differ in their response to various herbicides. Consult your state experiment station, university, or extension agent as to crop sensitivity to any herbicide. If no information is available, limit the initial use to a small area.
- Under certain conditions such as heavy rainfall, prolonged cold weather, or wide fluctuations in day/night temperatures prior to or soon after NUANCE® application, temporary discoloration and/or crop injury may occur. To reduce the potential of crop injury, tank mix NUANCE® with 2,4-D (ester formulations perform best - see the "TANK MIXTURES" section of this label) and apply after the crop is in the tillering stage of growth.
- NUANCE® should not be applied to wheat, barley or triticale that is stressed by severe weather conditions, drought, low fertility, water-saturated soil, disease, or insect damage, as crop injury may result. Risk of injury is greatest when crop is in the 2 to 5- leaf stage. Severe winter stress, drought, disease, or insect damage following application also may result in crop injury.
- Do not apply to wheat, barley or triticale underseeded with another crop.
- Dry, dusty field conditions may result in reduced control in wheel track areas.
- Injury to or loss of desirable trees or vegetation may result from failure to observe the following:
  - Do not apply, drain or flush equipment on or near desirable trees or other plants or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
  - Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants.
- Injury to or loss of adjacent sensitive crops and vegetation may result from failure to observe the following:
  - Take all necessary precautions to avoid all direct or indirect contact (such as spray drift) with non-target plants or areas.
  - Carefully observe all sprayer cleanup instructions both prior to and after using this product, as spray tank residue may damage crops other than wheat or barley.

## STORAGE AND DISPOSAL

Do not contaminate water, food, or feed by storage and disposal.

**Pesticide Storage:** Store product in original container only. Do not contaminate water, other pesticides, fertilizer, food or feed in storage.

Store in a cool, dry place.

**Pesticide Disposal:** Wastes resulting from the use of this product must be disposed of on site or at an approved waste disposal facility.

### CONTAINER DISPOSAL:

**Nonrefillable plastic and metal containers (capacity equal to or less than 50 pounds):** Nonrefillable container. Do not reuse or refill this container. Triple rinse container (or equivalent) promptly after emptying. Triple rinse as follows: Empty remaining contents into application or a mix tank. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank and store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times. Offer for recycling if available or puncture and dispose of in a sanitary landfill. Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by State and local authorities. Plastic containers are also disposable by incineration, or if allowed by State and local authorities, by burning. If burned, stay out of smoke.

**NOTICE TO BUYER:** Purchase of this material does not confer any rights under patents of countries outside of the United States.

## WARRANTY DISCLAIMER

Cheminova warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes stated on the label when used in strict accordance with the directions, subject to the inherent risks set forth below. TO THE EXTENT CONSISTENT WITH APPLICABLE LAW, CHEMINOVA MAKES NO OTHER EXPRESS OR IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER EXPRESS OR IMPLIED WARRANTY.

## INHERENT RISKS OF USE

It is impossible to eliminate all risks associated with use of this product. Crop injury, lack of performance, or other unintended consequences may result because of such factors as use of the product contrary to label instructions (including conditions noted on the label, such as unfavorable temperatures, soil conditions, etc.), abnormal conditions (such as excessive rainfall, drought, tornadoes, hurricanes), presence of other materials, the manner of application, or other factors, all of which are beyond the control of Cheminova or the seller. All such risks shall be assumed by Buyer.

## LIMITATION OF REMEDIES

To the extent consistent with applicable law, the exclusive remedy for losses or damages resulting from this product (including claims based on contract, negligence, strict liability, or other legal theories), shall be limited to, at Cheminova's election, one of the following:

- (1) Refund of purchase price paid by buyer or user for product bought, or
- (2) Replacement of amount of product used.

Cheminova shall not be liable for losses or damages resulting from handling or use of this product unless Cheminova is promptly notified of such loss or damage in writing. In no case shall Cheminova be liable for consequential or incidental damages or losses.

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