WHEAT (INCLUDING SPRING AND WINTER)

General Information

Product Information

Instinct HL nitrogen stabilizer is a water-based microencapsulated formulation of nitrapyrin that may be used in the application of ammoniacal dry fertilizers (such as urea, AMS, MAP, DAP), aqua ammonia, other liquid ammoniacal or urea nitrogen fertilizer compositions (such as 28%, 30% or 32% UAN), or manure. Instinct HL is not a substitute for fertilizer.

Incorporation may occur at any time up to 10 days after application and may be either by mechanical means or by moisture (rainfall or overhead irrigation). For moisture incorporation, a minimum of 0.5 inch of moisture is necessary. If 0.5 inch of moisture does not occur within the 10-day window, incorporate mechanically with light tillage.

Precautions and Restrictions

Instinct HL is no more corrosive to standard liquid fertilizer equipment than liquid fertilizer alone or liquid manure alone.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The potential for spray drift is determined by the interaction of many equipment-and-weather-related factors. The applicator and the grower are responsible for considering all these factors when making decisions.

Do not apply when weather conditions may cause drift to nontarget areas.

Applications must be made at the lowest height above the target area that still provides uniform coverage of the target. Making applications at the lowest yet effective height reduces exposure of droplets to wind.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications to agricultural field crops.

These requirements do not apply to applications using dry formulations or impregnated dry fertilizer.

1. The distance of the outer most nozzles on the boom must not exceed 3/4 the length of the wingspan or 95% of rotor diameter.

Where certain states have more stringent regulations, they must be observed.

The applicator must be familiar with and take into account the information covered in the following Aerial Spray Drift Advisory Information section.

Aerial Spray Drift Advisory Information

This section is advisory in nature and does not supersede mandatory label requirements.

For applications with liquid fertilizer, liquid pesticides, or other liquid carrier, use medium or coarse spray nozzles. The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. 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 Temperature Inversion section of the label).

Controlling Droplet Size:

- Volume - Use high flow rate nozzles to apply the highest practical spray volume. Nozzles with higher rated flows produce larger droplets.
- Pressure - Do not exceed the nozzle manufacturer's specified pressures. Use the lower spray pressures specified for the nozzle. Higher pressure reduces droplet size and does not improve canopy penetration. When higher flow rates are needed, use higher flow rate nozzles instead of increasing pressure.
- Number of nozzles - Use the minimum number of nozzles that provide uniform coverage.
- Nozzle Orientation- Orienting nozzles so that the spray is released backwards, parallel to the airstream will produce larger droplets than other orientations. Significant deflection from the horizontal will reduce droplet size and increase drift potential.
- 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. Solid stream nozzles oriented straight back produce larger droplets and lower drift than other nozzle types.

Boom Length: For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan length or 95% rotor diameter may further reduce drift without reducing swath width.

Application Height: Do not make applications at a height greater than 10 feet above the top of the intended target unless a greater height is required for aircraft safety or for uniform application of the intended spray width when liquid fertilizer is the carrier. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

Swath Adjustment: When applications are made with a cross-wind, the swath will be displaced downwind. Therefore, on the up and downwind edges of the field, the applicator must compensate for this displacement by adjusting the path of the aircraft upwind. Increase swath adjustment distance with increasing drift potential (higher wind, smaller drops, etc.).

Wind: Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed. Avoid application below 2 mph due to variable wind direction and high inversion potential. Note: Local terrain can influence wind patterns. Every applicator must be f a miliar with local wind patterns and how they affect spray drift.

Temperature and Humidity: When making applications in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature Inversions: Do not apply during a temperature inversion, because drift potential is high. Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures 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. The presence of inversion conditions can be indicated by ground fog. However, if fog is not present, the movement of smoke from a ground source or an aircraft smoke generator can

also identify inversion conditions. Smoke that layers and moves laterally in a concentrated cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas: Apply this pesticide when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat for threatened or endangered species, non-target crops) is minimal (e .g., when wind is blowing away from the sensitive areas).

Application Directions

Aerial Application Instinct HL may be applied by aircraft in a liquid carrier such as liquid fertilizer or pesticides, or as impregnated on a granular fertilizer. See Spray Drift Management and Aerial Spray Drift Advisory Information to reduce likelihood of drift on other crops or non-target areas.

Ground Application Instinct HL may be applied through ground application equipment that may be used in the application of ammoniacal dry or liquid fertilizers, or manure.

Chemigation In corn, Instinct HL may be applied through properly equipped chemigation systems at a preplant or postplant application timing prior to crop emergence. In wheat, Instinct HL may be applied through properly equipped chemigation systems preplant up to the 1st detectable joint (Feekes 6 or Zadock 31) growth stage. Unless otherwise indicated in specific use directions, the application rates for chemigation are the same as those specified for broadcast applications.

Directions for Chemigation Instinct HL may be applied through the following irrigation systems: center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, micro sprinkler, drip, hand move, or other systems that provide uniform application. Do not apply through sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units.

Chemigation Equipment Preparation Thoroughly clean the chemigation system and tank of any fertilizer or chemical residues, and dispose of the residues according to state and federal laws. Flush the injection system with soap and/or a cleaning agent and water. Determine the amount of Instinct HL needed to cover the desired acreage. Mix according to instructions in the Mixing Direction section and bring

mixture to desired volume. Maintain continuous agitation during mixing and throughout the application period.

Chemigation Equipment Calibration In order to calibrate the irrigation system and injector to apply the mixture containing Instinct HL, calculate or determine the following.
- Calculate the number of acres to be irrigated by the system.
- Calculate the amount of Instinct HL required and other crop inputs such as fertilizers, insecticides, or herbicides.
- Determine the irrigation rate and determine the number of minutes for the system to cover the intended treatment area.
- Divide the total gallons of Instinct HL mixture needed by the number of minutes (minus time to flush out) to cover the treatment area. The following value equals the gallons per minute output that the injector or educator must deliver. Convert the gallons per minute to milliliters or ounces per minute, if needed.
- Calibrate the injector pump with the system in operation at the desired irrigation rate. It is suggested that the timed output of the injector pump be checked at least twice before operation and the system monitored during operation.

Chemigation Equipment Requirements

- The system must contain an air gap, an approved backflow prevention device, a functional check valve, vacuum relief valve (including inspection port), and/or low-pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow. Refer to the American Society of Agricultural Engineer’s Engineering Practice 409 for more information or state specific regulations.
- The Instinct HL mixture injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
- The Instinct HL mixture 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 Instinct HL mixture injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch that

will stop the water pump when the water pressure decreases to the point where the Instinct HL mixture 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 the Instinct HL mixture and capable of being fitted with a system interlock.
- To ensure uniform mixing of the Instinct HL mixture into the water line, inject the mixture through a nozzle placed in the fertilizer injection port or just ahead of an elbow or tee in the irrigation line so that the turbulence will assist in mixing. The injection point must be located after all back-flow prevention devices on the water line.
- The tank holding the Instinct HL mixture must be free of rust, sediment and foreign material and equipped with an in-line strainer situated between the tank and the injector point.

Chemigation Operation Start the water pump and irrigation system and let the system achieve the desired pressure and speed before starting the injector. Check for leaks and uniformity and make repairs before any chemigation takes place. Start the injector system and calibrate according to manufacturer’s specifications. The following procedure is necessary to deliver the desired rate per acre in a uniform manner. When the application is finished, flush and clean the entire irrigation and injector system prior to shutting down the system to remove any Instinct HL, herbicide, insecticide or fertilizer residue from the system.

Chemigation Precautions

- Crop injury, lack of effectiveness, or illegal pesticide residues in crop can result from non-uniform distribution of treated water.
- If you have questions about calibration, contact state extension service specialist, equipment manufacturers or other experts.
- A person knowledgeable of the chemigation system and responsible for its operation, or under the supervision of the responsible person, shall operate the system and make necessary adjustments should the need arise and continuously monitor the injection.

Chemigation Restrictions

- The Instinct HL mixture pipeline must contain a functional, automatic quick-closing check valve to prevent the flow fluid back toward the injection

- The Instinct HL mixture injection pipeline must 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 Instinct HL mixture injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where Instinct HL mixture 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 the Instinct HL mixture and capable of being fitted with a system interlock.
- Do not allow irrigation water to collect or runoff and pose a hazard to livestock, wells or adjoining crops.
- Do not apply through sprinkler systems that deliver a low coefficient of uniformity such as certain water drive units.
- Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label-prescribed safety devices for public water systems are in place.

Limitations, Restrictions, and Exceptions

Wheat (including Spring and Winter)

Instinct HL may be mixed alone or in combination with dry ammoniacal fertilizers (such as urea, AMS, MAP, DAP), liquid manures, liquid ammoniacal fertilizers (such as UAN, aqua ammonia, or urea fertilizers), insecticides, fungicides, herbicides, and/or water.

Preplant, Preemergence, At-Plant Row or Band Injection Application

Use Instinct HL at the rate of 24 to 48 fl oz per acre.

Liquid Fertilizers: Use Instinct HL at the rate of 24 to 48 fl oz per acre at a preplant, preemergence, or band injection application. Instinct HL may also be applied at 24 to 48 fl oz per acre to actively growing wheat from emergence through 1st detectable joint (Feekes 6 or Zadock 31 growth stage). These applications may be injected, dribbled, or broadcast applied to the crop. Liquid fertilizers broadcast

across actively growing wheat can cause leaf necrosis.

Restrictions:

- Do not apply more than a 1 lb ai nitrapyrin per acre per year on wheat.
- Any postplant application of Instinct HL must be applied prior to 1st detectable joint (Feekes 6 or Zadock 31 growth stage).
- Replant restriction: All crops (except for leafy vegetables and root and tuber crops) may be planted 30 days or more after last application. Do not plant leafy vegetable crops less than 120 days after last application. Do not plant root and tuber crops less than one year after last application.

Method
Broadcast/Foliar Ground
Band Injection
Broadcast/Foliar Ground
Band Injection
Broadcast/Foliar Ground
Band Injection
Rates
field_rates 0

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Restricted Entry Interval

24 hours
Exception: If the product is soil-injected or soil incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

Timings
At-Plant
Preemergence (Crop)
Preplant