SPECIMEN

CLEARCAST®

herbicide

For the control of vegetation in and around aquatic and noncropland sites

Active Ingredient:	
ammonium salt of imazamox 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5-(methoxymethyl)-3-pyridinecarboxylic acid*	12.1%
Other Ingredients:	87.9%
Total:	100.0%

*Equivalent to 11.4% 2-[4,5-dihydro-4-methyl-4-(1-methylethyl)-5-oxo-1*H*-imidazol-2-yl]-5- (methoxymethyl)-3-pyridinecarboxylic acid (1 gallon contains 1.0 pound of active ingredient as the free acid)

US Patent No. 5,334,576
EPA Reg. No. 241-437

EPA Est. No.

KEEP OUT OF REACH OF CHILDREN

CAUTION/PRECAUCIÓN

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 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

BASF
The Chemical Company

FIRST AID	
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 eye open and rinse slowly and gently with water for 15 to 20 minutes. • Remove contact lenses, if present, after the first 5 minutes; then continue rinsing eye. • 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 mouth-to-mouth if possible. • Call a poison control center or doctor for further treatment advice.

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

CAUTION. Harmful if absorbed through skin or inhaled. Avoid breathing spray mist. Avoid contact with skin, eyes or clothing.

Personal Protective Equipment (PPE)

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

Applicators and other handlers must wear:
- Long-sleeved shirt and long pants
- Chemical-resistant gloves, such as butyl rubber ≥ 14 mils, or natural rubber ≥ 14 mils, or neoprene rubber ≥ 14 mils, or nitrile rubber ≥ 14 mils
- Shoes plus socks

Follow 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.

USER SAFETY RECOMMENDATIONS

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

Environmental Hazards

This pesticide may be hazardous to plants outside the treated area. **DO NOT** apply to water except as specified in this label. **DO NOT** contaminate water when disposing of equipment washwaters and rinsate.

Directions For Use

It is a violation of federal law to use this product in a manner inconsistent with its labeling. This labeling must be in the possession of the user at the time of pesticide application.

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.

Ensure spray drift to nontarget species does not occur.

DO NOT apply **Clearcast® herbicide** in any manner not specifically described in this label.

Observe all cautions and limitations on this label and on the labels of products used in combination with **Clearcast**. **DO NOT** use **Clearcast** other than in accordance with the instructions set forth on this label. Keep containers closed to avoid spills and contamination.

STORAGE AND DISPOSAL

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

Pesticide Storage

Keep from freezing.
DO NOT store below 32° F.
DO NOT contaminate water, food or feed by storage or disposal.

Pesticide Disposal

Wastes resulting from the use of this product may be disposed of on-site or at an approved waste disposal facility.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Disposal

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.

In Case of Emergency

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

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

In case of medical emergency regarding this product, call:

- Your local doctor for immediate treatment
- Your local poison control center (hospital)
- BASF Corporation 1-800-832-HELP (4357)

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

- 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.

General Information

Clearcast® herbicide is an aqueous formulation that may be diluted in water and either applied directly to water for the control/suppression of certain submerged aquatic vegetation or applied as a broadcast or spot spray to floating and emergent vegetation. Aquatic sites that may be treated include estuarine and marine sites, ponds, lakes, reservoirs, wetlands, marshes, swamps, bayous, arroyos, ditches, canals, streams, rivers, creeks and other slow-moving or quiescent bodies of water. **Clearcast** may also be used during drawdown conditions. **Clearcast** may also be applied to noncropland sites for terrestrial and riparian vegetation control.

Clearcast is quickly absorbed by foliage and/or plant roots and rapidly translocated to the growing points stopping growth. Susceptible plants may develop a yellow appearance or general discoloration and will eventually die or be severely growth inhibited.

Clearcast is herbicidally active on many submerged, emergent and floating broadleaf and monocot aquatic plants. The relative levels of control and selectivity can be manipulated by using a choice of rates and herbicide placement (water injected or floating/emergent foliar application).

To help maintain the utility of herbicide programs, the use of herbicides with different modes of action are effective in managing weed resistance.

SPRAY ADJUVANTS

Applications of **Clearcast** targeting emergent, floating or shoreline species require the use of a spray adjuvant. Always use a spray adjuvant that is appropriate for aquatic sites.

Nonionic Surfactants. Use a nonionic surfactant at the rate 0.25% volume/volume (v/v) or higher (see manufacturer's label) of the spray solution (0.25% v/v is equivalent to 1 quart in 100 gallons). For best results, select a nonionic surfactant with an HLB (hydrophilic to lipophilic balance) ratio between 12 and 17 with at least 70% surfactant in the formulated product (alcohols, fatty acids, oils, ethylene glycol or diethylene glycol should not be considered as surfactants to meet the above requirements).

Methylated Seed Oils or Vegetable Oil Concentrates. Instead of a surfactant, a methylated seed oil or vegetable-based seed oil concentrate may be used at the rate of 1.5 to 2 pints per acre. When using spray volumes greater than 30 gallons per acre, methylated seed oil or vegetable-based seed oil concentrates should be mixed at a rate of 1% of the total spray volume, or alternatively use a nonionic surfactant as described above. Research indicates that these oils may aid in **Clearcast** deposition and uptake by plants under stress.

Silicone-based Surfactants. See manufacturer's label for specific rate recommendations. Silicone-based surfactants

may reduce the surface tension of the spray droplet allowing greater spreading on the leaf surface as compared to conventional nonionic surfactants. However, some silicone-based surfactants may dry too quickly, limiting herbicide uptake.

Invert Emulsions. Clearcast® herbicide can be applied as an invert emulsion. The spray solution results in an invert (water-in-oil) spray emulsion designed to minimize spray drift and spray runoff, resulting in more herbicide on the target foliage. The spray emulsion may be formed in a single tank (batch mixing) or injected (in-line mixing). Consult the invert chemical label for proper mixing directions.

Other. An antifoaming agent, spray pattern indicator, sinking agent or drift-reducing agent may be applied at the product labeled rate if necessary or desired.

Aquatic Use Directions

Clearcast may be applied directly to the water for the control of submerged aquatic plant species and some emergent and floating species, or as a foliar application specifically for emergent and floating species.

DO NOT exceed maximum use rate per application:

Water treatment - 500 ppb
(173 fluid ozs of **Clearcast** per acre foot)

Foliar broadcast application - 2 quarts per acre
(0.5 lb ae/A)

Foliar spot application - up to 5% **Clearcast** by volume

Clearcast may be applied via surface and aerial equipment including both fixed-wing aircraft and helicopter.

Spray Drift Requirements For Aerial Application

- Applicators are required to use a coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater for release heights below 10 feet. Applicators are required to use a very coarse or coarser droplet size or, if specifically using a spinning atomizer nozzle, applicators are required to use a VMD of 475 microns or greater for release heights above 10 feet. Applicators must consider the effects of nozzle orientation and flight speed when determining droplet size.
- Applicators are required to use upwind swath displacement.
- The boom length must not exceed 60% of the wingspan or 90% of the rotor blade diameter to reduce spray drift.
- **DO NOT** apply when wind speed is greater than 10 mph.
- If applying at wind speeds less than 3 mph, the applicator must determine if
  1. Conditions of temperature inversion exist **or**
  2. Stable atmospheric conditions exist at or below nozzle height.

DO NOT make applications into areas of temperature inversions or stable atmospheric conditions.

Spray Drift Requirements For Ground Boom Application

- Applicators are required to use a nozzle height below 4 feet above the ground or plant canopy and coarse or coarser droplet size (ASABE S572) or, if specifically using a spinning atomizer nozzle, applicators are required to use a volume mean diameter (VMD) of 385 microns or greater.
- Applications with wind speeds greater than 10 mph are prohibited.
- Applications into temperature inversions are prohibited.

DO NOT apply when wind conditions may result in drift, when temperature inversion conditions exist, or when spray may be carried to sensitive areas. See **Managing Off-target Movement** section for more drift reduction recommendations.

SURFACE APPLICATION

Application to targeted emergent and/or floating vegetation. To make surface applications targeting emergent or floating vegetation, uniformly apply with properly calibrated broadcast or spot treatment equipment in 10 or more gallons of water per acre. Spot treatments can be made with up to 5% **Clearcast** by volume. To ensure thorough spray coverage, higher spray volumes may be required when treating areas with large and/or dense vegetation. Use an appropriate spray pressure to minimize the drift potential depending upon spray equipment, conditions and application objectives.

Guidelines for Foliar Treatment of Emergent and Floating Vegetation

- Always use a surfactant for foliar applications of emergent and floating weeds.
- Foliar applications of **Clearcast** may be made as a broadcast spray or as a spot spray with a percent spray solution ranging from 0.25% to 5% **Clearcast** by volume.
- Control will be reduced if spray is washed off foliage by wave action.

In aquatic sites, those application techniques described in the **Terrestrial Use Directions** section may be used to treat emergent vegetation.

Application to water targeting submerged and/or emergent/floating vegetation. Clearcast may be broadcast applied to the water surface or injected below the water surface. **Clearcast** may be applied as undiluted product or diluted with water prior to application. Under surface-matted conditions, **Clearcast** should be injected below the water surface to achieve better product distribution.

Apply **Clearcast** to water to achieve a final concentration of the active ingredient of no more than 500 ppb. Multiple applications of **Clearcast** may be made during the annual growth cycle to maintain the desired vegetation response.

Clearcast® herbicide Rates Per Treated Surface Acre

Average Water Depth of Treatment Site (feet)	Desired Active Ingredient Concentration (ppb)*			
	50	100	200	500
	Clearcast Rate per Treated Surface Acre (fl ozs)			
1	17	35	69	173
2	35	69	138	346
3	52	104	207	518
4	70	138	277	691
5	87	173	346	864
6	104	207	415	1037
7	122	242	484	1210
8	139	277	553	1382
9	157	311	622	1555
10	174	346	691	1728

* **Clearcast** contains 1.0 pound of active ingredient per gallon. There are 128 fl ozs in one gallon.

AERIAL APPLICATION

Clearcast may be applied by both fixed wing aircraft and helicopter. There is no minimum spray volume when making applications directly to the water. For applications targeting emergent and/or floating vegetation, uniformly apply with properly calibrated equipment in 5 or more gallons of water per surface acre. For best results, aerial applications should be made using a minimum of 20 gallons per acre.

DRAWDOWN APPLICATION

Clearcast may be used in drawdown situations to provide postemergence and/or preemergence control/suppression of aquatic vegetation. Apply **Clearcast** as a broadcast spray at rates up to 64 fl ozs/A or as a spot spray treatment with up to 5% **Clearcast** by volume. Applications should be made when water has receded and exposed soil is moist to dry. For postemergence (foliar) applications, wait at least two weeks after application before reintroducing water. When treating irrigation canals, the initial flush of recharge water after application must not be used for irrigation purposes.

Restrictions and Limitations

General Limitations

DO NOT apply **Clearcast** to achieve a total active ingredient concentration in the water greater than 500 ppb.

DO NOT apply more than 2 quarts of **Clearcast** per surface acre for the control of emergent and floating vegetation.

Irrigation Restrictions

- **DO NOT** use treated water to irrigate greenhouses, nurseries or hydroponics.
- **DO NOT** plant non-**CLEARFIELD®** canola, onions, potatoes, or sugar beets in soils that have been previously irrigated with **Clearcast**-treated water until a soil bioassay successfully demonstrates acceptable levels of crop tolerance.
- **DO NOT** use any **Clearcast**-treated waters from still or quiescent sources for irrigation purposes less than 24 hours after **Clearcast** application is completed.
- Waters receiving **Clearcast** either as a water treatment or as a foliar treatment on emergent/floating plants may be used for irrigation as long as concentrations are ≤ 50 ppb. Treated waters resulting in concentrations > 50 ppb may not be used for irrigation until residue levels have been shown to be ≤ 50 ppb by an acceptable method.
- Still and quiescent waters with an average depth of four (4) or more feet receiving a foliar application of **Clearcast** (≤ 2 quarts per acre) to emergent/floating vegetation may be used for irrigation on allowable sites 24 hours after application is completed.
- There are no irrigation restrictions on allowable sites for the use of treated water from flowing waters, such as irrigation canals with an average depth of four (4) or more feet, receiving a foliar application of **Clearcast** (≤ 2 quarts per acre) to emergent/floating vegetation.
- After application of **Clearcast** to dry irrigation canals/ditches, the initial flush of water during recharge must not be used for irrigation purposes.

Other Water Use Restrictions

There are no restrictions on livestock watering, swimming, fishing, domestic use, or use of treated water for agricultural sprays.

Potable Water. Clearcast may be applied to potable water sources at concentrations up to 500 ppb to within a distance of 1/4 mile from an active potable water intake. Within 1/4 mile of an active potable water intake, **Clearcast** may be applied, but water concentrations resulting from injection and/or foliar applications may not exceed 50 ppb. If water concentrations greater than 50 ppb are required, the potable water intake must be shut and, if necessary, an alternate water supply be made available until the water concentration can be shown to be less than 50 ppb by an acceptable method.

Endangered Plant Species

To prevent potential negative impacts to endangered plant species, **DO NOT** apply **Clearcast** in a way that adversely affects federally listed endangered and threatened species.

Emergent, Floating, and Shoreline Species Controlled with Foliar Applications

Common Name	Scientific Name	Rate (fl ozs/A)	Comments
Alligatorweed	*Alternanthera philoxeroides*	64	Repeat applications may be necessary. Add 1 qt/A of **Rodeo® herbicide** for quicker brownout.
American lotus	*Nelumbo lutea*	64	
Arrowhead	*Sagittaria* spp.	32	
Cattail	*Typha* spp.	32 to 64	Apply after full green up through killing frost.
Chinese tallowtree	*Sapium sebiferum*	32 to 64	
Common reed	*Phragmites* spp.	64	Use 1 qt/A methylated seed oil (MSO); apply in late vegetative stage up to killing frost. May also be applied as a spot treatment using 1% to 2% **Clearcast® herbicide** per spray volume. Older stands of phragmites and stands growing in water may be more difficult to control and will require follow-up applications.
Common salvinia	*Salvinia minima*	32 to 64	Apply with MSO or MSO + silicone-based surfactant; retreatment will be necessary.
Floating pennywort	*Hydrocotyle ranunculoides*	32 to 64	Repeat applications may be necessary.
Four-leaf clover	*Marsilea* spp.	32	
Frogbit	*Lymnobium spongia*	16 to 32	Water concentrations of 50 to 100 ppb will control frogbit.
Mexican lily	*Nymphaea mexicana*	32 to 64	
Mosquito fern	*Azolla* spp.	—	Apply using 2% **Clearcast** and 1% MSO by volume.
Parrotfeather	*Myriophyllum aquaticum*	64	Apply only to emergent vegetation.
Pickerelweed	*Pontederia cordata*	32	
Smartweed	*Polygonum* spp.	16 to 32	
Variable-leaf milfoil	*Myriophyllum heterophyllum*	64	Apply with MSO (1% v/v) as an emergent foliar treatment when plants have emerged on the surface. May also be applied as spot treatment using 1 to 3% **Clearcast** per spray volume.
Water chestnut	*Trapa natans*	64	Apply with MSO to emergent part of plant. May also be applied as a spot treatment using 2% **Clearcast** per spray volume.
Water hyacinth	*Eichhornia crassipes*	16 to 32	Water concentrations of 50 to 100 ppb will control water hyacinth.
Water primrose	*Ludwigia* spp.	32	Add 1 qt/A of **Rodeo** for quicker brownout.
Watershield	*Brasenia schreberi*	48 to 64	Water concentrations of 50 to 100 ppb will control watershield.
Water lily	*Nymphaea* spp.	32 to 64	
Spatterdock	*Nuphar lutea*	64	

Submersed Species Controlled with Water-injected Applications

Common Name	Scientific Name	Rate (ppb)	Comments
Bladderwort	*Utricularia floridana* *U. inflata*	50 to 100	
Eurasian watermilfoil	*Myriophyllum spicatum*	100 to 200	See **Special Weed Control** for application directions.
Hydrilla	*Hydrilla verticillata*	150 to 200	See **Special Weed Control** for application directions.
Northern watermilfoil	*Myriophyllum exalbescens*	100 to 200	
Pondweed, American flat stemmed leafy Illinois small variable-leaf clasping largeleaf	*Potamogeton* spp. *P. nodosus* *P. zosteriformis* *P. foliosus* *P. illinoensis* *P. pusillus* *P. gramineus* *P. diversifolius* *P. perfoliatus* *P. amplifolius*	50 to 100	
Pondweed, curlyleaf	*Potamogeton crispus*	50	
Pondweed, sago	*Potamogeton pectinatus* (*Stuckenia pectinatus*)	100	See **Special Weed Control** for application directions.
Spikerush	*Eleocharis* spp.	200	Apply as a submerged spot treatment, concentrating the application in the area of the spikerush. If emerged, then spot treat with 2% **Clearcast® herbicide** by volume at 50 GPA, or 1% at 100 GPA.
Variable-leaf milfoil	*Myriophyllum heterophyllum*	100 to 200	
Water stargrass	*Heteranthera dubia*	100	
Widgeon grass	*Ruppia maritima*	200	

Special Weed Control

Eurasian watermilfoil. Apply **Clearcast** at 100 to 200 ppb to actively growing plants early in the growing season. Applications made to mature milfoil (vegetation topped out) may require multiple applications.

Hydrilla. Apply **Clearcast** at 150 to 200 ppb to actively growing plants early in the growing season. Applications made prior to topped-out hydrilla may require repeat application.
A single application of 50 to 75 ppb can be used to suppress and growth-regulate hydrilla for up to 10 to 12 weeks. If desired, an additional 50 to 75 ppb can be applied to extend the period of growth suppression when normal hydrilla growth resumes.

Sago pondweed. Sago pondweed may be controlled in nonflowing water with water-injected applications at 100 ppb. In dry ditches (drainage and irrigation), sago pondweed may be controlled or growth suppressed with soil-applied **Clearcast** at 64 fl ozs/A. In irrigation canals, apply **Clearcast** after drawdown and prior to water recharge.

Terrestrial Use Directions

Clearcast® herbicide may be applied with ground and aerial equipment including both fixed wing aircraft and helicopter. Applications may be made using foliar broadcast spray, foliar spot spray, injection (hack and squirt), frill and girdle, cut stump, or basal methods.

BROADCAST SPRAY APPLICATION. DO NOT apply more than 64 fl ozs **Clearcast** per acre.

FOLIAR SPOT APPLICATION. Apply **Clearcast** as a percent solution, containing up to 5% **Clearcast** by volume.

INJECTION (HACK AND SQUIRT), FRILL AND GIRDLE, AND CUT STUMP APPLICATION. Treatments may be made using up to 100% **Clearcast** by volume.

BASAL APPLICATION. Treatments can be made using up to 25% **Clearcast** by volume. Basal applications require the use of a good emulsion system to maintain **Clearcast** in a stable emulsion with the penetrating agent being used.

All foliar applications of **Clearcast** require the use of a spray adjuvant. Refer to **SPRAY ADJUVANTS** section for additional information.

Managing Off-target Movement
The information that follows is general guidance for managing and minimizing off-target exposure of this product. Specific use recommendations in this label may vary from these general guidelines depending on the application method and objectives and should supersede the general information provided below.

Avoiding spray drift at the application site is the responsibility of the applicator. 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.

The following drift management requirements must be followed to avoid off-target drift movement from aerial applications:

1. The distance of the outermost nozzles on the boom must not exceed 3/4 the length of the wingspan or 90% of the rotor.
2. Nozzles must always point backward parallel with the airstream and never be pointed downward more than 45 degrees.
3. **DO NOT** apply if wind speed is greater than 10 mph, except when making injection or subsurface applications to water.

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

The applicator must be familiar with and take into account the information covered in the aerial drift reduction advisory information presented below.

Information On Droplet Size
The most effective way to reduce drift potential is to apply large droplets. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Applying larger droplets reduces drift potential but will not prevent drift if applications are made improperly or under unfavorable environmental conditions (see **Wind**; **Temperature and Humidity**; and **Temperature 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 provides 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.

Boom Length
For some use patterns, reducing the effective boom length to less than 3/4 of the wingspan or 90% of rotor length may further reduce drift without reducing swath width.

Application Height
Applications must not be made at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

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

Wind
Drift potential is lowest between wind speeds of 2 to 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.
NOTE: Local terrain can influence wind patterns. Every applicator should be familiar with local wind patterns and how they affect spray drift.

Temperature and Humidity
When making applications in 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 must 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 must only be applied when the potential for drift to adjacent sensitive areas (e.g. residential areas, bodies of water, known habitat for threatened or endangered species, or crops) is minimal (e.g. when wind is blowing away from the sensitive areas).

Applicator is responsible for any loss or damage which results from spraying **Clearcast® herbicide** in a manner other than recommended in this label. In addition, applicator must follow all applicable state and local regulations and ordinances in regard to spraying.

Clearcast® herbicide may be used for the control of the following plant species. **Clearcast** may be effective for the control or suppression of additional plant species not listed below. The use of **Clearcast** for the control or suppression of undesirable plants not listed below may be done at the discretion of the user.

To the extent consistent with applicable law, the user assumes responsibility for any lack of control or suppression associated with application to weeds not listed on this label.

Weeds Controlled

Common Name	Scientific Name	Rate	Comments
Alligator weed	*Alternanthera philoxeroides*	64 fl ozs/A Foliar	Addition of glyphosate will improve efficacy.
Annual ryegrass	*Lolium multiflorum*	16 to 32 fl ozs/A Foliar	
Brazilian pepper; Christmasberry	*Schimus terebinthifolius*	2% v/v Foliar	
California bullrush	*Schoenoplectus californicus*	64 fl ozs/A Foliar	
Camphor tree	*Cinnamomum camphora*	2% v/v Foliar	
Cattail	*Typha* spp.	32 to 64 fl ozs/A Foliar	
Chinese tallowtree; Popcorn tree	*Sapium sebiferum*	32 to 64 fl ozs/A Foliar	See **Special Weed Control** section.
Giant ragweed*	*Ambrosia trifida*	32 to 64 fl ozs/A Foliar	
Jamaican nightshade	*Solanum jamaicense*	2% v/v Foliar	
Japanese stiltgrass	*Microstegium vimineum*	32 to 64 fl ozs/A Foliar	Use MSO at 1% by spray volume. **Clearcast** will provide some residual control of subsequent seedling emergence.
Johnsongrass, seedling rhizome	*Sorghum halepense*	 16 fl ozs/A Foliar 32 to 64 fl ozs/A Foliar	
Old world climbing fern	*Lygodium microphyllum*	5% v/v Foliar	
Phragmites	*Phragmites australis*	64 fl ozs/A Foliar	Use 1 qt/A methylated seed oil (MSO); apply in late vegetative stage up to killing frost. May also be applied as a spot treatment using 1% to 2% **Clearcast** per spray volume. Older stands of phragmites and stands growing in water may be more difficult to control and will require follow-up applications.
Purple loosestrife	*Lythrum salicaria*	32 to 64 fl ozs/A Foliar	
Sedge*, purple yellow	 *Cyperus rotundus* *Cyperus esculentus*	 32 fl ozs/A Foliar 32 fl ozs/A Foliar	
Smartweed	*Polygonum* spp.	32 to 64 fl ozs/A Foliar	
Spike rush	*Eleocharis* spp.	64 fl ozs/A Foliar	
Taro	*Taro* spp.	64 fl ozs/A Foliar 5% v/v Foliar	
Tropical soda apple	*Solanum viarum*	2% v/v Foliar	

(continued)

Weeds Controlled *(continued)*

Common Name	Scientific Name	Rate	Comments
Water primrose	*Ludwigia* spp.	32 to 64 fl ozs/A Foliar	Addition of glyphosate will improve efficacy.
Wetland nightshade	*Solanum tampicense*	2% v/v Foliar	
Whitetop; Hoary cress	*Cardaria draba*	8 to 16 fl ozs/A Foliar	
*Suppression of larger, well-established plants			

In general, the use of methylated seed oil (MSO) at 1% v/v will provide the best control with foliar applications.

Special Weed Control

Chinese tallowtree. Clearcast® herbicide at 32 to 64 fl ozs/A or 0.5 to 2.0% v/v may be applied as a foliar application for selective control of Chinese tallowtree in and around tolerant hardwood species. Chinese tallowtree will be controlled with foliar applications using aerial, handgun, or backpack application methods. When treating Chinese tallowtree in mixed stands of hardwoods, application method and spray volume should ensure adequate coverage of targeted Chinese tallowtree plants. Methylated seed oil should be added at 32 fl ozs/A for broadcast applications, or at 1% v/v for spot backpack and handgun applications. Tolerant hardwood species may exhibit varying degrees of leaf discoloration and temporary injury.

Conditions of Sale and Warranty

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.

BASF warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions For Use**, subject to the inherent risks, referred to above.

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