

# **CORN - LIQUID MANURE**

## General Information

### Product Information

Instinct II nitrogen stabilizer is a water-based microencapsulated formulation of nitrapyrin that may be used in the application of aqua ammonia, other liquid ammoniacal or urea nitrogen fertilizer compositions such as 28%, 30% or 32% UAN. Instinct II 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 II is no more corrosive to standard liquid fertilizer equipment than liquid fertilizer alone or liquid manure alone.

### Application Directions

**Aerial Application** Instinct II 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 II may be applied through ground application equipment that may be used in the application of aqua ammonia, other liquid ammoniacal or urea nitrogen fertilizer compositions such as 28%, 30% or 32% UAN

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

**Directions for Chemigation** Apply this product only through the following irrigation

systems: center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, hand move, micro sprinkler, or drip. Do not apply this product through any other type of irrigation system. 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 II 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 II determine the following.

- Calculate the number of acres irrigated by the system.
- Calculate the amount of Instinct II required and other premixes 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 II 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 II 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 II 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 II 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 II 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 II mixture and capable of being fitted with a system interlock.
- To ensure uniform mixing of the Instinct II 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 II 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 II, herbicide, insecticide or fertilizer residue from the system.

### Chemigation Precautions

- 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, 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

- 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.
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- The Instinct II 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 of the Instinct II 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 II 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 II 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.

## Mixing Directions

### Liquid Fertilizers

Instinct II may be mixed with liquid fertilizers, such as aqua ammonia, or other liquid ammoniacal or urea nitrogen fertilizers. Instinct II can be added to urea ammonium nitrate liquid fertilizer without a compatibility agent, although when mixing Instinct II with fertilizer plus herbicides or insecticides, a jar test may indicate that a compatibility agent is needed.

There are two methods which may be used to create a stable emulsion with Instinct II plus a compatibility agent in liquid fertilizer:

**Premix Method:** The compatibility agent and Instinct II may be mixed together in a separate container and then added to the liquid fertilizer. Continuously agitate as the mixture is added to the fertilizer.

**Sequential Method:** The compatibility agent may be added to the fertilizer and thoroughly agitated. While the agitation continues, the required amount of Instinct II may be added to the tank.

Most phosphate ester types of compatibility agents are suitable for use in these mixtures. Follow the label directions for the compatibility agent to determine rates and any use precautions.

### Liquid Manure

Use Instinct II at the rate of 37 to 74 fl oz per acre. Use the 74 fl oz per acre rate for all fall applications with animal manure. To ensure uniform mixing, Instinct II may need to be premixed with a phosphate ester compatibility agent at a ratio of 1 part phosphate ester compatibility agent to 8 parts Instinct II before adding Instinct II to the liquid animal manure.

### Granular Ammonium and Urea

Instinct II may be impregnated on urea and most dry ammoniacal fertilizers or

fertilizer blends containing ammoniacal fertilizers. Uniform application in the field is necessary to insure optimum results.

Various equipment can be used to impregnate Instinct II onto dry fertilizers, including vertical and horizontal mixers. Once impregnated, fertilizer may be applied with either spinner, airflow, or other suitable equipment. Apply Instinct II at a rate of 37 fl oz per acre. Use a minimum of 100 lb of dry fertilizer per acre. With lower rates of fertilizer (higher concentrations of Instinct II), the fertilizer may not readily absorb all of the liquid. For a suitable free-flowing mixture, add a drying agent, such as Hi-Sil 233, MP-79, RVM or LVM clay granules, or pelletized limestone to the mixture. Use 1 lb of drying agent per pint of Instinct II unless experience indicates a different amount works well. Do not apply more than 1 lb ai nitrapyrin per acre per year.

Immediately apply bulk fertilizers impregnated with Instinct II. Do not store the impregnated fertilizer. All individual state regulations, including those related to dry bulk blending registration, labeling and application, are the responsibility of the individual and/or company selling mixtures of Instinct II and fertilizer.

Do not mix seed with dry fertilizers impregnated with Instinct II.

### Tank Mixing

Instinct II may also be applied in tank mixtures with preplant incorporated or preemergence herbicides or insecticides registered for use on corn, spring wheat, or winter wheat. The tank mixes may be in water or in most urea-ammonium nitrate solutions, N-P-K solutions, slurries, or suspensions. Check the physical compatibility of these mixtures as indicated below. Maintain constant agitation during both mixing and application to ensure uniformity of the spray mixture. Read and carefully follow all applicable directions including dosage rates, restrictions, and precautions on labeling for the other products used in combination with Instinct II.

For best results, add the herbicide(s) to the tank after Instinct II and the compatibility agent (if used) have been thoroughly mixed. Add wettable powders or flowables before emulsifiable concentrates. Continuously agitate during the mixing cycle.

**Tank Mix Compatibility Test:** To test the compatibility of Instinct II with liquid fertilizers and/or herbicide or insecticide mixes, add proportionate amounts of each ingredient to a small jar, cap, shake, and let stand for 15 minutes. Formation of

precipitates or layers that do not readily redisperse indicates an incompatible mixture and should not be used.

## Limitations, Restrictions, and Exceptions

### Corn

Instinct II may be mixed alone or in combinations with liquid fertilizers, such as UAN, aqua ammonia, or other liquid ammoniacal or urea nitrogen fertilizers, insecticides, herbicides and/or water and applied as a preplant incorporated, preemergence or postplant, application

Liquid Manure: Use Instinct II at the rate of 37 to 74 fl oz per acre when fall applied with liquid manure or a minimum of 37 fl oz per acre when applied with liquid manure in the spring. Applying Instinct II with liquid manure in the spring is limited to a preplant application only.

The best practice for manure fertilizer utilization is to inject liquid manure in to the soil, however surface applications are also permitted.

### Restrictions:

- Do not apply more than a total of 74 fl oz of Instinct II (1 lb ai nitrapyrin) per acre per year on corn.
- Replant restriction: Do not plant any crops less than 30 days after the last application. Do not plant leafy vegetable crops less than 120 days after the last application. Do not plant root and tuber crops less than one year after the last application.

### Method

#### [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](#)