BASF
The Chemical Company

GROUP 11 FUNGICIDE

SPECIMEN

Headline® fungicide

For use in disease control and plant health in the following crops:

Barley, citrus fruit, corn (all types), cotton, dried shelled peas and beans, edible podded legume vegetables, grass grown for seed, mint, oats, peanut, pecan, rye, soybean, succulent shelled peas and beans, sugar beet, sunflower, tuberous and corm vegetables (includes potato), wheat, and triticale

Active Ingredient*:

pyraclostrobin: (carbamic acid, [2-[[[1-(4-chlorophenyl)-1*H*-pyrazol-3-yl]oxy]methyl]phenyl]methoxy-, methyl ester)	23.6%
Other Ingredients:**	76.4%
Total:	100.0%

* Equivalent to 2.09 pounds of pyraclostrobin per gallon.
** Contains petroleum distillates.

EPA Reg. No. 7969-186 **EPA Est. No.**

KEEP OUT OF REACH OF CHILDREN

WARNING/AVISO

Si usted no entiende la etiqueta, busque a alguien para que se la explique a usted en detalle. (If you do not understand this label, find someone to explain it to you in detail.)

See inside booklet for complete **First Aid**, **Precautionary Statements**, **Directions For Use**, **Conditions of Sale and Warranty**, and state-specific crop and/or use site restrictions.

In case of an emergency endangering life or property involving this product, call day or night 1-800-832-HELP (4357).

Net Contents:

BASF Corporation
26 Davis Drive, Research Triangle Park, NC 27709

FIRST AID	
If swallowed	• Call a poison control center or doctor immediately for treatment advice. • Have person sip a glass of water if able to swallow. • **DO NOT** induce vomiting unless told to do so by a poison control center or doctor. • **DO NOT** give anything by mouth to an unconscious person.
If on skin or clothing	• Take off contaminated clothing. • Rinse skin immediately with plenty of water for 15 to 20 minutes. • Call a poison control center or doctor for treatment advice.
If in eyes	• Hold eyes open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after first 5 minutes; then continue rinsing eyes. • Call a poison control center or doctor for treatment advice.
If inhaled	• Move person to fresh air. • If person is not breathing, call 911 or an ambulance; then give artificial respiration, preferably by mouth to mouth, if possible. • Call a poison control center or doctor for further treatment advice.
Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.	
HOTLINE NUMBER	
Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may also contact BASF Corporation for emergency medical treatment information: 1-800-832-HELP (4357).	

Precautionary Statements

Hazards to Humans and Domestic Animals

WARNING. May be fatal if swallowed. Causes substantial but temporary eye injury. Causes skin irritation. Harmful if absorbed through skin. Avoid contact with eyes, skin or clothing.

Personal Protective Equipment (PPE)

Some materials that are chemically resistant to this product are listed below. For more options, refer to **Category A** on an EPA chemical-resistance category selection chart.

Applicators and other handlers must wear:

- Coveralls over short-sleeved shirt and short pants
- Protective eyewear (goggles, face shield, or safety glasses)
- Socks
- Chemical-resistant footwear
- Chemical-resistant gloves made of any waterproof material (such as nitrile, butyl, neoprene and/or barrier laminate)
- Chemical-resistant headgear for overhead exposure
- Chemical-resistant apron when cleaning equipment, mixing and loading.

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

Engineering Controls Statement

When handlers use closed systems, enclosed cabs, or aircraft in a manner that meets the requirements listed in the Worker Protection Standard (WPS) for agricultural pesticides [40 CFR 170.240(d)(4-6)], the handler PPE requirements may be reduced or modified as specified in the WPS.

USER SAFETY RECOMMENDATIONS

Users should:

- Wash hands before eating, drinking, chewing gum, using tobacco, or using the toilet.
- Remove clothing/PPE immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.
- 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

This product may contaminate water through drift of spray in wind. This product has a potential for runoff for several months or more after application. Poorly draining soils and soils with shallow water tables are more prone to produce runoff that contains this product. A level, well-maintained vegetative buffer strip between areas to which this product is applied and surface water features such as ponds, streams, and springs will reduce the potential for contamination of water from rainfall runoff. Runoff of this product will be reduced by avoiding applications when rainfall is forecast to occur within 48 hours. Sound erosion control practices will reduce this product's contribution to surface water contamination.

This pesticide is toxic to fish and aquatic invertebrates. Drift and runoff may be hazardous to aquatic organisms in water adjacent to treated areas.

DO NOT apply directly to water, areas where surface water is present, or intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwaters or rinsate.

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 (WPS), 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), notification to workers, and restricted-entry interval. 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 that 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 nitrile, butyl, neoprene, and/or barrier laminate)
- Shoes plus socks

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal.

Pesticide Storage

Store in original containers only. Keep container closed when not in use. **DO NOT** store near food or feed.

Pesticide Disposal

Wastes resulting from using this product may be disposed of on-site or at an approved waste disposal facility. If these wastes cannot be disposed of according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representatives at the nearest EPA Regional Office for guidance.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Handling

Nonrefillable Container. DO NOT reuse or refill this container. Triple rinse or pressure rinse container (or equivalent) promptly after emptying; then offer for recycling, if available, or reconditioning, if appropriate, or puncture and dispose of in a sanitary landfill, or by incineration, or by other procedures approved by state and local authorities.

Triple rinse containers small enough to shake (capacity ≤ 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank and drain for 10 seconds after the flow begins to drip. Fill the container 1/4 full with water and recap. Shake for 10 seconds. Pour rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Drain for 10 seconds after the flow begins to drip. Repeat this procedure two more times.

Triple rinse containers too large to shake (capacity > 5 gallons) as follows: Empty the remaining contents into application equipment or a mix tank. Fill the container 1/4 full with water. Replace and tighten closures. Tip container on its side and roll it back and forth, ensuring at least one complete revolution, for 30 seconds. Stand the container on its end and tip it back and forth several times. Turn the container over onto its other end and tip it back and forth several times. Empty the rinsate into application equipment or a mix tank, or store rinsate for later use or disposal. Repeat this procedure two more times.

Pressure rinse as follows: Empty the remaining contents into application equipment or mix tank and continue to drain for 10 seconds after the flow begins to drip. Hold container upside down over application equipment or mix tank, or collect rinsate for later use or disposal. Insert pressure rinsing nozzle in the side of the container and rinse at about 40 PSI for at least 30 seconds. Drain for 10 seconds after the flow begins to drip.

Refillable Container. Refill this container with **Headline® fungicide** only. **DO NOT** reuse this container for any other purpose. Triple rinsing the container before final disposal is the responsibility of the person disposing of the container. Cleaning before refilling is the responsibility of the refiller.

Triple rinse as follows: To clean the container before final disposal, empty the remaining contents from this container into application equipment or mix tank. Fill the container about 10% full with water. Agitate vigorously or recirculate water with the pump for 2 minutes. Pour or pump rinsate into application equipment or rinsate collection system. Repeat this rinsing procedure two more times.

(continued)

STORAGE AND DISPOSAL *(continued)*

When this container is empty, replace the cap and seal all openings that have been opened during use; return the container to the point of purchase or to a designated location. This container must only be refilled with **Headline® fungicide**. Prior to refilling, inspect carefully for damage such as cracks, punctures, abrasions, worn-out threads and closure devices. Check for leaks after refilling and before transport. **DO NOT** transport if this container is damaged or leaking. If the container is damaged, or leaking, or obsolete and not returned to the point of purchase or to a designated location, triple rinse emptied container and offer for recycling, if available, or dispose of container in compliance with state and local regulations.

In Case of Spill

In case of large-scale spillage regarding this product, call:

CHEMTREC	1-800-424-9300
BASF Corporation	1-800-832-HELP (4357)

Steps to be taken in case material is released or spilled:

In case of spill on floor or paved surfaces, mop and remove to chemical waste storage area until proper disposal can be made if product cannot be used according to label.

Dike and contain the spill with inert material (sand, earth, etc.) and transfer liquid and solid diking material to separate containers for disposal. Remove contaminated clothing and wash affected skin areas with soap and water. Wash clothing before reuse. Keep the spill out of all sewers and open bodies of water.

I. Product Information

This package contains **Headline**, an emulsifiable concentrate (EC). The active ingredient in **Headline**, pyraclostrobin, is a member of the **strobilurin class of chemistry** and is derived from a natural antifungal substance. Preventive applications optimize disease control, resulting in improved plant health.

To maximize disease control, apply **Headline** in a regularly scheduled protective spray program and use in a rotation program with other fungicides.

Because of its high specific activity, **Headline** has good residual activity against target fungi.

Headline is not for use in greenhouse or transplant production.

Mode of Action

Pyraclostrobin, the active ingredient of **Headline**, belongs to the group of respiration inhibitors classified by the U.S. EPA and Canada PMRA as Quinone Outside Inhibitors (QoI) or target site of action **Group 11** fungicides.

Resistance Management

Headline contains pyraclostrobin, a **Group 11** fungicide, and is effective against pathogens resistant to fungicides with modes of action different from those of QoI fungicides (target site **Group 11**), such as dicarboximides, sterol inhibitors, benzimidazoles, or phenylamides.

Fungal isolates resistant to **Group 11** fungicides, such as pyraclostrobin, azoxystrobin, fluoxastrobin, trifloxystrobin, and kresoxim-methyl, may eventually dominate the fungal population if **Group 11** fungicides are used predominantly and repeatedly in the same field in successive years as the primary method of control for the targeted pathogen species. This may result in reduction of disease control by **Headline** or other **Group 11** fungicides.

To maintain the performance of **Headline** in the field, **DO NOT** exceed the maximum seasonal use rate or the total number of applications of **Headline** per season and the maximum number of applications of **Headline** stated in sections **V** and **VI**. Adhere to the label instructions regarding the use of **Headline** or other target site of action **Group 11** fungicides that have a similar site of action on the same pathogens.

When using a **Group 11** fungicide as a solo product, the number of applications should be no more than 1/3 of the total number of fungicide applications per season.

In programs in which tank mixes or pre-mixes of a **Group 11** fungicide with a fungicide of another group are utilized, the number of **Group 11** fungicide (QoI)-containing applications should be no more than 1/2 of the total number of fungicide applications per season.

In programs in which applications of **Group 11** fungicides are made with both solo products and mixtures, the number of **Group 11** fungicide (QoI)-containing applications should be no more than 1/2 of the total number of fungicide applications per season.

In fungicide alternation programs of **Group 11** (QoI)-containing fungicides with non-**Group 11** fungicides of different modes of action, the maximum number of sequential applications stated in the crop-specific applications in sections **V** and **VI** should be alternated with at least an equal number of applications of a non-**Group 11**-containing fungicide prior to using the **Group 11** (QoI)-containing fungicide again. For example, in cases where two sequential applications of a **Group 11** (QoI)-containing fungicide are made, this block of applications should be followed by 2 or more applications of a non-**Group 11**-containing fungicide prior to using the **Group 11** (QoI)-containing fungicide again.

Resistance Management Advisory

The following recommendations may be considered to delay the development of fungicide resistance:

1. Tank mixtures. Use tank mixtures with effective fungicides from different target-site-of-action groups that are registered/permitted for the same use and that are effective against the pathogens of concern.

Use at least the minimum labeled rates of each fungicide in the tank mix.

2. IPM. Headline® fungicide should be integrated into an overall disease and pest management program. Cultural practices known to reduce disease development should be followed. Consult your local extension specialist, certified crop advisor and/or BASF representative for additional IPM strategies established for your area. **Headline** may be used in agricultural extension advisory (disease forecasting) programs, which recommend application timing based on environmental factors favorable for disease development.

3. Monitoring. Monitor efficacy of all fungicides used in the disease management program against the targeted pathogen and record other factors that may influence fungicide performance and/or disease development. If a **Group 11** target-site fungicide, such as **Headline**, appears to be less effective against a pathogen that it previously controlled or suppressed, contact a BASF representative, local extension specialist, or certified crop advisor for further investigation.

Cleaning Spray Equipment
Spraying equipment must be cleaned thoroughly before and after applying this product, particularly if a product with the potential to injure crops was used prior to **Headline**.

II. Application Instructions

Apply rates of **Headline** as instructed in the **Crop-specific Requirements** section of the **Headline** container label. Apply **Headline** with ground sprayer, aerial equipment or through sprinkler irrigation equipment. Equipment should be checked frequently for calibration.

Under low-level disease conditions, the minimum application rates can be used while maximum application rates and shortened spray schedules are recommended for severe or threatening disease conditions.

Ground Application. Apply **Headline** in sufficient water to ensure thorough coverage of foliage, blooms, and fruit. Thorough coverage is required for optimum disease control. For ground application to corn, refer to the **Restrictions for Use of Adjuvants or Crop Oil in Corn** section.

Aerial Application. Unless otherwise specified on this label, use no less than 5 gallons of spray solution per acre. For aerial application to citrus orchards, use no less than 10 gallons of spray solution per acre. **DO NOT** apply when conditions favor drift from target area.

Aerial application to barley, corn, oats, rye, soybeans, wheat and triticale.
Aerial applications of **Headline** may be made to barley, corn, oats, rye, soybeans, wheat and triticale in water volumes of 2 or more gallons of spray solution per acre (gpa). The use of a crop oil or adjuvant may be used to improve spray coverage (for use of adjuvants or crop oil in corn, refer to **Restrictions for Use of Adjuvants or Crop Oil in Corn** section). Refer to the adjuvant product label for specific use directions and restrictions. For optimum results in cases of high disease pressure, use a minimum spray volume of 4 gpa.

Select spray nozzles, pumping pressure, and sprayer height to provide medium-to-fine spray droplets that penetrate throughout the crop canopy. Spray calibration must be conducted to confirm spray droplet sizes. Continue to monitor spray application (including weather conditions) to assure proper droplet size and canopy penetration.

Restrictions for Use of Adjuvants or Crop Oil in Corn.
DO NOT use adjuvants or crop oil after the V8 stage and prior to the VT stage unless specifically recommended on BASF labeling. (The VT stage is defined as when the last branch of the tassel is completely visible outside of the whorl). A compatibility agent, another fungicide, or an insecticide may be included in the tank mix, if needed, and labeled for use on corn. Refer to the adjuvant and other tank mix pesticide product labels for specific use directions and restrictions. Always follow the most restrictive label.

Consult a BASF representative or local agricultural authority for more information concerning additives.

No aerial application in New York State except as permitted under FIFRA Section 24(c), Special Local Need Registration.

Spray Drift Management
DO NOT spray when conditions favor drift beyond area intended for application. Conditions that may contribute to drift include thermal inversion, wind speed and direction, spray nozzle/pressure combinations, spray droplet size, temperature/humidity, etc. Contact your state extension agent for spray drift prevention guidelines in your area. All aerial and ground application equipment must be properly maintained and calibrated using appropriate carriers. Avoiding spray drift at the application site is the responsibility of the applicator.

Aerial Application Methods and Equipment
The interaction of many equipment- and weather-related factors determines the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.

DO NOT apply under circumstances where possible drift to unprotected persons, to food, forage, or other plantings that might be damaged, or crops thereof rendered unfit for sale, use or consumption can occur.

DO NOT release spray at a height greater than 10 feet above the crop canopy unless a greater height is required for aircraft safety.

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 forestry applications, public health uses or to applications using dry formulations.

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or rotor.
2. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.

Where states have more stringent regulations, they must be observed. The applicator should be familiar with and take into account the information covered in the aerial drift reduction advisory information.

Information on Droplet Size
The most effective way to reduce drift potential is to apply large droplets. Use the largest droplet size consistent with acceptable efficacy. 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 Inversions**).

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 recommended pressures. For many nozzle types, lower pressure produces larger droplets. 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 parallel to the airstream produces larger droplets than other orientations and is recommended practice. 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 the largest droplets and the lowest drift.

Wind
DO NOT apply at wind speeds greater than 15 mph. Drift potential is lowest when wind speed does not exceed 10 mph. However, many factors, including droplet size and equipment type, determine drift potential at any given speed. Application should be avoided below 2 mph due to variable wind direction and high inversion potential. Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity
Low humidity and high temperatures increase the evaporation of spray droplets and, therefore, the likelihood of increased spray drift. Avoid spraying during conditions of low humidity and/or high temperatures. 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
Applications should not occur 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. 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 an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing.

Sensitive Areas
The pesticide should only be applied when the potential for drift to adjacent sensitive areas (e.g. bodies of water or non-target crops) is minimal and when wind is blowing away from the sensitive areas.

Directions For Use Through Sprinkler Irrigation Systems

Sprayer Preparation
Chemical tank and injector system should be thoroughly cleaned. Flush system with clean water.

Application Instructions
Apply **Headline® fungicide** at rates and timings as required in this label.

Use Precautions For Sprinkler Irrigation Applications
- Apply this product only through sprinkler irrigation systems including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set, or hand move irrigation systems.

  DO NOT apply this product through any other type of irrigation system.

- Add this product to the pesticide supply tank containing sufficient water to maintain a continuous flow by the injection equipment. In continuous moving systems, inject this product/water mixture continuously, applying the labeled rate per acre for that crop. **DO NOT** exceed 1/2 inch (13,577 gallons) per acre. In stationary or noncontinuous moving systems, inject the product/water mixture in the last 15 to 30 minutes of each set allowing sufficient time for all of the required pesticide to be applied by all the sprinkler heads and applying the labeled rate per acre for that crop. **DO NOT** apply when wind speed favors drift beyond the area intended for treatment. Crop injury, lack of effectiveness, or illegal pesticide residues in the crop can result from non-uniform distribution of treated water. Thorough coverage of foliage is required for good control. Good agitation should be maintained during the entire application period.

- If you have questions about calibration, you should contact state extension service specialists, equipment manufacturers or other experts.

- The 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 backflow.

- 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 that 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.
- Allow sufficient time for pesticide to be flushed through all lines and all nozzles before turning off irrigation water. A person knowledgeable of the chemigation system and responsible for its operation, or under supervision of the responsible person, shall shut the system down and make necessary adjustments should the need arise.
- **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.

Specific Instructions for Public Water Systems:

1. Public water system means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
2. Chemigation systems connected to public water systems must contain a functional, reduced-pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
3. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.
4. The pesticide 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.
5. The system must contain functional interlocking controls to automatically shut off the pesticide 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 pesticide distribution is adversely affected.
6. 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.

III. Additives and General Tank Mixing Information

Headline® fungicide can be tank mixed with most recommended fungicides, insecticides, herbicides, liquid fertilizers, biological control products, adjuvants, and additives as specified in section **VI. Headline® fungicide Crop-specific Requirements**.

Under some conditions, the use of additives or adjuvants may improve the performance of **Headline**. However, all varieties and cultivars have not been tested with possible tank mix combinations. Local conditions can also influence crop tolerance and may not match those under which BASF has conducted testing. Physical incompatibility, reduced disease control, or crop injury may result from mixing **Headline** with other products. Therefore, before using any tank mix (fungicides, insecticides, herbicides, liquid fertilizers, biological control products, adjuvants and additives), test the combination on a small portion of the crop to be treated to ensure that a phytotoxic response will not occur as a result of application. Always follow the most restrictive label.

When an adjuvant is to be used with this product, BASF recommends the use of a Chemical Producers and Distributors Association certified adjuvant.

Consult a BASF representative or local agricultural authorities for more information concerning additives.

IV. Mixing Order

1) **Water**. Begin by agitating a thoroughly clean sprayer tank three-quarters full of clean water.
2) **Agitation**. Maintain constant agitation throughout mixing and application.
3) **Inductor**. If an inductor is used, rinse it thoroughly after each component has been added.
4) **Products in PVA bags**. Place any product contained in water-soluble PVA bags into the mixing tank. Wait until all water-soluble PVA bags have fully dissolved and the product is evenly mixed in the spray tank before continuing.
5) **Water-dispersible products** (such as dry flowables, wettable powders, suspension concentrates, or suspoemulsions).
6) **Water-soluble products**.
7) **Emulsifiable concentrates** (such as **Headline**, or oil concentrates when applicable).

8) **Water-soluble additives** (such as AMS or UAN when applicable).
9) **Remaining quantity of water**.
Make sure that each component is thoroughly mixed and suspended before adding tank mix partners. Maintain constant agitation during application. See section **VI. Headline® fungicide Crop-specific Requirements** for more details.

V. Restrictions and Limitations - All Crops

- **Maximum seasonal use rate:**
DO NOT apply more than the maximum rate per acre per season as listed in **Table A. Headline® fungicide Crop-specific Restrictions and Limitations** and section **VI. Headline® fungicide Crop-specific Requirements**.
- **Maximum rate per application:**
DO NOT apply more than the maximum rate per acre per application as listed in **Table A. Headline® fungicide Crop-specific Restrictions and Limitations** and section **VI. Headline® fungicide Crop-specific Requirements**.
- **DO NOT** make more than the total number of applications of **Headline** per season, as listed in **Table A. Headline® fungicide Crop-specific Restrictions and Limitations** and not exceeding the maximum seasonal use rate.
Also see section **VI. Headline® fungicide Crop-specific Requirements**.
- **Preharvest Interval (PHI):** See **Table A. Headline® fungicide Crop-specific Restrictions and Limitations** and section **VI. Headline® fungicide Crop-specific Requirements**.
- **DO NOT use Headline** in greenhouse or transplant production.

Crop Rotation Restriction: Crops listed on the **Headline**, **Cabrio® EG fungicide** and **Pristine® fungicide** labels may be planted immediately following the last application.

For all other crops, **DO NOT plant sooner than** 14 days after the last application.

Instructions for Directed or Banded Sprays Related to Ground Applications
The application rates shown in the following tables pertain to both aerial and ground (broadcast) methods of application. **Headline** may also be applied as a directed or banded spray over the rows or plant beds with alleys or row middles left unsprayed. For such uses, reduce the rate of **Headline** in proportion to the area actually sprayed. This adjustment is necessary to prevent applying the product at use rates higher than permitted on this label.

The following formula may be used to determine the broadcast equivalent rate for doing directed or banded sprays:

sprayed bed width + unsprayed row middles = total row width

$$\frac{\text{Sprayed Bed Width in Inches}}{\text{Total Row Width in Inches}} \times \frac{\text{Broadcast Rate}}{\text{Treated Acre}} = \frac{\text{Band Rate}}{\text{Field Acre}}$$

Example: A directed spray application will be made to 45 inches plant beds that are separated by 15 inches of unsprayed row-middles.

45 inches sprayed bed width + 15 inches unsprayed row middles = 60 inches total row width

The calculations to determine the appropriate equivalent rate of product to use for this situation based on a label broadcast rate of 12 fl ozs/acre follows:

$$\frac{\text{45 inches Sprayed Bed Width}}{\text{60 inches Total Row Width}} \times \frac{\text{12 fl ozs } \mathbf{Headline}}{\text{Treated Acre}} = \frac{\text{9 fl ozs } \mathbf{Headline}}{\text{Field Acre}}$$

Table A. Headline® fungicide Crop-specific Restrictions and Limitations				
Crop[a]	**Minimum Time from Application to Harvest (PHI) (days)**	**Maximum Product Rate per Acre per Application (fl ozs)**	**Maximum Number of Sequential Foliar Applications**	**Maximum Product Rate per Acre per Season (fl ozs) (lb ai pyraclostrobin)**
Barley	See section **VI. Headline® fungicide Crop-specific Requirements**	9	2	18 *(0.29)*
Citrus Fruit Crop Group[a]: Grapefruit Lemon Lime Orange Tangelo Tangerine	0	15	2	54[b] *(0.88)*
Corn (all types)	7	12	2	72 *(1.18)*
Cotton[c]	30	12	2	36 *(0.58)*
Dried Shelled Peas and Beans[a] (except soybean)	21	9	2	18 *(0.29)*
Edible Podded Legume Vegetables[a]	7	9	2	18 *(0.29)*
Grass Grown for Seed	14	12	2	24 *(0.39)*
Mint	14	12	2	48 *(0.78)*
Oats	Apply no later than the beginning of flowering (Feekes 10.5, Zadok's 59)	9	2	18 *(0.29)*
Peanut	14	15	2	45 *(0.73)*
Pecan	14	7	2	28 *(0.46)*
Rye	Apply no later than 50% head emergence (Feekes 10.3, Zadok's 55)	9	2	18 *(0.29)*
Soybean	21	12	2	24 *(0.39)*

(continued)

Table A. Headline® fungicide Crop-specific Restrictions and Limitations *(continued)*

Crop[a]	Minimum Time from Application to Harvest (PHI) (days)	Maximum Product Rate per Acre per Application (fl ozs)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Acre per Season (fl ozs) (lb ai pyraclostrobin)
Succulent Shelled Peas and Beans[a]	7	9	2	18 *(0.29)*
Sunflower	21	12	2	24 *(0.39)*
Sugar Beet[c] (roots and tops)	7	12	2	48 *(0.78)*
Tuberous and Corm Vegetables Subgroup[a]: Potato[c] Sweet potato Yam	3	12	1	72 *(1.18)*
Wheat and Triticale	Apply no later than the beginning of flowering (Feekes 10.5, Zadok's 59)	9	2	18 *(0.29)*

[a] For a complete list of crops within a crop group, see section **VI. Headline® fungicide Crop-specific Requirements**.
[b] For specific information on maximum use rates and maximum rates per season, see section **VI. Headline® fungicide Crop-specific Requirements**, **Citrus Fruit.**
[c] The maximum product rate per season includes the combination infurrow and foliar uses.

Aerial application is permitted for all labeled crops. **No aerial application in New York State except as permitted under FIFRA Section 24(c), Special Local Need Registration.**

VI. Headline® fungicide Crop-specific Requirements					
Crop	**Target Disease**	**Product Use Rate per Application (fl ozs/A)**	**Maximum Number of Sequential Foliar Applications**	**Maximum Product Rate per Season (fl ozs/A)**	**Minimum Time from Application to Harvest (PHI)**
Barley	Black point (Kernel blight or Head mold) (*Cochliobolus sativus, Alternaria* spp.) Leaf rust (*Puccinia hordei, P. recondita*) Net blotch (*Pyrenophora teres*) Powdery mildew (*Erysiphe graminis* f. sp., *hordei*) Scald (*Rhynchosporium secalis*) Septoria leaf and glume blotch (*Septoria* spp., *Stagonospora* spp.) Spot blotch (*Cochliobolus sativus*) Stem rust (*Puccinia graminis* f. sp., *tritici*) Stripe rust (*Puccinia striiformis*) Tan spot (Yellow leaf spot) (*Pyrenophora trichostoma*)	6 to 9	2	18 *(0.29 lb ai/acre)*	Apply no later than 50% head emergence (Feekes 10.3, Zadok's 55); 14 days in selected states (see map).

See Barley Crop-specific Requirements and Application Directions following. *(continued)*

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development. To maximize yields in cereals, it is important to protect the flag leaf. Apply **Headline** immediately after flag leaf emergence for optimum results.

Headline does not control Fusarium head blight (head scab) or prevent the reductions in grain quality that can result from this disease. When head blight is a concern, growers should manage this disease with fungicides that are labeled for and effective in managing this disease, and with cultural practices like crop rotation and plowing to reduce crop residues that serve as an inoculum source.

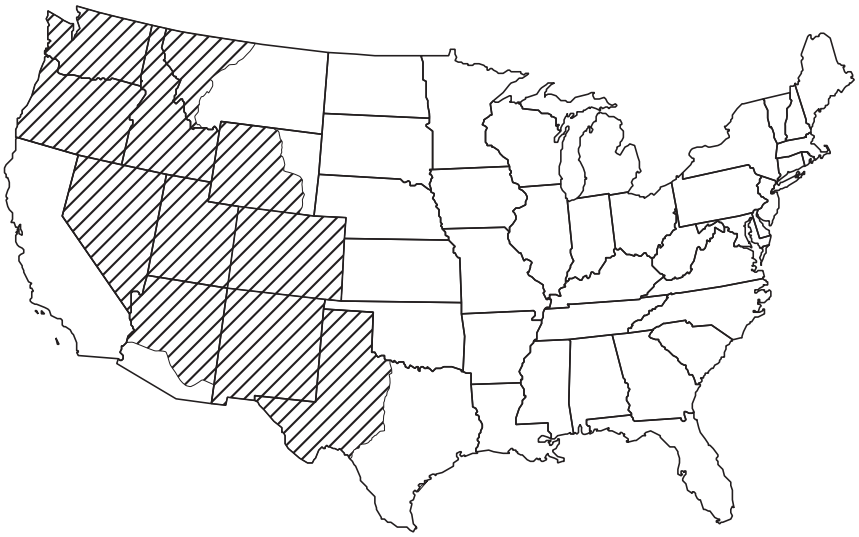
Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.29 lb ai pyraclostrobin (= 18 fl ozs **Headline**) per acre per season.

DO NOT make more than two (2) applications of **Headline** or other **Group 11** fungicides per season.

DO NOT harvest barley hay or feed green-chopped barley within 14 days of last application.

Barley may be harvested 14 days after the last application in the following states: **AZ** (north of I-10), **CO**, **ID**, **MT** (west of Rt 87/I-15), **NV**, **NM**, **OR**, **TX** (west of Rt 283/377), **UT**, **WA**, and **WY** (west of I-25/I-90), as shown in the **Headline Use Area Map**, **14-Day PHI in barley**.

Headline Use Area Map - Barley
14-Day PHI



VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Citrus Fruit Calamondin Citrus citron Citrus hybrids Chironja Grapefruit Kumquat Lemon Lime Mandarin Orange (sour and sweet) Pummelo Satsuma Tangelo Tangerine Tangor	Greasy spot (*Mycosphaerella citri*) Scab (*Elsinoe fawcettii*)	9 to 12	2	54 *(0.88 lb ai/acre)*	0
	Alternaria brown spot (*Alternaria citri*) Anthracnose (*Colletotrichum acutatum, C. gloeosporioides*) Black spot (*Guignardia citricarpa*) Melanose (*Diaporthe citri*) Post bloom fruit drop (*Colletotrichum acutatum*)	12 to 15			

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 10- to 21-day interval.

For control of diseases other than greasy spot, integrate 1 to 2 applications of **Headline** early in the spray program. For greasy spot control, integrate 1 to 2 applications of **Headline** into the fungicide program during the mid-to-late season.

Use the higher rate when disease pressure is high.

For aerial application to citrus orchards, use no less than 10 gallons of spray solution per acre.

No livestock feeding restrictions.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.88 lb ai pyraclostrobin (= 54 fl ozs of **Headline**) per acre per season.

DO NOT make more than two (2) sequential applications of **Headline** before alternating to a labeled fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Corn Field corn Pop corn Sweet corn Seed production corn	Anthracnose* (*Colletotrichum graminicola*) Gray leaf spot (*Cercospora zea-maydis*) Northern corn leaf blight* (*Exserohilum turcicum*) Northern corn leaf spot* (*Cochliobolus carbonum*) Physoderma brown spot* (*Physoderma maydis*) Rust, common (*Puccinia sorghi*) Rust, southern (*Puccinia polyspora*) Southern corn leaf blight* (*Bipolaris maydis*) Yellow leaf blight* (*Phyllosticta maydis*)	6 to 12	2	72 *(1.18 lbs ai/acre)*	7

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high. Under high disease pressure for Northern corn leaf blight and Southern corn leaf blight, apply 9 to 12 fl ozs per acre.

*The use rate in California is 9 to 12 fl ozs per acre.

Headline may be used with adjuvants. See section **III. Additives and General Tank Mixing Information** and section **IV. Mixing Order** for more details.

No livestock feeding restrictions.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 1.18 lbs ai pyraclostrobin (= 72 fl ozs of **Headline**) per acre per season.

In field corn, **DO NOT** make more than two (2) applications of **Headline** per season.

DO NOT make more than two (2) sequential applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action. If more than two (2) applications of **Headline** are made in a multiple spray program, alternate each subsequent **Headline** application with at least one (1) application of a non-**Group 11** fungicide.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season* (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Cotton (*Gossypium hirsutum*)	Alternaria leaf spot, boll rot (*Alternaria* spp.) Anthracnose, boll rot (*Glomerella* spp.) Ascochyta blight, boll rot (*Ascochyta* spp.) Cercospora blight and leaf spot (*Cercospora* spp.) Diplodia boll rot (*Diplodia* spp.) Hard lock, boll rot (*Fusarium* spp.) Phoma blight, boll rot (*Phoma* spp.) Rust (*Puccinia* spp., *Phykopsora* spp.) Stemphyllium leaf spot (*Stemphyllium* spp.)	6 to 12	2	36 *(0.58 lb ai/acre)*	30

Application Directions. For optimal foliar and boll rot disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high. For seedling disease control, see infurrow application instructions following.

* The maximum product rate per season includes the combination of infurrow and foliar uses.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.58 lb ai pyraclostrobin (= 36 fl ozs **Headline**) per acre per season.

DO NOT make more than two (2) sequential applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

NO livestock grazing or feeding restrictions.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Instructions for Infurrow Applications for Cotton Seedling Diseases (*Pythium* and *Rhizoctonia*)

Rate Per 1000 row feet	Product Rate per Acre (fl ozs)								
(fl oz product)	**15-inch rows**	**20-inch rows**	**22-inch rows**	**30-inch rows**	**32-inch rows**	**34-inch rows**	**36-inch rows**	**38-inch rows**	**40-inch rows**
0.1	3.5								
0.2	7.0	5.2	4.7	3.5	3.3	3.2	3.0		
0.3	10.5	7.8	7.1	5.2	5.0	4.8	4.5	4.3	4.0
0.4	see footnote[1]	10.4	9.5	6.9	6.7	6.4	6.0	5.7	5.4
0.5	see footnote[1]	see footnote[1]	11.8	8.7	8.4	8.0	7.5	7.1	6.7
0.6	see footnote[1]	see footnote[1]	see footnote[1]	10.4	10.0	9.6	9.0	8.5	8.1
0.7	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	11.7	11.2	10.5	10.0	9.4
0.8	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	12.0	11.4	10.8

Application Directions. Use 0.1 to 0.8 fl oz of **Headline** per 1000 feet of row. Refer to this chart to determine the rate per acre. Apply at planting as an infurrow application by directing the spray into the furrow before seed is covered. Use a minimum volume of application of 2.5 gallons of water per acre.

When *Pythium* or *Rhizoctonia* seedling disease pressure conditions are expected to be severe or if the field has a history of seedling diseases, use **Headline** at a product rate per acre equivalent to 9 to 12 fl ozs and/or tank mix with a fungicide having a different mode of action.

Adjust rate per 1000 row feet so that you **DO NOT** apply more than 12 fl ozs per acre of **Headline**.

[1] For 32- to 34-inch rows, use a maximum of 0.7 fl oz per 1000 row feet.
For 30-inch rows, use a maximum of 0.6 fl oz per 1000 row feet.
For 22-inch rows, use a maximum of 0.5 fl oz per 1000 row feet.
For 20-inch rows, use a maximum of 0.4 fl oz per 1000 row feet.
For 15-inch rows, use a maximum of 0.3 fl oz per 1000 row feet.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Dried Shelled Peas and Beans (except soybean) Broad bean Chickpea Guar Lablab bean Lentil Pigeon pea *Lupinus* spp. Grain lupin Sweet lupin White lupin *Phaseolus* spp. Field bean Kidney bean Lima bean Navy bean Pink bean Pinto bean Tepary bean *Vigna* spp. Adzuki bean Black-eyed pea Catjang Cowpea Crowder pea Moth bean Mung bean Rice bean Southern pea Urd bean *Pisum* spp. Field pea	Anthracnose (*Colletotrichum* spp.) Alternaria leaf and pod spot (*Alternaria* spp.) Asian soybean rust* (*Phakopsora pachyrhizi*) Ascochyta blight (*Phoma exigua, Ascochyta* spp.) Cercospora leaf spot (*Cercospora* spp.) Downy mildew (*Phytophthora nicotianae*) Mycosphaerella blight (*Mycosphaerella* spp.) Powdery mildew (*Erysiphe polygoni*) Rust (*Uromyces appendiculatus*)	6 to 9	2	18 *(0.29 lb ai/acre)*	21

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.

Bean forage, bean hay, pea vines, and pea hay may be fed no sooner than 14 days after last application.

Headline may be used with adjuvants. See section **III. Additives and General Tank Mixing Information** and section **IV. Mixing Order** for more details.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.29 lb ai pyraclostrobin (= 18 fl ozs of **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

* See section **VII. Management of Asian Soybean Rust.**

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Edible Podded Legume Vegetables Jack bean Pigeon pea Soybean (immature seed) Sword bean *Phaseolus* spp. Runner bean Snap bean Wax bean *Vigna* spp. Asparagus bean Chinese long-bean Moth bean Yardlong bean *Pisum* spp. Dwarf pea Edible-podded pea Snowpea Sugar snap pea	Anthracnose (*Colletotrichum* spp.) Alternaria leaf and pod spot (*Alternaria* spp.) Asian soybean rust* (*Phakopsora pachyrhizi*) Ascochyta blight (*Phoma exigua, Ascochyta* spp.) Cercospora leaf spot (*Cercospora* spp.) Downy mildew (*Phytophthora nicotianae*) Mycosphaerella blight (*Mycosphaerella* spp.) Powdery mildew (*Erysiphe polygoni*) Rust (*Uromyces appendiculatus*)	6 to 9	2	18 *(0.29 lb ai/acre)*	7

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.

Bean forage, bean hay, pea vines, and pea hay may be fed no sooner than 14 days after last application.

Headline may be used with adjuvants. See section **III. Additives and General Tank Mixing Information**

and section **IV. Mixing Order** for more details.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.29 lb ai pyraclostrobin (= 18 fl ozs of **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

* See section **VII. Management of Asian Soybean Rust.**

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Grass Grown for Seed	Rust (*Puccinia recondita, P. graminis*) **<u>Suppression Only</u>** Powdery mildew (*Erysiphe graminis*)	6 to 12	2	24 *(0.39 lb ai/acre)*	14

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development. Apply again 14 to 21 days later.

Use the higher rate and shorter interval when disease pressure is high.

DO NOT graze or feed forage or hay to livestock within 27 days of last application.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.39 lb ai pyraclostrobin (= 24 fl ozs **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Mint	Leaf spot (*Ramularia* spp., *Alternaria* spp., *Phoma* spp.) Powdery mildew (*Erysiphe* spp.) Rust (*Puccinia* spp.)	9 to 12	2	48 *(0.78 lb ai/acre)*	14

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.

Headline may be used with adjuvants. See section **III. Additives and General Tank Mixing Information** and section **IV. Mixing Order** for more details.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.78 lb ai pyraclostrobin (= 48 fl ozs **Headline**) per acre per season.

DO NOT make more than two (2) sequential applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI)
Oats	Crown rust (*Puccinia coronata*) Helminthosporium leaf spot (*Drechslera avenae*) Leaf blotch (*Pyrenophora avenae*) Leaf rust (*Puccinia* spp.) Septoria blotch and Stem rot (*Septoria avenae, Phaeosphaeria avenaria, Stagnospora avenae*) Spot blotch (*Bipolaris* spp.) Stem rust (*Puccinia graminis*)	6 to 9*	2	18 *(0.29 lb ai/acre)*	Apply no later than the beginning of flowering (Feekes 10.5, Zadok's 59)

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development. To maximize yields in cereals, it is important to protect the flag leaf. Apply **Headline** immediately after flag leaf emergence for optimum results.

Headline does not control Fusarium head blight (head scab) or prevent reductions in grain quality that can result from this disease. When head blight is a concern, growers should manage this disease with fungicides that are labeled for and effective in managing this disease, and with cultural practices like crop rotation and plowing to reduce crop residues that serve as an inoculum source.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.29 lb ai pyraclostrobin (= 18 fl ozs **Headline**) per acre per season.

DO NOT harvest oat hay or feed green-chopped oats within 14 days of last application.

DO NOT make more than two (2) sequential applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Peanut	Early leaf spot (*Cercospora arachidicola*) Late leaf spot (*Cercosporidium personatum*) Pepperspot (*Leptosphaerulina crassiasca*) Rust (*Puccinia arachidis*) Web blotch (*Phoma arachidicola*)	6 to 15 (see details below)	2	45 *(0.73 lb ai/acre)*	14
	Rhizoctonia limb rot, Peg rot, and Pod rot (*Rhizoctonia solani*) Sclerotium rot - Southern stem rot, Southern blight, and White mold (*Sclerotium rolfsii*) **Suppression Only** Sclerotinia blight (*Sclerotinia minor*)	9 to 15			
	Cylindrocladium black rot (*Cylindrocladium crotalariae*)	12 to 15			

Application Directions. For control of early and late leaf spot, pepperspot, rust, and web blotch, begin applications of **Headline** prior to disease development and continue on a 14- to 21-day interval. When using a 14-day spray interval, apply **Headline** at 6 to 12 fluid ounces per acre. At spray intervals between 14 and 21 days, apply **Headline** at 9 to 15 fluid ounces per acre.

For control of Rhizoctonia and Sclerotium, begin applications of **Headline** prior to disease development and continue on a 14- to 28-day interval. For intervals greater than 14 days, use 15 fluid ounces per acre.

Use the higher rate and/or shorter spray interval when disease pressure is high or in fields with a history of disease.

Headline use in mixes with silicone-containing adjuvants may cause crop injury under certain conditions.

Peanut meal may be fed. **DO NOT** graze or harvest for forage use.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.73 lbs ai pyraclostrobin (= 45 fl ozs **Headline**) per acre per season.

DO NOT make more than two (2) sequential applications of **Headline** before alternating to a labeled fungicide with a different mode of action. In spray programs where four or less fungicide applications are made in a season, **Headline** should be alternated with at least one (1) application of a labeled non-**Group 11** fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Pecan	Pecan scab (*Cladosporium caryigenum*)	6 to 7	2	28 *(0.46 lb ai/acre)*	14

Application Directions. Begin applications of **Headline** prior to disease development and continue on a 14-day interval. For optimum performance, **Headline** applications early in the spray program (e.g. prepollinationand first cover) are recommended.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.46 lb ai pyraclostrobin (= 28 fl ozs **Headline**) per acre per season.

DO NOT make more than two (2) sequential applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season* (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Potato	Black dot (*Colletotrichum coccodes*) Early blight (*Alternaria solani*)	6 to 9	1	72 *(1.18 lbs ai/acre)*	3 days
	Late blight (*Phytophthora infestans*) Powdery mildew (*Erysiphe* spp., *Leveillula taurica*) **Suppression Only** White mold (*Sclerotinia sclerotiorum*)	6 to 12			

Application Directions. Begin applications of **Headline** at 7- to 14-day intervals prior to disease development. The low rate and longer interval can be used early season prior to the observance of symptoms and when disease pressure is low. For control of late blight, follow application of **Headline** with a labeled non-**Group 11** fungicide with a different mode of action 5 to 7 days later.

Use the higher rates and shorter intervals once disease has been confirmed in your area or weather conditions are conducive to disease development.

* The maximum product rate per season includes the combination of infurrow and foliar uses.

No livestock feeding restrictions.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 1.18 lbs ai pyraclostrobin (= 72 fl ozs **Headline**) per acre per season.

DO NOT make more than one (1) application of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Instructions For Infurrow Use to Aid in the Control of Soilborne Rhizoctonia in Potatoes
Use 0.4 to 0.8 fl oz of **Headline** per 1000 feet of row (for applications on 32-inch or 34-inch rows, the maximum application rate is 0.73 fl oz/1000 row feet). Refer to the chart below to determine the rate per acre. Apply at planting as an infurrow spray by directing spray pattern to uniformly cover seed pieces and surrounding soil. The spray pattern should be a 4- to 8-inch band that is applied to the seed piece prior to being covered with soil.

When Rhizoctonia disease pressure conditions are expected to be severe or if the field has a history of Rhizoctonia infestations, use **Headline** at 0.6 to 0.8 fl oz per 1000 feet of row and/or tank mix with a fungicide having a different mode of action.

Use a minimum volume of application of 5 gallons of water per acre.

Product Rate per 1000 row feet	**Product Rate per Acre (fl ozs product)**				
(fl oz product)	**32-inch rows**	**34-inch rows**	**36-inch rows**	**38-inch rows**	**40-inch rows**
0.4	6.7	6.4	6.0	5.7	5.4
0.6	10.0	9.6	9.0	8.6	8.1
0.8	see footnote[1]	see footnote[1]	12.0	11.4	10.8
[1] For 32-inch or 34-inch rows, use a maximum of 0.73 fl oz per 1000 row feet.					

Crop	**Target Disease**	**Product Use Rate per Application (fl ozs/A)**	**Maximum Number of Sequential Foliar Applications**	**Maximum Product Rate per Season (fl ozs/A)**	**Minimum Time from Application to Harvest (PHI)**
Rye	Leaf rust (*Puccinia recondita*) Leaf spot (*Pyrenophora* spp.) Powdery mildew (*Erysiphe graminis*) Septoria leaf and glume blotch (*Septoria* spp., *Stagonospora* spp.) Stem rust (*Puccinia graminis*) Stripe rust (*Puccinia striiformis*)	6 to 9	2	18 *(0.29 lb ai/acre)*	Apply no later than 50% head emergence (Feekes 10.3, Zadok's 55)

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development. To maximize yields in cereals, it is important to protect the flag leaf. Apply **Headline** immediately after flag leaf emergence for optimum results. **Headline** does not control Fusarium head blight (head scab) or prevent the reductions in grain quality that can result from this disease. When head blight is a concern, growers should manage this disease with fungicides that are labeled for and effective in managing this disease, and with cultural practices like crop rotation and plowing to reduce crop residues that serve as an inoculum source.

No livestock feeding restrictions.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.29 lb ai pyraclostrobin (= 18 fl ozs **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** or other **Group 11** fungicides per season.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Soybean (*Glycine max*)	Alternaria leaf spot (*Alternaria* spp.) Anthracnose (*Colletotrichum truncatum*) Asian soybean rust* (*Phakopsora pachyrhizi*) Brown spot (*Septoria glycines*) Cercospora blight (*Cercospora kikuchii*) Frogeye leaf spot (*Cercospora sojina*) Pod and stem blight (*Diaporthe phaseolorum*) Rhizoctonia aerial blight (*Rhizoctonia solani*)	6 to 12	2	24 *(0.39 lb ai/acre)*	21
	Suppression Only Southern blight (*Sclerotium rolfsii*)	12			

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.

For adequate control of soybean rust, apply **Headline** prior to infection.

* See section **VII. Management of Asian Soybean Rust**.

Headline may be used with adjuvants. See section **III. Additives and General Tank Mixing Information** and section **IV Mixing Order** for more details.

Soybean forage may be fed no sooner than 14 days after last application. Soybean hay may be fed no sooner than 21 days after last treatment.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.39 lb ai pyraclostrobin (= 24 fl ozs **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Succulent Shelled Peas and Beans Pigeon pea *Vigna* spp. Black-eyed pea Cowpea Southern pea *Pisum* spp. English pea Garden pea Green pea Broad bean *Phaseolus* spp. Lima bean, green	Anthracnose (*Colletotrichum* spp.) Alternaria leaf and pod spot (*Alternaria* spp.) Asian soybean rust* (*Phakopsora pachyrhizi*) Ascochyta blight (*Phoma exigua, Ascochyta* spp.) Cercospora leaf spot (*Cercospora* spp.) Downy mildew (*Phytophthora nicotianae, P. phaseoli*) Mycosphaerella blight (*Mycosphaerella* spp.) Powdery mildew (*Erysiphe polygoni*) Rust (*Uromyces appendiculatus*)	6 to 9	2	18 *(0.29 lb ai/acre)*	7

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.

Bean forage, bean hay, pea vines, and pea hay may be fed no sooner than 14 days after last application.

Headline may be used with adjuvants. See section **III. Additives and General Tank Mixing Information** and section **IV. Mixing Order** for more details.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.29 lb ai pyraclostrobin (= 18 fl ozs **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

***** See section **VII. Management of Asian Soybean Rust.**

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season* (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Sugar Beet (roots and tops)	Cercospora leaf spot (*Cercospora beticola*) Powdery mildew (*Erysiphe betae*)	9 to 12	2	48 *(0.78 lb ai/acre)*	7

Application Directions. Begin applications prior to disease development. Apply **Headline** at 14-day intervals. Use the higher rate when disease pressure is high.

Applications of **Headline** will aid in the control of Rhizoctonia stem canker and crown rot.

*The maximum product rate per season includes the combination of infurrow and foliar uses.

Headline may be combined with low rates of crop oil concentrate (COC), methylated seed oil (MSO) and nonionic surfactant (NIS) adjuvants. **DO NOT** use silicone-containing adjuvants. Some combinations and rates may result in temporary crop injury.

Headline Tank Mixes. Headline can be tank mixed with herbicides such as **Poast® herbicide**, **Select® herbicide**, **Assure® II herbicide** or **Prism® herbicide** for postemergence control of grasses in sugar beet. **DO NOT** use silicone-based adjuvants in such combinations. **Headline** tank mix combinations can include COC or MSO; however, crop injury may result. The likelihood and level of injury tends to increase with increasing rates of COC or MSO.

See section **III. Additives and General Tank Mixing Information** and section **IV. Mixing Order** for more details.

No livestock feeding restrictions.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.78 lb ai pyroclostrobin (= 48 fl ozs **Headline**) per acre per season. **DO NOT** make more than one (1) application of **Headline** before the 4-leaf stage of plant growth. After the 4-leaf stage of plant growth, **DO NOT** make more than one (1) application of **Headline** before alternating to a non-**Group 11** fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Instructions for Infurrow use to Aid in the Control of Soilborne *Rhizoctonia* in Sugar beet

Rate Per 1000 row feet	Product Rate per Acre (fl ozs)								
(fl oz product)	**15-inch rows**	**20-inch rows**	**22-inch rows**	**30-inch rows**	**32-inch rows**	**34-inch rows**	**36-inch rows**	**38-inch rows**	**40-inch rows**
0.1	3.5								
0.2	7.0	5.2	4.7	3.5	3.3	3.2	3.0		
0.3	10.5	7.8	7.1	5.2	5.0	4.8	4.5	4.3	4.0
0.4	see footnote[1]	10.4	9.5	6.9	6.7	6.4	6.0	5.7	5.4
0.5	see footnote[1]	see footnote[1]	11.8	8.7	8.4	8.0	7.5	7.1	6.7
0.6	see footnote[1]	see footnote[1]	see footnote[1]	10.4	10.0	9.6	9.0	8.5	8.1
0.7	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	11.7	11.2	10.5	10.0	9.4
0.8	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	see footnote[1]	12.0	11.4	10.8

Application Directions. Use 0.1 to 0.8 fl oz of **Headline** per 1000 feet of row. Refer to this chart to determine the rate per acre. Apply at planting as an infurrow application by directing the spray into the furrow before seed is covered. Use a minimum volume of application of 2.5 gallons of water per acre.

When *Rhizoctonia* seedling disease pressure conditions are expected to be severe or if the field has a history of seedling diseases, use **Headline** at a product rate per acre equivalent to 9 to 12 fl ozs and/or tank mix with a fungicide having a different mode of action.

Adjust rate per 1000 row feet so that you **DO NOT** apply more than 12 fl ozs per acre of **Headline**.

[1] For 32- to 34-inch rows, use a maximum of 0.7 fl oz per 1000 row feet.
For 30-inch rows, use a maximum of 0.6 fl oz per 1000 row feet.
For 22-inch rows, use a maximum of 0.5 fl oz per 1000 row feet.
For 20-inch rows, use a maximum of 0.4 fl oz per 1000 row feet.
For 15-inch rows, use a maximum of 0.3 fl oz per 1000 row feet.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Sunflower	Alternaria leaf spot (*Alternaria* spp.) Cercospora leaf spot (*Cercospora helianthi*) Downy mildew (*Plasmopara halstedii*) Powdery mildew (*Erysiphe cichoracearum*) Rust (*Puccinia helianthi, Uromyces* spp.) Septoria leaf spot (*Septoria* spp.) White rust (*Albugo tragopogonis*)	6 to 12	2	24 *(0.39 lb ai/acre)*	21

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development and continue on a 7- to 14-day interval if conditions are conducive for disease development. Use the higher rate and shorter interval when disease pressure is high.

Headline may be used with adjuvants.

No livestock feeding restrictions.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.39 lb ai pyraclostrobin (= 24 fl ozs **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** before alternating to a non-**Group 11** fungicide with a different mode of action.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season* (fl ozs/A)	Minimum Time from Application to Harvest (PHI) (days)
Tuberous and Corm Vegetables Subgroup: Arracacha Arrowroot Chinese artichoke Jerusalem artichoke Cassava (bitter and sweet) Chayote (root) Chufa Dasheen Edible canna Ginger Leren Sweet potato Tanier True yam Turmeric Yam bean	Downy mildew (*Plasmopara* spp.) Leaf spot (*Cercospora* spp., *Alternaria* spp.) Powdery mildew (*Erysiphae* spp., *Leveillula taurica*) Rust (*Uromyces* spp. *Puccinia* spp.)	6 to 12	1	72 *(1.18 lbs ai/acre)*	3
Potato	Black dot (*Colletotrichum coccodes*) Early blight (*Alternaria solani*)	6 to 9			
	Late blight (*Phytophthora infestans*) Powdery mildew (*Erysiphe* spp., *Leveillula taurica*) **Suppression Only** White mold (*Sclerotinia sclerotiorum*)	6 to 12			

Application Directions. Begin applications of **Headline** at 7- to 14-day intervals prior to disease development. The low rate and longer interval can be used early season prior to the observance of symptoms and when disease pressure is low. For control of late blight, follow application of **Headline** with a labeled fungicide with a different mode of action 5 to 7 days later.

Use the higher rates and shorter intervals once disease has been confirmed in your area or if weather conditions are conducive to disease development.

* The maximum product rate per season includes the combination of infurrow and foliar uses. (For above-listed crops, infurrow use is permitted in potato only).

DO NOT make more than one (1) application of **Headline** fungicide before alternating to a labeled non-**Group 11** fungicide with a different mode of action.

No livestock feeding restrictions.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 1.18 lbs ai pyroclostrobin (= 72 fl ozs **Headline**) per acre per season.

Instructions For Infurrow Use to Aid in the Control of Soilborne Rhizoctonia in Potatoes
Use 0.4 to 0.8 fl oz of **Headline** per 1000 feet of row (for applications on 32-inch or 34-inch rows; the maximum application rate is 0.73 fl oz/1000 row feet). Refer to the chart below to determine the rate per acre. Apply at planting as an infurrow spray by directing spray pattern to uniformly cover seed pieces and surrounding soil. The spray pattern should be a 4- to 8-inch band that is applied to the seed piece prior to being covered with soil.

When Rhizoctonia disease pressure conditions are expected to be severe or if the field has a history of Rhizoctonia infestations, use **Headline** at 0.6 to 0.8 fl oz per 1000 feet of row and/or tank mix with a fungicide having a different mode of action.

Use a minimum volume of application of 5 gallons of water per acre.

Product Rate per 1000 row feet	**Product Rate per acre (fl ozs product)**				
(fl oz product)	**32-inch rows**	**34-inch rows**	**36-inch rows**	**38-inch rows**	**40-inch rows**
0.4	6.7	6.4	6.0	5.7	5.4
0.6	10.0	9.6	9.0	8.6	8.1
0.8	see footnote[1]	see footnote[1]	12.0	11.4	10.8

[1] For 32-inch or 34-inch rows, use a maximum of 0.73 fl oz per 1000 row feet.

VI. Headline® fungicide Crop-specific Requirements *(continued)*

Crop	Target Disease	Product Use Rate per Application (fl ozs/A)	Maximum Number of Sequential Foliar Applications	Maximum Product Rate per Season (fl ozs/A)	Minimum Time from Application to Harvest (PHI)
Wheat and Triticale	Black point (Kernel smudge) (*Alternaria* spp., *Helminthosporium* spp.) Leaf rust (*Puccinia triticina*) Powdery mildew (*Erysiphe graminis* f. sp., *tritici*) Septoria leaf and glume blotch (*Septoria* spp., *Stagonospora* spp.) Spot blotch (*Cochliobolus sativus*) Stem rust (*Puccinia graminis* f. sp., *tritici*) Stripe rust (*Puccinia striiformis* f. sp., *tritici*) Tan spot (Yellow leaf spot) (*Pyrenophora* spp.)	6 to 9	2	18 *(0.29 lb ai/acre)*	Apply no later than the beginning of flowering (Feekes 10.5, Zadok's 59)

Application Directions. For optimal disease control, begin applications of **Headline** prior to disease development. To maximize yields in cereals, it is important to protect the flag leaf. Apply **Headline** immediately after flag leaf emergence for optimum results.

Headline does not control Fusarium head blight (head scab) or prevent the reductions in grain quality that can result from this disease. When head blight is a concern, growers should manage this disease with fungicides that are labeled for and effective in managing this disease, and with cultural practices like crop rotation and plowing to reduce crop residues that serve as an inoculum source.

Resistance Management. To limit the potential for development of resistance, **DO NOT** apply more than 0.29 lb ai pyraclostrobin (= 18 fl ozs **Headline**) per acre per season. **DO NOT** make more than two (2) applications of **Headline** or other **Group 11** fungicides per season.

DO NOT harvest wheat hay or feed green-chopped wheat within 14 days after last application.

VII. Management of Asian Soybean Rust

If Asian soybean rust spores are present in the area, beans or peas may be infected even if symptoms are not present. Once Asian soybean rust is established (infection level* greater than 3 to 5%) on the bean or pea plant, control is difficult to achieve with a curative approach. Optimum disease control is achieved by using the combination of a preventive fungicide like **Headline® fungicide** plus an EPA-approved fungicide (non-Qol mode of action) with known curative activity** against Asian soybean rust.

A comprehensive monitoring and scouting program must be continued after initial fungicide applications. Fungicide treatments that include **Headline** will protect beans or peas against Asian soybean rust for up to 21 days, but subsequent disease infection of treated leaves can occur earlier if conditions are favorable for disease development. New leaves emerging after treatment will not be protected from new infection pressure.

Monitoring for Asian Soybean Rust Presence
Information on the geographic distribution of Asian soybean rust can be gathered from multiple sources, including local retailers, university extension, USDA, the Internet and BASF. These sources must be evaluated frequently during the growing season to determine the risk and local presence of rust spores in your geography. Rust spores can move hundreds of miles in only a few days based on wind direction and speed. If Asian soybean rust is present in the area or if conditions exist where spore movement from infected areas is expected or predicted, bean or pea fields should be treated using the **Headline** program described in **Table 1**.

Field Scouting
Scout bean or pea fields for presence of Asian soybean rust frequently. Asian soybean rust establishment is favored by high humidity, free moisture present on leaves and moderate air temperatures. Asian soybean rust, in most cases, becomes especially aggressive and visible when plants reach the reproductive stage of growth (flowering). Check higher risk areas of bean or pea fields for signs of disease first. These include: earlier planted or maturing beans or peas; high moisture areas near lakes, rivers or other water sources that keep humidity high; areas in the field that remain shaded longer resulting in higher free leaf moisture; low areas of fields where humidity (dew) can settle and persist longer. Look for any signs of symptoms of soybean rust presence. If Asian soybean rust is present in your field, immediately implement **Headline** program described in **Table 1**.

SCOUTING TIP: Collect leaves from suspected plants, place suspect leaves in a clear plastic bag, inflate bag with breath (adds humidity to bag) and seal, place in warm (75° to 90° F) environment and incubate in humid plastic bags for 24 hours. Leaves in the bags should display accelerated disease development and show spore pustule development within 24 hours. Spore development should occur approximately two times faster than under normal field conditions.

Headline Instructions for Management of Asian Soybean Rust

Preventive + Curative Treatment

Existing Infections and/or if Asian Soybean Rust Spores are Present or Predicted to be in the Area.

A tank mixture with an EPA-approved fungicide (non-Qol mode of action) with known curative activity** against Asian soybean rust is required for control of existing Asian soybean rust infections even if symptoms are not present. If symptoms or Asian soybean rust lesions and/or pustules are present on bean or pea plants, some yield loss may have already occurred.

The **Headline** program described in **Table 1** must be used for Asian soybean rust if one or more of the following conditions exists:

1. Asian soybean rust is present in the bean or pea field based on field scouting.
2. Asian soybean rust is present in the local area.
3. Predictive models based on weather/wind have predicted that spores have reached or will soon reach your area.
4. USDA and/or university extension report that Asian soybean rust (including spores) has been identified in your geographical area.

Fungicide treatments that include **Headline** plus an EPA-approved fungicide (non-Qol mode of action) with known curative activity** against Asian soybean rust will protect beans or peas for up to 21 days, but subsequent infection of treated leaves can occur earlier if conditions are favorable for disease development. New leaves emerging after treatment will not be protected from new infection pressure.

Because a second fungicide application may be required, a comprehensive monitoring and scouting program must be continued after the initial fungicide application. Base the need for second application on bean or pea growth stage, yield potential and conditions favorable for continued Asian soybean rust infection.

*Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program and apply an EPA-approved fungicide (non-Qol mode of action) with known curative activity** if a third application is needed.*

***Infection level = number of leaves with symptoms/signs of Asian soybean rust per 100 leaves.

****Contact your local, state or federal agricultural authorities or local retailer for a list of fungicides approved in your state with known curative properties against Asian soybean rust.

Table 1. Headline® fungicide application instructions when Asian soybean rust has been identified in the bean or pea field to be treated, is present in the local geographical area or spores have been predicted to be in the local geographical area.

Application 1	Treatment	**Headline** (6 to 9 fl ozs/acre)[a] + adjuvant + EPA-approved fungicide (non-QoI mode of action) with known curative activity against Asian soybean rust[b]
	Timing	This application must be made soon after first rust infection, preventively, or at blooming start (growth stage R1 to R3), even if symptoms have not appeared. Refer to section entitled **Headline Instructions for Management of Asian Soybean Rust** and repeat application as necessary, depending on disease evolution.
Application 2[c]	Treatment	**Headline** (6 to 9 fl ozs/acre)[a] + adjuvant + EPA-approved fungicide (non-QoI mode of action) with known curative activity against Asian soybean rust[b]
	Timing	21 days after Application 1 **or** Earlier (no sooner than 7 days) if monitoring shows active disease

[a] Higher labeled rates of **Headline** provide longer residual control of Asian soybean rust.

[b] Contact your local, state or federal agricultural authorities or local retailer for a list of fungicides approved in your state for this purpose.

[c] Continue to carefully monitor and scout bean or pea fields as described in section **VII. Management of Asian Soybean Rust**. Base need for second application on results of monitoring and scouting for disease, crop growth stage and yield potential. Consult with your local retailer or university extension representative for guidance, as needed. *Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program and apply an EPA-approved fungicide (non-QoI mode of action) with known curative activity if a third application is needed.*

Preventive Treatment

Asian Soybean Rust (including spores) Not Present or Predicted to be Present in the Field or Area

The preventive **Headline** program described in **Table 2** should only be used if none of the conditions described in one through four of the section immediately preceding exist. Growers must continue to monitor and scout bean and pea fields as described in sections **Monitoring for Asian Soybean Rust Presence** and **Field Scouting**.

A second fungicide application may be needed if Asian soybean rust (including spores) is detected or identified in the treated field or geographical area. Continue a comprehensive monitoring and scouting program after the initial application of **Headline**. Infection of treated bean and pea leaves can occur, and new leaves emerging after treatment will not be protected from Asian soybean rust. The need for a second application should be based on bean and pea growth stage, yield potential and environmental conditions. If a second application is necessary, apply **Headline** plus an effective EPA-approved fungicide (non-QoI mode of action) with known curative activity* against Asian soybean rust.

Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program, and apply an EPA-approved fungicide (non-QoI mode of action) with known curative activity if a third application is needed.*

***Contact your local, state or federal agricultural authorities or local retailer for a list of fungicides approved in your state with known curative properties against Asian soybean rust.

Need for Season-long Monitoring, Regardless of Headline® fungicide Program Selected

The key to adequate season-long control of Asian soybean rust is careful monitoring and scouting of bean and pea fields all season, especially from initiation of flowering through pod fill. After the first application, maintain a thorough monitoring and scouting program. Apply follow-up fungicide treatments as needed based on crop stage of growth, yield potential and as the residual protection of the first application begins to wane.

Thorough spray coverage of bean and pea plants is essential for optimum control. Utilize spray application techniques including sufficient water carrier per acre, pressure and proper nozzle selection that ensure thorough coverage.

Table 2. Headline® fungicide application instructions when Asian soybean rust has not been identified in the bean or pea field to be treated, is not present in the local geographical area and spores are not present or predicted to be present in the local geographical area.

Application 1	Treatment	**Headline** (6 to 9 fl ozs/acre)[a] + adjuvant
	Timing	R1 to R3 leaf stage (1st flower to beginning pod)
Application 2[c]	Treatment	**Headline** (6 to 9 fl ozs/acre)[a] + adjuvant + EPA-approved fungicide (non-Qol mode of action) with known curative activity against Asian soybean rust[b]
	Timing	21 days after Application 1 **or** Earlier (no sooner than 7 days) if monitoring shows active disease

[a] Higher labeled rates of **Headline** provide longer residual control of Asian soybean rust.

[b] Contact your local, state or federal agricultural authorities or local retailer for a list of fungicides approved in your state for this purpose.

[c] Continue to carefully monitor and scout bean or pea fields as described in section **VII. Management of Asian Soybean Rust**. If Asian soybean rust, including spores, is detected in your fields or local geography, the treatment described in Application 2 may be needed. Base the need for this treatment on crop stage of growth, environmental conditions and yield potential. Consult your local retailer or university extension representative for guidance, as needed. Refer to section **II. Application Instructions**. *Additional fungicide applications may be needed if Asian soybean rust pressure is extremely high and conditions are favorable for disease development later in the growing season. Continue the monitoring and scouting program and apply an EPA-approved fungicide (non-Qol mode of action) with known curative activity if a third application is needed.*

Recommendations for ground applications

For best Asian soybean rust control, spray coverage should contact all soybean foliage, including both upper and lower areas of the soybean canopy. Recommendations for best spray coverage include:

1. Select spray nozzles that maximize medium to fine droplets.
2. Increase spray volume per acre to a minimum of 15 gpa.
3. Increase spray pressure (within nozzle specifications) to maximize penetration of spray into the soybean canopy.

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The **Directions For Use** of this product reflect the opinion of experts based on field use and tests. The directions are believed to be reliable and must be followed carefully. However, it is impossible to eliminate all risks inherently associated with the use of this product. Crop injury, ineffectiveness or other unintended consequences may result because of such factors as weather conditions, presence of other materials, or use of the product in a manner inconsistent with its labeling, all of which are beyond the control of BASF CORPORATION ("BASF") or the Seller. To the extent consistent with applicable law, all such risks shall be assumed by the Buyer.

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