

7969-339

2/25/2014

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UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

Jeffrey H. Birk
BASF
26 Davis Drive
Research Triangle Park, NC 27709

FEB 25 2014

Subject: Label Amendment
Product Name: Oasis Aquatic Herbicide
EPA Registration Number: 7969-339
Application Dated: October 28, 2013

Dear Mr. Birk,

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), as amended, is acceptable.

A stamped copy of your label is enclosed for your records. This label supersedes all previously accepted labels. You must submit one (1) copy of the final printed label before you release the product for shipment. Products released for shipment after eighteen (18) months from the date of this letter or the next printing of the label, whichever occurs first, must bear the new revised label. If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA §6(e). Your release for shipment of the product constitutes acceptance of these conditions.

If you have any questions, please contact Emily Schmid of my staff at (703) 347-0189 or schmid.emily@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Kathryn V. Montague".

Kathryn V. Montague, Product Manager 23
Herbicide Branch
Registration Division (7505P)
Office of Pesticide Programs

2/14

Group 27 Herbicide

Oasis®

aquatic herbicide

ACCEPTED
FEB 25 2014
The Federal Insecticide,
Fungicide and Rodenticide Act,
as amended for this pesticide
7969-339

A selective systemic herbicide for management of aquatic vegetation in ponds, lakes, reservoirs, marshes, wetlands, bayous, drainage ditches, canals, and slow-moving or quiescent bodies of water including vegetation control on shoreline and riparian areas within or adjacent to these and other aquatic sites

Active Ingredient:

topramezone, [3-(4,5-dihydro-isoxazolyl)-2-methyl-4-(methylsulfonyl)phenyl][5-hydroxy-1-methyl-1H-pyrazol-4-yl]methanone

29.7%

Other Ingredients:

70.3%

Total:

100.0%

1 gallon contains 2.8 pounds of topramezone free acid.

EPA Reg No. 7969-339

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 the label, find someone to explain it to you in detail.)


See inside for **First Aid, Precautionary Statements, Directions For Use, and Conditions of Sale and Warranty.**

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

Shake well before using.

Net Contents:

BASF Corporation
26 Davis Drive
Research Triangle Park, NC 27709

E-SUBMISSION  **BASF**
The Chemical Company

FIRST AID

If in eyes	<ul style="list-style-type: none"> • 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 swallowed	<ul style="list-style-type: none"> • Call a poison control center or doctor immediately for treatment advice. • Have a 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	<ul style="list-style-type: none"> • 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.

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 swallowed or absorbed through the skin. Causes moderate eye irritation. Avoid contact with skin, eyes, or clothing.

Personal Protective Equipment (PPE)

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

Applicators, mixers, loaders, and other handlers must wear:

- Long-sleeved shirt and long pants
- Chemical-resistant gloves **Category A**
- Shoes plus socks
- Goggles, face shield, or safety glasses

EXCEPTION: Mixers and loaders supporting aerial applications to aquatic areas using engineering controls (i.e. closed system). Pilots must use a closed cabin or cockpit.

Discard clothing and other absorbent materials that have been drenched or heavily contaminated with this product's concentrate. **DO NOT** reuse them. 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/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

Follow use directions carefully to avoid adverse effects on nontarget vegetation. **DO NOT** contaminate water when disposing of equipment washwater or rinsate. **DO NOT** apply this product through any type of irrigation system. **DO NOT** apply when weather conditions favor drift from target treatment areas.

Product must be used in a manner that will prevent back-siphoning in wells, spills, or improper disposal of excess pesticide, spray mixture, 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.

Shake well before using.

IMPORTANT: DO NOT use water from any treated site for food/feed crop irrigation other than corn until concentrations are determined to be less than or equal to 1 part per billion (ppb). See exceptions under **Application to Water Used for Irrigation** section of this label.

Concentrations in food/feed crop irrigation water must be monitored until concentrations are 1 ppb or less. Water samples must be collected and analyzed using **FasTEST*** or other approved analytical methods. Refer to all precautions and restrictions in **Application to Water Used for Irrigation** section of this label.

For best results, avoid making in-water application to areas subject to rapid dilution of treated water and/or where sufficient exposure to targeted vegetation cannot be maintained, such as small spot or shoreline treatments in larger bodies of water.

All applicable directions, restrictions, precautions and **Conditions of Sale and Warranty** are to be followed. This labeling must be in the user's possession during application.

STORAGE AND DISPOSAL

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

Pesticide Storage

Store product in original container only. Store product in a cool, dry place. **DO NOT** store this product under wet conditions. If this product has been stored where freezing temperatures have occurred, agitate or mix contents of container well before use. Avoid cross-contamination with other pesticides.

Pesticide Disposal

Wastes resulting from the use of this product must be disposed of on-site or at an approved waste disposal facility. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law. If these wastes cannot be disposed of according to label instructions, contact the state agency responsible for pesticide regulation or the Hazardous Waste representative at the nearest EPA Regional Office for guidance.

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.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Handling *(continued)*

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 pesticide 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.

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 a pesticide product. 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 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.

Product Information

Oasis® aquatic herbicide (also referred to as **Oasis** on this label) is a selective systemic herbicide for management of aquatic vegetation in ponds, lakes, reservoirs, marshes, wetlands, bayous, drainage ditches, canals, and slow-moving or quiescent bodies of water including vegetation control on shoreline and riparian areas within or adjacent to these and other aquatic sites.

Oasis may be applied directly into water or sprayed onto foliage of plants or exposed sediment after drawdown. Depending upon method of application and target plant, **Oasis** is absorbed by plants through leaves, from water through submersed plant shoots, or from soil or hydrosol by roots. For in-water treatments, rapid water movement or any condition resulting in rapid dilution of **Oasis** in treated water will reduce its effectiveness.

Oasis, an HPPD-inhibitor, inhibits the formation of carotene in susceptible plants; in the absence of carotene, chlorophyll is rapidly degraded by sunlight. Following in-water application, **Oasis** herbicidal symptoms appear in 7 to 10 days on actively growing plants as white (chlorotic) or pink growing points. Depending on conditions, slow plant death occurs over a period of 60 to 120 days or longer. Level of control depends on timing of initial application, application rate or concentration, exposure period, and weed species. Species susceptibility to **Oasis** may vary depending upon time of year, stage of growth, and water movement. For best results, apply **Oasis** immediately after weeds begin active growth. Application to mature target plants may require higher application rates and longer exposure periods to achieve control.

This label describes both required and recommended uses of a chemical analysis for the active ingredient. BASF Corporation recommends the use of High-Performance Liquid Chromatography (HPLC) for the determination of the active ingredient concentration in water. Contact BASF Corporation for the incorporation of this analysis, known as **FasTEST**®, into your treatment program. Other proven chemical analysis for the active ingredient may also be used. **FasTEST** is referenced in this label as the preferred method for rapid determination of the concentration of active ingredient in water.

For in-water treatments, application rates are provided in ounces or quarts of **Oasis** to achieve a desired concentration of the active ingredient in parts per billion (ppb). For in-water application, the maximum concentration of **Oasis** that can be applied initially and maintained through sequential applications is 50 parts per billion (ppb). The maximum concentration is the amount of product calculated as the target application rate; it is **NOT** determined by testing the concentration of active ingredient in treated water. Sequential applications may be made to maintain a concentration up to 50 ppb to ensure adequate exposure with the target weed species. Retreat the water to maintain a sufficient concentration, not to exceed a maximum concentration of 50 ppb for a minimum of 60 days or until satisfactory weed control is achieved. **DO NOT** exceed a

cumulative total of 150 ppb per year (0.407 lb ai per acre-foot per year).

For foliar applications (e.g. floating or ditchbank weeds) and for application to dry or dewatered aquatic sites, the maximum application rate is 16 fluid ounces per acre.

Resistance Management

The mode of action of **Oasis® aquatic herbicide** is inhibition of the 4-hydroxyphenylpyruvate dioxygenase (HPPD) enzyme. Weed populations may develop biotypes resistant to different herbicides with the same mode of action. If herbicides with the same mode of action are used repeatedly at the same site, resistant biotypes may eventually dominate the weed population and may not be controlled by these products.

Stewardship Guidelines For Use

Apply this product in compliance with Best Management Practices (BMP) that include site assessment, prescription, and implementation. BMP have been developed to maintain and/or monitor target concentrations over large areas, ensure accurate applications, and maximize treatment performance, minimize resistance development, and to monitor concentrations in water used for potential irrigation. BASF Corporation technical specialists will work with applicators and resource managers to ensure compatibility with potential uses of the water and management objectives.

The most effective use of **Oasis** for in-water application, especially in larger treatment areas, requires knowledge of the concentration of **Oasis** in treated water. This knowledge provides critical information for maximum performance, resistance management, irrigation restrictions, and overall product stewardship. This label describes both required and recommended uses of a chemical analysis for the active ingredient.

NOTE: For all forms of **Oasis** use, water sampling must be conducted as necessary to meet other label requirements for treated water use. Concentrations in food/feed crop irrigation water must be monitored until concentrations are 1 ppb or less before treated water may be used for irrigation.

To accurately determine the concentrations of **Oasis** in treated water, recommendations for the minimum number of water sampling locations per treated area are provided following. The number of sampling locations will vary by site based on site morphology, bathymetry, inflows, presence of irrigation intakes, and other plant management objectives. Site locations for such sampling should be geographically referenced (i.e. GPS coordinates) and evenly distributed throughout the treated water body. Consult BASF Corporation for site-specific recommendations.

Depending upon the application method and site-specific information, water sample(s) should be collected every 10 to 30 days. Sampling should be conducted more frequently as necessary to comply with any water use restrictions and to ensure efficacy.

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Table 1. Water Sampling Guidelines

Treated Area (acres)	Water Sample Locations
≤100	1
101 to 1,000	1 to 3
1,001 to 2,500	3 to 5
2,501 to 5,000	5 to 8
5,001 to 10,000	8 to 15
>10,001	1 additional site for every 1,000 acres

Best practices for use of any aquatic herbicide demand the highest level of environmental assessment and stewardship. Treatment prescriptions should be tailored to meet site-specific resource management plans. Implementation of treatment programs should be conducted with equipment and protocols designed to increase treatment success through precision and quick reaction to changing environmental conditions.

Use Precautions and Restrictions

- **Obtain Required Permits** - Consult appropriate state or local pesticide and/or water authorities before applying this product in or around public waters. Permits and posting or treatment notification may be required by state or local public agencies.
- **Potable Water Sources - DO NOT use treated water with a concentration above 45 ppb for potable use/human consumption.**

There are no restrictions on consumption of treated water by livestock, pets, or other animals up to the maximum concentration of 50 ppb.
- There are no restrictions on use of treated water for recreational purposes including swimming and fishing up to the maximum concentration of 50 ppb.
- **Chemigation - DO NOT** apply **Oasis** through any type of irrigation system.
- For postemergence foliar application and exposed sediment treatment where some weed growth is present, mix **Oasis** with a surfactant. Use only surfactants approved or appropriate for aquatic use when applying over or near an aquatic site.
- For treatments out of water, **DO NOT** permit spray mists containing **Oasis** to drift onto desirable susceptible broadleaf plants or injury may occur. Further information on spray drift management is provided in the **Spray Drift Management** section of this label.

Application to Water Used for Irrigation

Irrigation Restrictions

Using irrigation water treated with **Oasis® aquatic herbicide** may result in injury to sensitive vegetation. Along with the following restrictions, consultation with a BASF Aquatic Specialist is recommended to review potential irrigation use of treated water as a precaution before application.

The following restrictions are required for irrigation use of treated water:

- **DO NOT** use water treated with **Oasis** for hydroponic farming until **Oasis** concentrations are ≤ 1.0 ppb.
- **DO NOT** use water treated with **Oasis** for irrigating greenhouse or nursery plants until **Oasis** concentrations are ≤ 1.0 ppb.
- **Food/feed Crops - DO NOT** use **Oasis**-treated water for irrigation of food/feed crops other than corn, including irrigation of range and pasture sites, if herbicide concentrations exceed 1 ppb.
- **Corn** - Corn may be irrigated if **Oasis** concentrations in treated water are ≤ 25 ppb.
- **Turf Irrigation**
 - **DO NOT** use treated water for irrigation of established turf if **Oasis** concentrations exceed 30 ppb without prior consultation with BASF.
 - **DO NOT** use treated water for irrigation of golf course greens and tees or newly seeded or sodded grass if **Oasis** concentrations exceed 1 ppb without prior consultation with BASF.
 - **DO NOT** use treated water for irrigation of sod farms or similar facilities if **Oasis** concentrations exceed 1 ppb without prior consultation with BASF.
- **Non-food/Non-feed Crop Irrigation**
 - **DO NOT** use treated water for irrigation of landscape ornamentals if **Oasis** concentrations exceed 30 ppb without prior consultation with BASF.
 - For other non-food/non-feed irrigation uses not previously described, consult BASF if **Oasis** concentrations exceed 1 ppb before using water for irrigation as determined using **FasTEST*** or other analytical techniques.
- **Application to Exposed Sediments - Oasis** may be applied to exposed sediments of dewatered areas of aquatic sites. Upon inundation, all label restrictions apply to the use of water from these treated areas.
NOTE: Refer to **Application to Exposed Sediments of Dewatered Irrigation Canals** section for specific directions following application in dewatered irrigation canals.
- Areas previously irrigated with water treated with **Oasis** may be planted in corn. For other food/feed crops and in areas irrigated with **Oasis** at concentrations exceeding 1 ppb, consult BASF Corporation for site-specific risk evaluations before planting rotational crops or other plants.
- The maximum allowable concentration of **Oasis** in water used to irrigate food/feed crops other than corn is 1 ppb and 25 ppb for corn. The maximum allowable concentration of **Oasis** in water used to irrigate non-food/non-feed crops such as established turf and landscape

ornamentals is 30 ppb without prior consultation with BASF. Active irrigation intakes with the potential to receive treated water should be shut off or otherwise not used for restricted irrigation purpose until the herbicide level in treated water can be determined by **FasTEST** or other analytical techniques to be less than the maximum allowable concentration.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The interaction of many equipment-related and weather-related factors determines the potential for spray drift. Make application only when there is little or no hazard from spray drift. The applicator is 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 between the outermost nozzles on the boom must not exceed 75% of the wingspan of fixed-wing aircraft or 90% of the helicopter rotor width.
2. Nozzle setup must use a coarse spray quality category per ASABE S-572 Standard.

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

The applicator should be familiar with and take into account the information covered in **Aerial Drift Reduction Advisory**. In general, the best drift management strategy is to apply the largest droplets that provide sufficient coverage and control.

Aerial Drift Reduction Advisory

Information on Droplet Size. For S-572 ASABE Standard compliance, see nozzle manufacturer catalogs, NAAA booklet, or USDA literature or website for nozzle and application conditions. The best drift management strategy is to apply the largest droplets that provide sufficient coverage and control. Larger droplets reduce 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.
- **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 the recommended practice.

- **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. Reducing the effective boom length to 70% of the wingspan of fixed-wing aircraft or 80% of the helicopter rotor width may further reduce drift without reducing swath width.

Application Height. Applications should 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, the applicator must compensate for this displacement by adjusting the path of the aircraft or boom upwind. Swath adjustment distance should increase with increasing drift potential (higher wind, height, smaller drops, 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. State and local regulations with regard to minimum and maximum wind speeds during aerial application may be more restrictive. Aerial applicators should be familiar with these regulations.

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

Temperature Inversions. Applications should not occur during a local low-level temperature inversion because drift potential is high. Small droplets 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. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of the 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. *Oasis*® aquatic herbicide should only be applied to the intended treatment area when the potential for drift to adjacent sensitive areas (e.g. residential areas, known habitat for threatened or endangered species, nontarget vegetation) is minimal (e.g. when wind is blowing away from the sensitive areas). Refer to **Wind in Spray Drift Management** section for more specific details.

Aquatic Plants Controlled

Oasis performance and selectivity depends on dosage, time of year, stage of growth, method of application, and water movement.

Table 2 describes expected efficacy using in-water rates of 50 ppb or less under ideal treatment conditions for aquatic plant control or partial control. Plants listed as partially controlled are less susceptible under most use conditions but may show herbicide stress or partial control during active treatment phase. Use of lower rates will increase selectivity on some species listed following. Consulting with BASF Corporation is recommended before applying **Oasis** to determine best treatment protocols for given target vegetation.

Table 2. Vascular Aquatic Plant Control or Partial Control

Common Name	Scientific Name
Vascular Aquatic Plants Controlled	
Floating Plants	
Water hyacinth	<i>Eichhornia crassipes</i>
Water lettuce	<i>Pistia stratiotes</i>
Emersed Plants	
Broadleaf arrowhead	<i>Sagittaria latifolia</i>
Submersed Plants	
Hydrilla	<i>Hydrilla verticillata</i>
Pondweed ¹	<i>Potamogeton</i> spp.
Vascular Aquatic Plants Partially Controlled	
Emersed Plants	
American lotus	<i>Nelumbo lutea</i>
Smartweed	<i>Polygonum</i> spp. ¹
Torpedograss	<i>Panicum repens</i>
Submersed Plants	
Bladderwort	<i>Utricularia</i> spp.
Eurasian watermilfoil	<i>Myriophyllum spicatum</i>
Naiads	<i>Najas</i> spp.

¹ Susceptibility will likely vary between species within this genus. Not all species have been evaluated for susceptibility to **Oasis**.

Weed Control on Shoreline and Riparian Areas Within or Adjacent to Aquatic Sites

Oasis® aquatic herbicide may be used for selective weed control on shoreline and riparian areas that are within or adjacent to aquatic sites. For best control, apply as a preemergence or early postemergence application before weeds reach the maximum sizes listed in **Table 3** and **Table 4**. Postemergence application requires the use of a spray adjuvant such as a nonionic surfactant (NIS) or a methylated seed oil (MSO). Follow rates on the adjuvant label. Generally, nonionic surfactant should be used at a rate of 0.25% volume/volume (v/v) and methylated seed oil at a rate of 1.0% v/v. Apply between 4 and 16 fl ozs/A using the higher rates for difficult-to-control weeds and/or for increased soil residual activity. Sequential applications may be made throughout the growing season at 30-day intervals. **DO NOT** exceed a total of 16 fl ozs/A of **Oasis** per year for foliar applications and applications to dry or dewatered aquatic sites.

Table 3. Broadleaf Weeds Controlled
(4 to 16 fl ozs/A)

Broadleaf Weeds	Maximum Size* (inches)
Amaranth, Palmer	6
Amaranth, Powell	6
Burcucumber	6
Carpetweed	6
Chickweed, common	4
Cocklebur, common	8
Dandelion	6
Galinsoga, hairy	6
Horseweed (Marestail)	6
Jimsonweed	6
Kochia	6
Lambsquarters, common	6
Mallow, common	3
Mallow, Venice	3**
Morningglory spp.	6**
Mustard spp.	6
Nightshade, black	6
Nightshade, Eastern black	6
Nightshade, hairy	6
Pigweed, prostrate	6
Pigweed, redroot	6
Pigweed, smooth	6
Pigweed, tumble	4
Prickly lettuce	4

(continued)

Table 3. Broadleaf Weeds Controlled (continued)
(4 to 16 fl ozs/A)

Broadleaf Weeds	Maximum Size* (inches)
Ragweed, common	6
Ragweed, giant	8
Shepherd's purse	4
Sida, prickly	3
Smartweed, ladythumb	3
Smartweed, Pennsylvania	3
Sunflower, volunteer	8
Sunflower, wild (common)	8
Thistle, Canada	6**
Thistle, Russian	4
Velvetleaf	8
Waterhemp, common	6
Waterhemp, tall	6
White clover	3

* For best control, apply before weeds reach maximum size listed.
** Growth suppression only

Table 4. Grass Weeds Controlled
(4 to 16 fl ozs/A)

Grass Weeds	Maximum Leaf Stage*	Maximum Size* (inches)
Barnyardgrass	4	4
Crabgrass, large	4	3
Crabgrass, smooth	4	3
Cupgrass, woolly	3	3
Dallisgrass**	3	3
Foxtail, giant	4	4
Foxtail, green	3	3
Foxtail, yellow	3	3
Goosegrass	4	3
Johnsongrass, seedling	3	4
Millet, wild proso	3	3
Panicum, fall	3	3
Shattercane	3	4
Signalgrass, broadleaf	3	3
Sprangletop	3	3

* For best control, apply before weeds reach maximum size listed.
** Growth suppression only

Application Information

Mixing Instructions

In-water Application including Submersed or Floating Aquatic Weeds

Oasis® aquatic herbicide can be applied undiluted or diluted with water for in-water applications. To dilute with water, fill spray tank partially with water (e.g. 1/2 full). Start agitation. Shake the **Oasis** container well before using. Add correct quantity of **Oasis**. Continue agitation while filling spray tank to required volume and during application.

Foliar Application including Floating, Emergent, and Shoreline Weeds

Dilute **Oasis** with water to achieve proper coverage of treated plants. To dilute with water, fill spray tank partially with water (e.g. 1/2 full). Start agitation. A surfactant must also be used with all **Oasis** postemergence foliar applications. Based on surfactant label recommendations, add appropriate volume of surfactant when adding **Oasis** to spray tank. Read and follow all use directions and precautions on surfactant label. Shake the **Oasis** container well before using. After adding **Oasis** and surfactant, continue agitation while filling spray tank to required volume and during application.

Exposed Sediment Application for Preemergence Control of Aquatic Weeds

Oasis must be diluted with water for preemergence exposed sediment applications. To dilute with water, fill spray tank partially with water (e.g. 1/2 full). Start agitation. Shake the **Oasis** container well before using. Add correct quantity of **Oasis**. When using surfactant, add appropriate volume of surfactant (based on surfactant label recommendations) when adding **Oasis** to spray tank. Read and follow all use directions and precautions on surfactant label. After adding **Oasis** and surfactant, continue agitation while filling spray tank to required volume and during application.

Application Methods

In-water Application including Submersed or Floating Aquatic Weeds

Oasis can be applied as an in-water application to control weeds such as hydrilla, water hyacinth, and other susceptible aquatic weed species.

Where greater plant selectivity is desired, such as when controlling hydrilla or when targeting more susceptible species, choose an application rate lower in the rate range. BASF Corporation recommends contacting a BASF Aquatic Specialist to determine when to choose application rates lower in the range to meet specific plant management goals.

- **Single In-water Application to Treatment Zone -**

Where single applications to whole ponds, lakes, and reservoirs are desired, under typical treatment conditions, apply **Oasis** at an effective concentration of up to 30 to

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50 ppb. **Applications to areas with functional potable water intakes must not exceed a maximum concentration of 45 ppb.** Choose an application rate to meet the aquatic plant management objectives.

Application rates necessary to obtain these concentrations in treated water are shown following. It may be necessary to retreat the body of water if mature or more tolerant vegetation is present in the target area or heavy rainfall has diluted the treatment concentration. If retreatment is necessary; refer to **Split or Multiple In-water Applications to Treatment Zone** section following.

- **Split or Multiple In-water Applications to Treatment Zone** - Split or multiple applications of **Oasis** may be desirable to ensure efficacy, maintain exposure, and enhance selectivity. Under typical treatment conditions or when targeting the most susceptible species, apply **Oasis** initially at 20 to 50 ppb to the treatment zone and, through use of water analysis, add additional **Oasis** to maintain the concentration to achieve specific plant management objectives. Retreat the water to maintain a sufficient concentration, not to exceed a maximum concentration of 50 ppb for a minimum of 60 days or until satisfactory weed control is achieved. **DO NOT** exceed a cumulative total of 150 ppb per year (0.407 lb ai per acre-foot per year). Refer to **Table 5** to determine the amount of **Oasis** per year for your water-body treatment area. Higher concentrations and longer exposure times may be necessary when targeting less susceptible species, mature plants, and/or under conditions favorable for slower plant growth. For water analysis, use **FasTEST*** or other analytical techniques to determine the actual concentration of **Oasis** in the water over time.

Apply **Oasis® aquatic herbicide** to the treatment area at the appropriate rate to achieve target concentration. Define both size (in acres) and mean water depth (in feet) of the treatment zone before treatment. For each part per billion (ppb) of final concentration of active ingredient in the treatment zone, apply 0.124 fl oz per acre-foot of water.

For example, for a 35 ppb treatment of 5 acres with a mean depth of 5 ft (25 acre-feet):

0.124 fl oz x 35 ppb x 25 acre-feet = 108.5 fl ozs (3.4 quarts or 0.85 gallon) **Oasis** applied

Select the rate needed to treat 1 surface acre of water according to **Table 5**.

Table 5. Target Concentration of Oasis in Water (ppb)

Average Water Depth (feet)	5	10	20	25	30	35	40	50
	Oasis per Surface Acre at Specified Depth fluid ounces (quarts)							
1	0.6 (0.02)	1.2 (0.04)	2.5 (0.08)	3.1 (0.10)	3.7 (0.12)	4.3 (0.14)	5.0 (0.16)	6.2 (0.19)
2	1.2 (0.04)	2.5 (0.08)	5.0 (0.16)	6.2 (0.19)	7.4 (0.23)	8.7 (0.27)	9.9 (0.31)	12.4 (0.39)
3	1.9 (0.06)	3.7 (0.12)	7.4 (0.23)	9.3 (0.29)	11.2 (0.35)	13.0 (0.41)	14.9 (0.47)	18.6 (0.58)
4	2.5 (0.08)	5.0 (0.16)	9.9 (0.31)	12.4 (0.39)	14.9 (0.47)	17.4 (0.54)	19.8 (0.62)	24.8 (0.78)
5	3.1 (0.10)	6.2 (0.19)	12.4 (0.39)	15.5 (0.48)	18.6 (0.58)	21.7 (0.68)	24.8 (0.78)	31.0 (0.97)
6	3.7 (0.12)	7.4 (0.23)	14.9 (0.47)	18.6 (0.58)	22.3 (0.70)	26.0 (0.81)	29.8 (0.93)	37.2 (1.16)
7	4.3 (0.14)	8.7 (0.27)	17.4 (0.54)	21.7 (0.68)	26.0 (0.81)	30.4 (0.95)	34.7 (1.09)	43.4 (1.36)
8	5.0 (0.16)	9.9 (0.31)	19.8 (0.62)	24.8 (0.78)	29.8 (0.93)	34.7 (1.09)	39.7 (1.24)	49.6 (1.55)
9	5.6 (0.17)	11.2 (0.35)	22.3 (0.70)	27.9 (0.87)	33.5 (1.05)	39.1 (1.22)	44.6 (1.40)	55.8 (1.74)
10	6.2 (0.19)	12.4 (0.39)	24.8 (0.78)	31.0 (0.97)	37.2 (1.16)	43.4 (1.36)	49.6 (1.55)	62.0 (1.94)

Treatment of Flowing Water including Nonirrigation Moving Water Canals

In slow-moving bodies of water, **Oasis** can be applied via split or multiple in-water applications or through injection from a metering system to provide a uniform concentration of active ingredient based on the flow pattern. Use of **FasTEST*** is recommended to maintain the desired concentration in the target area over time.

Calculate the amount of **Oasis** to be applied through a metering system to provide desired ppb concentration of active ingredient in treated water as follows:

$$\text{Average flow rate (feet per second)} \times \text{average canal width (ft)} \times \text{average canal depth (ft)} \times 0.9 = \text{CFS (cubic feet per second)}$$

$$\text{CFS} \times 1.98 = \text{acre-feet per day (water movement)}$$

$$\text{Acre-feet per day} \times \text{desired ppb} \times 0.00097 = \text{Oasis (gallons) required per day}$$

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Foliar Application including Floating, Emergent, and Shoreline Weeds

Oasis® aquatic herbicide can be applied as a foliar application to control weeds such as water hyacinth and other susceptible species, including floating, emergent, and shoreline or ditchbank weed species. Conduct applications to maximize spray interception by target weeds while minimizing the amount of overspray that inadvertently enters the water.

For all foliar applications, apply **Oasis** up to a maximum of 16 fl ozs/acre. Use of a surfactant is required for all **Oasis** foliar applications. Use only surfactants approved or appropriate for aquatic use when applying in or near an aquatic site. Refer to the surfactant label for use directions. Apply **Oasis** to actively growing weeds only. **DO NOT** apply to weeds that are not actively growing because of moisture stress or stress from adverse weather conditions.

Foliar Spot Treatment

To prepare the spray solutions, thoroughly mix in water 0.25 to 0.5% **Oasis** plus an adjuvant. A methylated seed oil at 1% by spray volume is the suggested spray adjuvant. When making spot application, spray coverage should be sufficient to moisten the leaves of the target vegetation but not to the point of runoff.

Aerial Foliar Application

Apply **Oasis** in a spray volume of a minimum of 2 gallons per acre (gpa) or more when making a postemergence application by air. Adequate spray volume must be used to provide accurate and uniform distribution of spray particles over the treated area and to avoid drift of spray particles to nontarget areas. Apply with coarse droplet category per S-572 ASABE standard; see NAAA, USDA, or nozzle manufacturer guidelines. Follow guidelines in **Spray Drift Management** and **Aerial Drift Reduction Advisory** sections to minimize potential drift to off-target vegetation. Aircraft should be patterned per Operation Safe/PAASS program for calibration and uniformity to provide sufficient coverage and control.

Boat or Ground Foliar Application

When applying **Oasis** by boat or with ground equipment to emergent or floating-leaved plants or shoreline vegetation, use boom-type, backpack, or hydraulic handgun equipment. Apply **Oasis** in a sufficient spray volume (up to 100 gpa or more) to provide accurate and uniform distribution of spray particles over the treated vegetation while minimizing runoff. Use higher spray volumes for medium-to-high density vegetation. For boom spraying, use coarse or coarser nozzle spray quality per S-572 ASABE standard; see USDA literature or nozzle manufacturer guidelines. Follow nozzle manufacturer's recommendations for nozzle pressure, spacing, and boom height to provide a uniform spray pattern. Follow appropriate spray drift management information where drift potential is a concern.

Exposed Sediment Application for Preemergence and Postemergence Aquatic Weed Control

Oasis may be applied to exposed sediment of dewatered aquatic sites for preemergence and postemergence control of susceptible weed species.

Apply **Oasis** up to a maximum of 16 fl ozs/acre in a total spray volume of 20 to 100 gpa to the target area of exposed sediment using boom-type, backpack, or hydraulic handgun equipment for preemergence weed control. For boom spraying, use coarse or coarser nozzle spray quality per S-572 ASABE standard; see USDA literature or nozzle manufacturer guidelines. Follow nozzle manufacturer's recommendations for nozzle pressure, spacing, and boom height to provide a uniform spray pattern. Follow appropriate spray drift management information where drift potential is a concern. Best treatment timing and rates will be based on various factors including current and historical rainfall, soil type, and timing of reflow, all of which should be discussed with BASF Corporation before treatment.

For postemergence application, use a surfactant according to its label instructions. When present and targeted for foliar application, **DO NOT** apply to target weeds that are not actively growing because of moisture stress or stress from adverse weather conditions.

Refer to **Application to Waters Used for Irrigation** section of this label for irrigation restrictions following exposed sediment applications. Upon inundation, all label restrictions apply to the use of water from these treated areas. Consult BASF Corporation for site-specific recommendations for sampling water upon inundation.

Application to Exposed Sediments of Dewatered Irrigation Canals

Applications to dewatered irrigation canals are only for use by Irrigation Districts in the western U.S. in canals that are seasonally filled and where the Irrigation District is aware of potential downstream use of water and can ensure water is not used for irrigation purposes during the recharge or refill process. It is recommended that the Irrigation District consult BASF Corporation for site-specific recommendations.

Oasis may be applied to exposed sediment of dewatered irrigation canals during the irrigation off-season when the canals are dewatered or drained. Application of **Oasis** to dewatered irrigation canals is only for use by Irrigation Districts, Irrigation Water Suppliers, or those applicators who are licensed or certified as aquatic pest control applicators and are authorized by the Irrigation District.

Applications to dewatered irrigation canals must be conducted a minimum of 14 days before reflooding. The initial flush of water during recharge or refill must not be used for irrigation purposes unless the **Oasis** concentration has been determined by an acceptable method to be 1 ppb or less at the most downstream end of the treated area before use of the water for irrigation purposes. After canals

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have been refilled with continuous flow for a minimum of 24 hours, canal water may then be used for irrigation purposes.

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

Coverage

For postemergence foliar applications, weeds must be thoroughly covered with spray. Dense leaf canopies shelter small weeds and can prevent adequate spray coverage. Apply postemergence foliar applications a minimum of 1 hour before rainfall.

Tank Mixes with Other Aquatic Herbicides

Oasis may be mixed with other herbicides or algaecides registered for aquatic use provided that this label does not prohibit such mixing. When tank mixing, read and follow the labeled precautionary statements, directions for use, weeds controlled, and other restrictions for each tank mix product. **Use in accordance with the most restrictive label limitations and precautions of the products used in the tank mix. DO NOT** exceed any labeled rate or dose. To ensure compatibility, a jar test is recommended before field application of any tank mix combination. Consult BASF Corporation for latest tank mix recommendations.

NOTE: Tank mixing or use of **Oasis** with any other product not specifically and expressly authorized by the label shall be at the exclusive risk of the user, applicator and/or application adviser, to the extent allowed by applicable law.

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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. Plant 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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BASF and the Seller offer this product, and the Buyer and User accept it, subject to the foregoing **Conditions of Sale and Warranty** which may be varied only by agreement in writing signed by a duly authorized representative of BASF.

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