BASF

We create chemistry

Group 4 Herbicide

SPECIMEN

Engenia™

Herbicide

For weed control in asparagus; conservation reserve programs (CRP); corn; cotton; fallow cropland; farmstead turf (noncropland) and sod farms; grass grown for seed; pasture, hay, rangeland, and farmstead (noncropland); proso millet; small grain; sorghum; soybean; and sugarcane

Active Ingredient*:	
N,N-Bis-(3-aminopropyl)methylamine salt of 3,6-dichloro-o-anisic acid	60.8%
Other Ingredients:	39.2%
Total:	100.0%

*Contains 48.38% dicamba (5 pounds acid equivalent per gallon or 600 grams per liter)

EPA Reg. No. 7969-345 **EPA Est. No.**

KEEP OUT OF REACH OF CHILDREN

CAUTION/PRECAUCION

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 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 to an unconscious person.
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.
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 inhaled. Avoid breathing vapor or spray mist. Remove and wash contaminated clothing before reuse. Wash thoroughly with soap and water after and before eating, drinking, chewing gum, using tobacco, or using the toilet.

Prolonged or frequently repeated skin contact may cause allergic reactions in some individuals.

Personal Protective Equipment (PPE)

All mixers, loaders, applicators, and other handlers must wear:

- Long-sleeved shirt and long pants
- Shoes plus socks
- Chemical-resistant gloves such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber (includes natural rubber blends and laminates) ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils, or viton ≥ 14 mils
- A NIOSH-approved dust/mist filtering respirator with any R, P, or HE filter or a NIOSH-approved number prefix TC-84A.

See **Engineering Controls** for additional requirements. 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

When handlers use closed systems or enclosed cabs 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

DO NOT apply directly to water, or to areas where surface water is present, or to intertidal areas below the mean high water mark. **DO NOT** contaminate water when disposing of equipment washwater or rinsate. Apply this product only as directed on the label.

This chemical is known to leach through soil into groundwater under certain conditions as a result of agricultural use. Use of this chemical in areas where soils are permeable, particularly where the water table is shallow, may result in groundwater contamination.

Ground and Surface Water Protection

Point-source Contamination

To prevent point-source contamination, **DO NOT** mix or load this pesticide product within 50 feet of wells (including abandoned wells and drainage wells), sinkholes, perennial or intermittent streams and rivers, and natural or impounded lakes and reservoirs. **DO NOT** apply pesticide product within 50 feet of wells. This setback does not apply to properly capped or plugged abandoned wells and does not apply to impervious pad or properly diked mixing/loading areas as described below.

Mixing, loading, rinsing, or washing operations performed within 50 feet of a well are allowed only when conducted on an impervious pad constructed to withstand the weight of the heaviest load that may be on or move across the pad. The pad must be self-contained to prevent surface water flow over or from the pad. The pad capacity must be maintained at 110% that of the largest pesticide container or application equipment used on the pad and have

sufficient capacity to contain all product spills, equipment or container leaks, equipment washwater, and rainwater that may fall on the pad. The containment capacity does not apply to vehicles delivering pesticide shipments to the mixing/loading site. States may have in effect additional requirements regarding wellhead setbacks and operational containment.

Care must be taken when using this product to prevent:
- Back-siphoning into wells
- Spills
- Improper disposal of excess pesticide, spray mixtures, or rinsate

Check valves or antisiphoning devices must be used on all mixing equipment.

Movement by Surface Runoff or Through Soil

DO NOT apply under conditions which favor runoff. **DO NOT** apply to impervious substrates such as paved or highly compacted surfaces in areas with high potential for groundwater contamination. Groundwater contamination may occur in areas where soils are permeable or coarse and groundwater is near the surface. **DO NOT** apply to soils classified as sand with less than 3% organic matter and where groundwater depth is shallow. To minimize the possibility of groundwater contamination, carefully follow the specified rates as affected by soil type in the **Crop-specific Information** section of this label.

Movement by Water Erosion of Treated Soil

DO NOT apply this product through any type of irrigation system including sprinkler, drip, flood, or furrow irrigation. Ensure treated areas have received at least 1/2-inch rainfall (or irrigation) before using tailwater for subsequent irrigation of other fields.

Endangered Species

The use of any pesticide in a manner that may kill or otherwise harm an endangered species or adversely modify their habitat is a violation of federal law.

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 user's possession during 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.

Observe all precautions and limitations in this label and the labels of products used in combination with this product. Keep containers closed to avoid spills and contamination.

Unless otherwise directed in supplemental labeling, all applicable directions, restrictions, precautions, and **Conditions of Sale and Warranty** are to be followed.

AGRICULTURAL USE REQUIREMENTS

Use this product only in accordance with its labeling and with the Worker Protection Standard, 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)** and restricted-entry intervals. The requirements in this box only apply to uses of this product that are covered by the WPS.

DO NOT enter or allow worker entry into treated areas during the restricted-entry interval (REI) of **24 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 worn over short-sleeved shirt and short pants
- Chemical-resistant footwear plus socks
- Chemical-resistant gloves such as barrier laminate, butyl rubber ≥ 14 mils, nitrile rubber ≥ 14 mils, neoprene rubber ≥ 14 mils, natural rubber (includes natural rubber blends and laminates) ≥ 14 mils, polyethylene, polyvinyl chloride (PVC) ≥ 14 mils, or viton ≥ 14 mils
- Chemical-resistant headgear for overhead exposure
- Protective eyewear

STORAGE AND DISPOSAL

DO NOT contaminate water, food, or feed by storage or disposal. Open dumping is prohibited.

Pesticide Storage

Store in original container in a well-ventilated area separately from fertilizer, feed, and foodstuffs. Avoid cross-contamination with other pesticides. **Engenia™ herbicide** freezes around 15° F and is stable under conditions of freezing and thawing. Product that has been frozen should be thawed and recirculated prior to use.

Pesticide Disposal

Wastes resulting from this product may be disposed of on-site or at an approved waste disposal facility. Pesticide, spray mixture, or rinsate that cannot be used according to label instructions must be disposed of according to federal, state or local procedures under **Subtitle C** of the **Resource Conservation and Recovery Act**. Improper disposal of excess pesticide, spray mix, or rinsate is a violation of federal law.

(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 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.

(continued)

STORAGE AND DISPOSAL *(continued)*

Container Handling *(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 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 spill of 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 take if 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

Engenia™ herbicide is a water-soluble herbicide that provides postemergence and moderate rate-dependent residual control of many annual broadleaf weeds. **Engenia** is also active on many biennial and perennial broadleaf weeds as well as woody brush and vines (refer to **Table 1** for weeds controlled or suppressed).

Engenia can be used in specific field and row crops, fallow and postharvest croplands, and sod farms. **Engenia** does not control grass weeds and must be used sequentially or tank mixed with a grass herbicide for a complete weed control program. Refer to **Crop-specific Information** section for recommendations on herbicide tank mixes or sequential programs.

Table 1. Weeds Controlled or Suppressed

Engenia™ herbicide will control or suppress the following weeds when used at rates described in **Table 2**.

Common Name	Scientific Name
Annuals	
Alkanet	*Lithospermum arvense*
Amaranth, Palmer	*Amaranthus palmeri*
Amaranth, Powell	*Amaranthus powellii*
Amaranth, spiny	*Amaranthus spinosus*
Aster, slender	*Aster subulatus*
Bedstraw, catchweed	*Galium aparine*
Beggarweed, Florida	*Desmodium tortuosum*
Broomweed, common	*Gutierrezia dracunculoides*
Buckwheat, tartary	*Fagopyrum tataricum*
Buckwheat, wild	*Polygonum convolvulus*
Buffalobur	*Solanum rostratum*
Burclover, California	*Medicago polymorpha*
Burcucumber	*Sicyos angulatus*
Buttercup, corn	*Ranunculus arvensis*
Buttercup, creeping	*Ranunculus repens*
Buttercup, roughseed	*Ranunculus muricatus*
Buttercup, western field	*Ranunculus occidentalis*
Carpetweed	*Mollugo verticillata*
Catchfly, nightflowering	*Silene noctiflorum*
Chamomile, corn	*Anthemis arvensis*
Chervil, bur	*Anthriscus caucalis*
Chickweed, common	*Stellaria media*
Clover	*Trifolium* spp.
Cockle, corn	*Agrostemma githago*
Cockle, cow	*Vaccaria pyramidata*
Cocklebur, common	*Xanthium strumarium*
Copperleaf, hophornbeam	*Acalypha ostryifolia*
Cornflower	*Centaurea cyanus*
Croton, tropic	*Croton glandulosus*
Croton, woolly	*Croton capitatus*
Daisy, English	*Bellis perennis*
Dragonhead, American	*Dracocephalum parviflorum*
Eveningprimrose, cutleaf	*Oenothera laciniata*
Falseflax, smallseed	*Camelina microcarpa*
Fleabane, hairy	*Conyza bonariensis*
Flixweed	*Descurainia sophia*
Fumitory	*Fumaria officinalis*
Goosefoot, nettleleaf	*Chenopodium murale*
Hempnettle	*Galeopsis tetrahit*
Henbit	*Lamium amplexicaule*
Horseweed (Marestail)	*Conyza canadensis*
Jacob's-ladder	*Polemonium caeruleum*
Jimsonweed	*Datura stramonium*
Knawel (German moss)	*Scleranthus annuus*
Knotweed, prostrate	*Polygonum aviculare*

(continued)

Table 1. Weeds Controlled or Suppressed *(continued)*

Common Name	Scientific Name
Annuals *(continued)*	
Kochia[3]	*Kochia scoparia*
Ladysthumb	*Polygonum persicaria*
Lambsquarters, common	*Chenopodium album*
Lettuce, miner's	*Claytonia perfoliata*
Lettuce, prickly	*Lactuca serriola*
Mallow, common	*Malva neglecta*
Mallow, Venice	*Hibiscus trionum*
Mayweed	*Anthemis cotula*
Morningglory, ivyleaf	*Ipomoea hederacea*
Morningglory, tall	*Ipomoea purpurea*
Mustard, black	*Brassica nigra*
Mustard, blue	*Chorispora tenella*
Mustard, tansy	*Descurainia pinnata*
Mustard, treacle	*Erysimum repandum*
Mustard, tumble	*Sisymbrium altissimum*
Mustard, wild	*Sinapis arvensis*
Mustard, yellowtop	*Sinapis* spp.
Nightshade, black	*Solanum nigrum*
Nightshade, cutleaf	*Solanum triflorum*
Pennycress, field	*Thlaspi arvense*
Pepperweed, Virginia	*Lepidium virginicum*
Pigweed, prostrate	*Amaranthus blitoides*
Pigweed, redroot (rough)	*Amaranthus retroflexus*
Pigweed, smooth	*Amaranthus hybridus*
Pigweed, tumble	*Amaranthus albus*
Pineappleweed	*Matricaria matricarioides*
Poorjoe	*Diodia teres*
Poppy, red horn	*Glaucium corniculatum*
Puncturevine	*Tribulus terrestris*
Purslane, common	*Portulaca oleracea*
Pusley, Florida	*Richardia scabra*
Radish, wild	*Raphanus raphanistrum*
Ragweed, common	*Ambrosia artemisiifolia*
Ragweed, giant	*Ambrosia trifida*
Ragweed, lanceleaf	*Ambrosia bidentata*
Rocket, London	*Sisymbrium irio*
Rocket, yellow	*Barbarea vulgaris*
Rubberweed, bitter	*Hymenoxys odorata*
Salsify	*Tragopogon porrifolius*
Senna, coffee	*Senna occidentalis*
Sesbania, hemp	*Sesbania exaltata*
Shepherd's purse	*Capsella bursa-pastoris*
Sicklepod	*Cassia obtusifolia*
Sida, prickly (Teaweed)	*Sida spinosa*
Smartweed, green	*Polygonum scabrum*
Smartweed, Pennsylvania	*Polygonum pensylvanicum*
Sneezeweed, bitter	*Helenium amarum*

(continued)

Table 1. Weeds Controlled or Suppressed *(continued)*

Common Name	Scientific Name
Annuals *(continued)*	
Sowthistle, annual	*Sonchus oleraceus*
Sowthistle, spiny	*Sonchus asper*
Spanish needles	*Bidens bipinnata*
Spikeweed, common	*Hemizonia pungens*
Spurge, prostrate	*Chamaesyce humistrata*
Spurry, corn	*Spergula arvensis*
Starbur, bristly	*Acanthospermum hispidum*
Starwort, little	*Stellaria graminea*
Sumpweed, rough	*Iva ciliata*
Sunflower, common (wild)	*Helianthus annuus*
Thistle, Russian	*Salsola iberica*
Velvetleaf	*Abutilon theophrasti*
Waterhemp	*Amaranthus tuberculatus*
Waterprimrose, winged	*Ludwigia decurrens*
Wormwood	*Artemisia annua*
Biennials	
Burdock, common	*Arctium minus*
Carrot, wild	*Daucus carota*
Cockle, white	*Melandrium album*
Eveningprimrose, common	*Oenothera biennis*
Geranium, Carolina	*Geranium carolinianum*
Gromwell	*Lithospermum* spp.
Knapweed, diffuse	*Centaurea diffusa*
Knapweed, spotted	*Centaurea maculosa*
Mallow, dwarf	*Malva borealis*
Plantain, bracted	*Plantago aristata*
Ragwort, tansy	*Senecio jacobaea*
Starthistle, yellow	*Centaurea solstitialis*
Sweetclover	*Melilotus* spp.
Teasel	*Dipsacus sativus*
Thistle, bull	*Cirsium vulgare*
Thistle, musk	*Carduus nutans*
Thistle, plumeless	*Carduus acanthoides*
Thistle, variegated (milk)	*Silybum marianum*
Perennials[1]	
Alfalfa	*Medicago sativa*
Apple, tropical soda	*Solanum viarum*
Artichoke, Jerusalem	*Helianthus tuberosus*
Aster, spiny	*Aster spinosus*
Aster, whiteheath	*Aster pilosus*
Bedstraw, smooth	*Gallium mollugo*
Bindweed, field	*Convolvulus arvensis*
Bindweed, hedge	*Calystegia sepium*
Blueweed, Texas	*Helianthus ciliaris*
Bursage, woollyleaf	*Ambrosia grayi*
Buttercup, tall	*Ranunculus acris*
Campion, bladder	*Silene vulgaris*

(continued)

Table 1. Weeds Controlled or Suppressed *(continued)*

Common Name	Scientific Name
Perennials[1] *(continued)*	
Chickweed, field	*Cerastium arvense*
Chickweed, mouseear	*Cerastium vulgatum*
Chicory	*Cichorium intybus*
Clover, hop	*Trifolium aureum*
Dandelion, common	*Taraxacum officinale*
Dock, broadleaf (Bitterdock)	*Rumex obtusifolius*
Dock, curly	*Rumex crispus*
Dogbane, hemp	*Apocynum cannabinum*
Dogfennel (Cypressweed)	*Eupatorium capillifolium*
Fern, bracken	*Pteridium aquilinum*
Garlic, wild	*Allium vineale*
Goldenrod, Canada	*Solidago canadensis*
Goldenrod, Missouri	*Solidago missouriensis*
Goldenweed, common	*Isocoma coronopifolia*
Hawkweed	*Hieracium* spp.
Henbane, black	*Hyoscyamus niger*
Horsenettle, Carolina	*Solanum carolinense*
Ironweed	*Vernonia* spp.
Knapweed, black	*Centaurea nigra*
Knapweed, Russian	*Centaurea repens*
Lespedeza, sericea	*Lespedeza cuneata*
Milkweed, climbing	*Sarcostemma cyanchoides*
Milkweed, common	*Asclepias syriaca*
Milkweed, honeyvine	*Ampelamus albidus*
Milkweed, western whorled	*Asclepias subverticillata*
Nettle, stinging	*Urtica dioica*
Nightshade, silverleaf	*Solanum elaeagnifolium*
Onion, wild	*Allium canadense*
Plantain, broadleaf	*Plantago major*
Plantain, buckhorn	*Plantago lanceolata*
Pokeweed	*Phytolacca americana*
Ragweed, western	*Ambrosia psilostachya*
Redvine	*Brunnichia ovata*
Smartweed, swamp	*Polygonum coccineum*
Snakeweed, broom	*Gutierrezia sarothrae*
Sorrel, red (Sheep sorrel)	*Rumex acetosella*
Sowthistle, perennial	*Sonchus arvensis*
Spurge, leafy	*Euphorbia esula*
Sundrop	*Oenothera perennis*
Thistle, Canada	*Cirsium arvense*
Thistle, Scotch	*Onopordum acanthium*
Toadflax, Dalmatian	*Linaria genistifolia*
Trumpetcreeper	*Campsis radicans*
Vetch	*Vicia* spp.
Waterhemlock, spotted	*Cicuta maculata*
Waterprimrose, creeping	*Ludwigia peploides*
Woodsorrel, creeping	*Oxalis corniculata*

(continued)

Table 1. Weeds Controlled or Suppressed *(continued)*

Common Name	Scientific Name
Perennials[1] *(continued)*	
Woodsorrel, yellow	*Oxalis stricta*
Wormwood, Louisiana	*Artemisia ludoviciana*
Yankeeweed	*Eupatorium compositifolium*
Yarrow, common	*Achillea millefolium*
Woody Brush and Vines[1, 2]	
Alder	*Alnus* spp.
Ash	*Fraxinus* spp.
Basswood	*Tilia americana*
Beech	*Fagus* spp.
Birch	*Betula* spp.
Cherry	*Prunus* spp.
Chinquapin	*Chrysolepis chrysophylla*
Cottonwood	*Populus deltoides*
Cucumbertree	*Magnolia acuminata*
Elm	*Ulmus* spp.
Grape	*Vitus* spp.
Hemlock	*Tsuga* spp.
Hickory	*Carya* spp.
Honeylocust	*Gleditsia triacanthos*
Honeysuckle	*Lonicera* spp.
Hornbeam	*Carpinus* spp.
Huckleberry	*Vaccinium arboreum*
Huisache	*Acacia farnesiana*
Ivy, poison	*Rhus radicans*
Kudzu	*Pueraria lobata*
Locust, black	*Robinia pseudoacacia*
Maple	*Acer* spp.
Mesquite	*Prosopis ruscifolia*
Oak	*Quercus* spp.
Oak, poison	*Rhus toxicodendron*
Olive, Russian	*Elaeagnus angustifolia*
Persimmon, eastern	*Diospyros virginiana*
Pine	*Pinus* spp.
Poplar	*Populus* spp.
Rabbitbrush	*Chrysothamnus pulchellus*
Rose, multiflora	*Rosa multiflorum*
Sassafras	*Sassafras albidum*
Serviceberry	*Amelanchier sanguinea*
Spicebush	*Lindera benzoin*
Spruce	*Picea* spp.
Sumac	*Rhus* spp.
Sycamore	*Platanus occidentalis*
Tarbush	*Flourensia cernua*
Willow	*Salix* spp.
Witchhazel	*Hamamelis macrophylla*

[1] Suppression only.
[2] Not for use in California.
[3] Except dicamba resistant.

Product Stewardship Practices

- Apply **Engenia™ herbicide** to weeds 4 inches or less in size for best performance.
- Apply **Engenia** at the labeled rate.
- Use **Engenia** as part of a herbicide program that includes the use of residual herbicides and herbicides with alternate sites of action to reduce resistance selection pressure.
- Select nozzles that produce **extremely coarse to ultra-coarse** spray droplets.
- Maintain boom height 24 inches or less from target.
- Identify areas of sensitive nontarget plants and maintain proper setback distance from these areas.
- Thoroughly clean spray equipment after application.

Mode of Action

Dicamba, the active ingredient in **Engenia**, is a **Group 4** (WSSA) herbicide. Herbicides in this group mimic auxin (a plant hormone) resulting in a hormone imbalance in susceptible plants that interferes with normal plant growth (e.g. cell division, cell enlargement, and protein synthesis). **Engenia** is readily absorbed by leaves, roots, and shoots; translocates throughout the plant; and accumulates in areas of active growth to provide postemergence control of emerged weeds as well as moderate residual control of germinating weed seeds.

Any weed population may contain plants naturally resistant to **Group 4** herbicides. Weeds resistant to **Group 4** herbicides may be effectively managed using herbicide(s) from a different group and/or by using cultural or mechanical practices. Report any incidence of non-performance of this product against a particular weed species at www.Non-Performance.BASF.US. Consult your local BASF representative, state cooperative extension service, professional consultants, or other qualified authority to determine appropriate actions if you suspect resistant weeds. Additional information about weeds which are known to be resistant to dicamba can be found at www.Resistance-Information.BASF.US.

Resistance Management

While weed resistance to **Group 4** herbicides is infrequent, populations of resistant biotypes are known to exist. Resistance management should be part of a diversified weed control strategy that integrates multiple options including chemical, cultural, and mechanical (tillage) control tactics. Cultural control tactics include crop rotation, proper fertilizer placement, optimum seeding rate/row spacing, and timely tillage.

To aid in the prevention of developing weeds resistant to this product, the following steps should be followed where practical:

- Start clean with tillage or an effective burndown herbicide program.
- **DO NOT** rely on a single herbicide site of action for weed control during the growing season.

- Scout fields before application to ensure herbicides and rates will be appropriate for the weed species and weed sizes present.
- Apply full rates of **Engenia™ herbicide** for the most difficult-to-control weed in the field at the specified time (correct weed size) to minimize weed escapes.
- Use of preemergence herbicides that provide soil residual control of broadleaf and grass weeds is recommended to reduce early season weed competition and allow for more timely in-crop postemergence herbicide applications.
- Avoid application of herbicides with the same site of action more than twice a season.
- Scout fields after application to detect weed escapes or shifts in weed species.
- Report any incidence of non-performance of this product against a particular weed species to your BASF retailer, representative or online at www.Non-Performance.BASF.US.
- If resistance is suspected, treat weed escapes with a herbicide having a mode of action other than **Group 4** and/or use non-chemical methods to remove escapes, as is practical, with the goal of preventing further seed production.
- For more information about weeds that are known to be resistant to dicamba go to www.Resistance-Information.BASF.US.

Additionally, users should follow as many of the following herbicide resistance management practices as is practical:

- Use a broad spectrum soil-applied herbicide with other modes of action as a foundation in a weed control program.
- Utilize sequential applications of herbicides with alternative modes of action.
- Rotate the use of this product with non-**Group 4** herbicides.
- Avoid making more than two applications of **Engenia** and any other **Group 4** herbicides within a single growing season unless mixed with another mechanism of action with an overlapping spectrum for the difficult-to-control weeds.
- Incorporate non-chemical weed control practices, such as mechanical cultivation, crop rotation, cover crops and weed-free crop seeds, as part of an integrated weed control program.
- Thoroughly clean plant residues from equipment before leaving fields suspected to contain resistant weeds.
- Manage weeds in and around fields during and after harvest to reduce weed seed production.
- Contact the local agricultural extension service, BASF representative, ag retailer or crop consultant for further guidance on weed control practices as needed.

Crop Tolerance

Crops growing under normal environmental conditions are tolerant to **Engenia** when applied according to label directions. Crop injury may occur under stressful growing conditions (e.g. low soil fertility, seedling disease, extreme hot or cold weather, excessive moisture, high soil pH, high soil salt concentration, drought).

Application Instructions

Engenia can be applied to actively growing weeds as a band, broadcast, or spot spray application for postemergence control of emerged weeds as well as moderate residual control of germinating weed seeds. Apply **Engenia** by air or ground depending on crop-specific use.

Make postemergence applications of **Engenia** when broadleaf weeds are small and actively growing. An adjuvant is recommended with **Engenia** for best postemergence activity; refer to **Adjuvants** section and crop-specific information sections for details. Postemergence activity may be slowed or reduced under cloudy and/or foggy or cooler weather conditions, or when weeds are growing under drought or other stress conditions. When targeting dense weed populations and/or larger broadleaf weeds, use higher spray volumes and a higher application rate within an application rate range.

Cultivation should be delayed until 7 days after applying **Engenia** or a reduction in weed control may occur.

Use extreme care when applying **Engenia** to prevent injury to desirable plants. **Engenia** may cause injury to desirable sensitive plants (particularly beans, cotton, fruit trees, grapes, ornamentals, peas, potato, soybean, sunflower, tobacco, tomato, and other broadleaf plants) when contacting their roots, stems, or foliage. These plants are most sensitive to **Engenia** during periods of rapid vegetative growth or flowering. Refer to **Application Methods and Equipment** section.

Application Rates

Always read and follow crop-specific use directions.

Table 2. Application Rate to Control or Suppress Target Weed by Weed Type and Growth Stage

Weed Type and Growth Stage	Rate/Acre[2,5] (fl ozs)
Annual	
Small, actively growing[1] (less than 4-inches tall)	3.2 to 12.8
Small, actively growing (less than 4-inches tall) plus moderate residual control	12.8
Biennial	
Rosette diameter 1 to 3 inches[1]	6.4 to 12.8
Rosette diameter more than 3 inches	12.8
Perennial[3,4]	
Top growth suppression	6.4 to 12.8
Top growth control and root suppression	12.8
Woody Brush and Vines[4]	
Top growth suppression	12.8

[1] Although rates below 12.8 fl ozs/A may provide adequate control of annual and biennial weeds, for optimum performance use listed rates or lower rates tank mixed with other herbicides that are effective on the same species and biotype.
[2] Use the higher rate within listed ranges when treating weeds resistant to other sites of action, dense vegetative growth, or weeds with a well-established root system. The higher rates also provide moderate residual annual weed control.
[3] Refer to **Table 1** for use on perennials in California.
[4] **Engenia™ herbicide** will suppress the top growth of herbaceous perennial and woody brush and vines and can be combined with other herbicides to improve control. Not for use in California.
[5] **DO NOT** broadcast-apply more than 12.8 fl ozs/A per application. Retreatment or tank mixes may be necessary for best control of some weeds. However, sequential applications must not exceed a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per year.

Application Methods and Equipment

Engenia may be applied by air and/or ground depending on use. Thorough spray coverage is important for best broadleaf weed control and can be improved with proper adjuvant, nozzle, and spray volume selection.

Calibrate application equipment for accurate target spray volume and application rate to ensure uniform distribution of spray and to avoid spray drift to nontarget areas. Adjust equipment to maintain continuous agitation during spraying with good mechanical or bypass agitation. Avoid overlaps that will increase rates above the labeled use rates.

Engenia may be applied using water; consult crop-specific information sections of this label for other spray carrier options.

Aerial Application

Use 1 to 10 gallons of water per acre (2 to 20 gallons diluted spray per treated acre for preharvest uses). Use the higher spray volume when treating dense or tall vegetation. **DO NOT** apply when conditions favor drift from target area.

Ground Application

Banding Applications

When applying **Engenia** by banding, use the following formula to calculate the amount of herbicide and water volume needed:

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast rate per acre} = \text{Banding herbicide rate per acre}$$

$$\frac{\text{Bandwidth in inches}}{\text{Row width in inches}} \times \text{Broadcast volume per acre} = \text{Banding water volume per acre}$$

Broadcast Applications

Unless noted in the crop-specific information section, use a spray volume of 5 or more gallons of water per treated acre. Thorough coverage of existing vegetation is essential for postemergence applications; higher spray volumes may be necessary for optimum performance.

Wiper Applications

Engenia may be applied through wiper application equipment to control or suppress actively growing broadleaf weeds, brush, and vines. Use a 50% solution containing 1 part **Engenia** to 1 part water.

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** [0.5 lb dicamba acid equivalent (ae) per acre] per application.
- **DO NOT** contact desirable vegetation with herbicide solution. Wiper application may be made to crops (including pastures) and noncropland areas described in this label.
  EXCEPTION: DO NOT use wiper application on non-dicamba-tolerant cotton or soybean.

Spray Drift Management

Avoiding spray drift at the application site is the responsibility of the applicator. The spray system and weather-related factors determine the potential for spray drift. The applicator is responsible for considering these factors when making application decisions to avoid spray drift onto nontarget areas.

Applicators must follow application requirements to avoid spray drift hazards, including those found in this labeling and applicable state and local regulations and ordinances. Where states have more stringent regulations, they must be observed.

All application equipment must be properly maintained and calibrated using appropriate carriers.

The applicator should be familiar with all factors that affect spray drift. The information covered in the following spray drift reduction review must be considered before application.

Controlling Droplet Size

See crop-specific information sections for specific application requirements. The most effective way to reduce drift potential is to use nozzles that produce large spray droplets. However, 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**).

- **Nozzle Type** - Use nozzles designed to deliver extremely coarse to ultra coarse spray droplets. Spray droplets (volume median diameter of 450 microns or more) as defined by ASAE standard S-572.1, and as shown in the nozzle manufacturer's catalog.
- **Volume** - Use high flow rate (large orifice) nozzles to apply the highest practical spray volume. Nozzles with higher flow rates generally 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 (large orifice) nozzles instead of increasing pressure. Ensure sprayer rate controller hardware (if so equipped) does not allow pressure increases above the desired range.
- **Temperature and Humidity** - Low humidity and high temperatures increase the evaporation of water from spray, reducing droplet size and increasing potential for spray drift. Avoid spraying during conditions of low humidity and high temperatures. Configure equipment to produce larger droplets to compensate for evaporation when applying in hot and dry conditions. Larger droplets have a lower surface-to-volume ratio and are impacted less by temperature and humidity.

Temperature Inversions

DO NOT make applications of **Engenia™ herbicide** when temperature inversions exist at the field level. Temperature inversions increase drift potential because fine droplets may remain suspended in the air longer after application. Suspended droplets can move in unpredictable directions because of 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. Inversions begin to form as the sun sets and often continue into the morning before surface warming. Their presence can be indicated by ground fog, smoke not rising, dust hanging over a road, or presence of dew or frost. Smoke that layers and moves laterally (under low wind conditions) indicates an inversion, while smoke that moves upward and rapidly dissipates indicates good vertical air mixing. Inversion conditions typically dissipate with increased winds (above 3 MPH) or when surface air begins to warm (3° F from morning low).

Sensitive Areas

Engenia should 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 sensitive crop plants) is minimal (e.g. when the wind is blowing away from sensitive areas). Applicators should survey the surrounding area and consult sensitive crop registries, if available, before making an application of **Engenia**.

Setback Distance to Sensitive Areas

Avoid potential adverse effects to nontarget areas by maintaining a setback between the application area and the closest downwind edge of sensitive terrestrial habitats (such as forested areas, grasslands, hedgerows, riparian areas, shelter belts, shrub lands, and woodlots) and sensitive crop plants.

Wind Speed

Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect spray drift. Measure wind speed at the boom height. **DO NOT** apply **Engenia** when wind speed exceeds 15 miles per hour. Application is permitted at wind speeds less than 3 mph only if steps have been taken to confirm that a temperature inversion is not present at field level (see **Temperature Inversions** section).

Aerial Application Spray Drift Management

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

- **Nozzle Type** - Use a nozzle type designed for aerial 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 lowest drift.
- **Nozzle Orientation and Location** - Nozzles must always point backward parallel with the airstream and never point downward more than 45 degrees. Significant deflection from horizontal will reduce droplet size and increase drift potential. The distance of the outermost nozzles on the boom must not exceed 75% of the length of the wingspan or 90% of rotor-blade diameter.
- **Number of Nozzles** - Use the minimum number of nozzles that provide uniform coverage.

DO NOT use aerial equipment if spray droplets can be moved by wind into areas where sensitive crops are growing or if temperature inversions exist.

Ground Application Spray Drift Management

- **Nozzle Type** - Correct nozzle selection is one of the most important parameters in drift reduction. Use nozzles that minimize the production of fine spray droplets less than 150 microns. Apply **Engenia** using nozzles that deliver **extremely coarse to ultra-coarse** spray droplets (volume median diameter of 450 microns or more) as defined by ASAE standard S-572.1, and as shown in the nozzle manufacturer's catalog. Select nozzles that deliver a minimum flow rate of 0.3 gallons per minute at a pressure of 40 PSI (see nozzle manufacturer's catalog). Venturi-type nozzles are particularly suited to deliver droplet spectrums with these parameters. Examples of nozzles designed to produce **extremely coarse to ultra-coarse** spray droplets include, but are not limited to, **Turbo TeeJet® Induction**, **Greenleaf TurboDrop® XL - D version**, and **Hypro® Ultra Lo-Drift™** nozzles. Selection of nozzles that deliver large droplets may require increased spray

volume per acre [gallons per acre (GPA)] to maintain coverage of target vegetation.

- **Boom Height** - Boom height should not be more than 24 inches above the weed target. Decreasing the boom height reduces exposure of droplets to environmental conditions like evaporation and wind. Automated boom height controllers are recommended with large booms to better maintain optimum nozzle-to-target height.
- **Hooded Spray Booms** - Hooded spray booms are another tool that can be used to minimize spray drift potential. **Engenia™ herbicide** may be applied using a hooded spray boom; however, applications still must adhere to other ground application requirements in this label.
- **Equipment Ground Speed** - Select a ground speed under 15 MPH that will deliver the desired spray volume while maintaining the desired spray pressure. Slower speeds generally result in better spray coverage and deposition on the target area.

Cleaning Spray Equipment

Severe crop injury may occur if any **Engenia** remains in the spray equipment following application and is subsequently applied to sensitive crops. After using **Engenia**, clean all mixing and spray equipment (including tanks, pumps, lines, filters, screens, and nozzles) with a strong detergent based sprayer cleaner. Dispose of rinsate in compliance with local, state, and federal guidelines.

1. After spraying, drain the sprayer (including boom and lines). Avoid allowing the spray solution to remain in the spray boom lines overnight or for extended periods of time.
2. Flush tank, hoses, boom, and nozzles with clean water. Open boom ends and flush if so equipped.
3. Inspect and clean all strainers, screens, and filters.
4. Use commercial sprayer cleaner containing strong detergents according to the manufacturer's directions.
5. Wash all parts of the tank, including the inside top surface. Start agitation in the sprayer and thoroughly recirculate the cleaning solution for at least 15 minutes. All visible deposits must be removed from the spraying system.
6. Flush hoses, spray lines, and nozzles with the cleaning solution for at least 1 minute. Remove nozzles, screens, and strainers, and clean separately in the cleaning solution after completing the above procedure.
7. Drain pump, filter, and lines.
8. Rinse the complete spraying system with clean water.
9. Clean and rinse the exterior of the sprayer.
10. Appropriately dispose of all rinsate in compliance with local, state, and federal requirements.

Adjuvants

See crop-specific information sections for specific application requirements. To improve postemergence weed control with **Engenia**, a Chemical Producers and Distributors Association (CPDA) certified adjuvant may be used. Some adjuvants have the potential to cause crop injury under certain conditions, at certain growth stages, and/or under other circumstances. Read all labels for products used in the tank mixture before use to determine the potential for crop injury.

BASF recommends the use of quality adjuvants with **Engenia** such as **Astonish™**, **Class Act® Ridion**, **Grounded®**, **Iconic®**, **Jackhammer™ Elite**, **R-11®**, **Strike Force®**, and **Verifact**.

Surfactants and Spreaders

Nonionic Surfactants/Spreaders (NIS)

Use an agriculturally approved nonionic surfactant (containing at least 80% active ingredient) at 1 to 2 pints/100 gallons [0.12 to 0.25% volume/volume (v/v)]. Use the highest rate of NIS when using the lower rate ranges of a tank mix or when treating more mature and difficult-to-control weeds or dense vegetative growth.

OR

Oil Concentrate Surfactants (COC, HSOC, MSO)*

When specifically allowed in crop specific information sections of this label, oil concentrate may be used at 2 to 4 quarts/100 gallons (0.5% to 1.0% v/v), but at least 1 pint/A.

Crop oil concentrate must contain either a petroleum-oil or vegetable-oil base and must:

- Be nonphytotoxic
- Contain only EPA-exempt ingredients
- Provide good mixing quality in the jar test
- Be successful in local experience

Petroleum-oil and vegetable-oil concentrates should contain emulsifiers to provide good mixing quality. Highly refined vegetable oils have proven more satisfactory than unrefined vegetable oils.

* COC - crop oil concentrate
HSOC - high surfactant oil concentrate
MSO - methylated seed oil

Water Conditioners and Nitrogen Additives

Hard water does not usually affect the activity of **Engenia**; however, other tank mix components may be adversely affected (e.g. glyphosate). Use of a conditioning agent should be considered when hard water (i.e. total calcium, magnesium, and iron content above 500 ppm) is used as a spray carrier. A neutral buffering agent may be warranted if the water source or tank mix components will create an acidic spray solution less than pH 5.

Deposition Aids

Consider using a CPDA-approved deposition aid when spraying **Engenia™ herbicide** to further reduce fine droplets. Not all deposition aids are compatible with every nozzle type and pesticide/adjuvant combination. Check with the additive manufacturer to ensure the deposition aid will work properly with the spray nozzle, spray pressure, and your specific spray solution. Use of a deposition aid does not replace the need for proper nozzle selection (see **Ground Application Spray Drift Management** section).

Tank Mixing Information

See crop-specific information sections for specific application requirements. **Engenia** may be tank mixed with one or more registered herbicide products according to the specific tank mixing instructions in this label and respective product labels. Refer to the tank mix product labels to confirm that the respective tank mix products are registered for the specific crop use; follow required crop rotation restrictions. Read and follow the applicable restrictions and limitations and **Directions For Use** on all product labels involved in tank mixing. Always follow the most restrictive label use directions; refer to crop-specific information section for details.

Mixing **Engenia** with postemergence grass (graminicide) herbicides may reduce the effectiveness of those products. Follow graminicide label when mixing with **Engenia** to ensure optimum weed control. Physical incompatibility, reduced weed control, or crop injury may result from mixing **Engenia** with other pesticides (fungicides, herbicides, insecticides, or miticides), additives, or fertilizers. Local agricultural authorities may be a source of information when using other than BASF-recommended tank mixes.

Compatibility Test for Mix Components

Before mixing components, always perform a compatibility jar test.

1. For 20 gallons per acre spray volume, use 3.3 cups (800 mL) of water. For other spray volumes, adjust rates accordingly. Only use water from the intended source at the source temperature.
2. Add components in the sequence indicated in the following **Mixing Order** instructions using 2 teaspoons for each pound or 1 teaspoon for each pint of labeled use rate per acre.
3. Cap the jar and invert 10 cycles between component additions.
4. When the components have all been added to the jar, let the solution stand for 15 minutes.
5. Evaluate the solution for uniformity and stability. The spray solution should not have free oil on the surface; fine particles that precipitate to the bottom; or thick (clabbered) texture. If the spray solution is not compatible, repeat the compatibility test with the addition of a suitable compatibility agent. If the solution is then compatible, use the compatibility agent as directed on its label. If the solution is still incompatible, **DO NOT** mix the ingredients in the same tank.

Mixing Order

Maintain continuous and constant agitation throughout mixing and application until spraying is completed.

1. **Water** - Begin by agitating a thoroughly clean sprayer tank 1/2 to 3/4 full of clean water.
2. **Inductor** - If an inductor is used, rinse it thoroughly after each component has been added.
3. **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.
4. **Water-soluble additives**
5. **Water-dispersible products** (such as dry flowables, wettable powders, suspension concentrates, or suspo-emulsions)
6. **Water-soluble products and additives** (**Engenia**)
7. **Emulsifiable concentrates** (including NIS and oil concentrate)
8. Remaining quantity of water

Maintain continuous and constant agitation throughout mixing and application until spraying is completed. If the spray mixture is allowed to settle for any period of time, thorough agitation is essential to resuspend the mixture before spraying is resumed. Continue agitation while spraying.

Use Precautions

- **Rainfast Period** - **Engenia** is rainfast 4 hours after application. Postemergence activity may be reduced if rain or irrigation occurs within 4 hours of application.
- **Maximum Seasonal Use Rate** - Refer to crop-specific information sections for maximum seasonal application rates for each crop or use pattern.
- **Stress** - Application to crops under stress because of lack of moisture, hail damage, flooding, herbicide injury, mechanical injury, or widely fluctuating temperatures may result in crop injury.

Use Restrictions

- **DO NOT** contaminate irrigation ditches or water used for domestic purposes.
- **DO NOT** apply **Engenia** through any type of irrigation system (e.g. chemigation).
- **Engenia** is compatible with most pesticides; however, **DO NOT** tank mix **Engenia** with **Lorsban® insecticide**.

Crop Rotation Restrictions

Use the following information to determine the proper interval between **Engenia™ herbicide** application and rotational crop planting as well as replanting after crop failure because of environmental factors such as drought, frost, or hail. Determine the rotational crop interval for tank mix products and use the most restrictive interval of all products applied.

Table 3. Crop Rotation Restrictions by Application Rate

Crop	**Engenia** (fl ozs/A)		
	≤ 6.4	9.6	12.8
	Rotational Crop Interval[1] (days after application)		
Corn	0	0	0
Cotton, non-DT[2]	21†	28	42
Cotton, DT	0	0	0
Sorghum	14	21	28
Soybean, non-DT[2]	14	21	28
Soybean, DT	0	0	0
Grasses[3] 30 inches or more annual precipitation	14	21	28
Grasses[3] less than 30-inches annual precipitation	21	28	42
All other crops	120	120	120

[1] **DO NOT** include time when the soil is frozen and days before receiving any required rainfall or overhead irrigation.
[2] Following application of **Engenia** and a minimum accumulation of 1 inch of rainfall or overhead irrigation, observe the indicated waiting interval.
[3] Includes barley, oats, wheat, and other grass crops. Small grains may be planted with no waiting interval following **Engenia** applied at 3.2 fl ozs/A.
† **Missouri and Tennessee Only.** Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of **14 days** per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Crop-specific Information

This section provides use directions for **Engenia** in specific crops; read product information, application instructions, weeds controlled, and additive instructions in preceding sections of the label. Read and follow tank mix product labels for restrictions, precautions, instructions, and crop rotation restrictions.

Depending on specific crop application directions, **Engenia** may be applied for postemergence control of emerged broadleaf weeds and/or residual control of germinating broadleaf weed seeds before crop planting (preplant and/or preseed) and after planting (preemergence, postemergence). Refer to **Table 1** for list of weeds controlled or suppressed.

Asparagus

Engenia may be applied immediately after cutting asparagus but at least 24 hours before the next cutting. Apply 6.4 to 12.8 fl ozs/A of **Engenia** in 40 to 60 gallons of diluted spray to emerged and actively growing weeds. Apply 12.8 fl ozs/A of **Engenia** to control common chickweed, field bindweed, nettleleaf goosefoot, and wild radish. To improve control of Canada thistle and field bindweed, apply **Engenia** in combination with glyphosate (e.g. **Roundup® herbicide**) or 2,4-D.

If spray contacts emerged spears, crooking (twisting) of some spears may result. If crooking occurs, discard affected spears.

Asparagus Restrictions

- **DO NOT** apply more than a total of 12.8 fl ozs/A of **Engenia** (0.5 pound dicamba ae/A) per year in asparagus.
- **DO NOT** harvest for 24 hours after treatment.
- **DO NOT** use in the Coachella Valley of California.

Between Crop Application

Engenia may be used as a burndown treatment to control broadleaf weeds at any time of the year during the fallow period following crop harvest and before the following crop is planted. Apply **Engenia** as a broadcast or spot treatment to emerged and actively growing weeds after crop harvest (postharvest) and before a killing frost, or in fallow cropland or crop stubble the following spring or summer.

Application Rates and Timings

Apply **Engenia™ herbicide** as a broadcast or spot treatment at 3.2 to 12.8 fl ozs/A plus recommended adjuvants; see **Adjuvants** section for details. Refer to **Table 2** to determine use rates for specific targeted weed species. For best performance, apply **Engenia** when annual weeds are less than 4-inches tall, when biennial weeds are in the rosette stage, and to perennial weed regrowth in late summer or fall following a mowing or tillage treatment. For the most effective control of upright perennial broadleaf weeds such as Canada thistle and Jerusalem artichoke, apply **Engenia** when the majority of weeds have at least 4 inches of regrowth, or for weeds such as field bindweed and hedge bindweed that are in or beyond the full bloom stage.

Avoid disturbing treated areas following application. Treatments may not kill weeds that develop from seed or underground plant parts, such as rhizomes or bulblets, after the effective period for **Engenia**. For seedling control, a follow-up program or other cultural practices should be instituted. For small grain in-crop uses of **Engenia**, refer to **Small Grain** section for details.

Specific crop rotation intervals must be observed between an application of **Engenia** and planting the following crop; see **Crop Rotation Restrictions** in **Use Precautions** section.

Tank Mixes

Broad-spectrum burndown control of grass weeds and/or additional broadleaf weeds will require a tank mix with another herbicide. **Engenia** may be tank mixed with one or more of, but not limited to, the following herbicide products:

- **Distinct® herbicide**
- **Facet® L herbicide**
- **Outlook® herbicide**
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- 2,4-D
- glyphosate (e.g. **Roundup® herbicide**)

Between Crop Application Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A (0.5 pound dicamba ae/A) in a single application of **Engenia** as a between crop application.
- **DO NOT** apply more than a maximum cumulative total of 2 pounds dicamba ae/A from all product sources per cropping season.

Conservation Reserve Program (CRP)

Engenia may be used on both newly seeded and established grasses grown in the Conservation Reserve or federal Set-Aside Programs. Treatment with **Engenia** will injure or may kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Application Rates and Timings

Engenia may be applied at 3.2 to 12.8 fl ozs/A; refer to **Table 2** for rates based on target weed type and growth stage.

Newly Seeded Areas

Engenia may be applied either preplant or postemergence to newly seeded grasses or small grain such as barley, oats, rye, sudangrass, wheat, or other grain species grown as a cover crop. Postemergence application may be made after seedling grasses exceed the 3-leaf stage.

Preplant Intervals. Preplant applications at 12.8 fl ozs/A may injure new seedings if the interval between application and grass planting is less than:
- 20 days - 30 inches or more annual precipitation
- 45 days - less than 30-inches annual precipitation

Established Grass Stands

Established grass stands are perennial grasses planted one or more seasons before treatment. Certain species (bentgrass, buffalograss, carpetgrass, St. Augustinegrass, or smooth brome) may show a response when treated with **Engenia**.

Tank Mixes

Broad-spectrum control of broadleaf and grass weeds will require a tank mix with another herbicide. **Engenia** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Facet L**
- atrazine
- glyphosate (e.g. **Roundup**)
- paraquat (e.g. **Gramoxone® SL herbicide**)

CRP Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** per application.
- **DO NOT** apply more than a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per season.
- **Engenia** may injure newly seeded grasses and certain species, such as bentgrass, buffalograss, carpetgrass, St. Augustinegrass, or smooth brome.

Corn (field, seed, silage) and Popcorn

Engenia™ herbicide may be applied preplant surface, preemergence, or postemergence to corn. Corn in this label refers to conventional or herbicide-tolerant field corn (grown for grain, seed, or silage) and popcorn. Before applying **Engenia** to seed corn or popcorn, verify with your local seed company (supplier) the selectivity of **Engenia** on your inbred line or hybrid to help avoid potential injury to sensitive inbreds or hybrids.

Engenia is not registered for use on sweet corn.

Engenia can be applied before crop emergence using water or sprayable fertilizer as a carrier.

Direct contact of **Engenia** with corn seed must be avoided. If corn seeds are less than 1.5 inches below the soil surface, delay application until corn has emerged.

Postemergence applications of **Engenia** to corn during periods of rapid growth may result in temporary leaning. Corn will usually become erect within 3 to 7 days. To avoid breakage, delay cultivation until after corn is growing normally.

Application Rate

Engenia application rates vary by soil texture, organic matter, and application timing. Refer to **Table 4** for **Engenia** application rates by application timing. Up to 2 applications of **Engenia** may be made during a growing season. Sequential applications must be separated by 2 weeks or more.

Table 4. Engenia Application Rates for Corn

Soil Texture	Organic Matter	Application Rate (fl ozs/A)			
		Preplant/ Preemergence[2]	Preemergence	Postemergence	
		No Tillage	Conventional/ Reduced Tillage	Early[3]	Late[4]
Coarse[1]	All	6.4	NA	6.4	6.4
Medium/Fine	2.5% or less	6.4	NA	12.8	6.4
Medium/Fine	more than 2.5%	12.8	12.8	12.8	6.4

[1] Coarse soil types include sand, loamy sand, or sandy loam.
[2] Use only preemergence applications in conventional and reduced tillage systems.
[3] Apply between corn emergence and the 5-leaf stage or 8-inches tall, whichever comes first. Use crop oil concentrate only in dry conditions when corn is less than 5-inches tall and when applying **Engenia** alone or tank mixed with atrazine.
[4] Apply in corn that is 8-inches to 36-inches tall or up to 15 days before tassel emergence, whichever comes first.
NA - not applicable

Application Timing

Preplant (up to 14 days before planting) and Preemergence Applications in No Tillage Corn

Engenia can be applied to emerged weeds before, during, or after planting a corn crop. When planting into a legume sod (e.g. alfalfa or clover), apply **Engenia** after 4 inches of regrowth. For application rates, refer to **Table 4**.

Preemergence Applications in Conventional or Reduced Tillage Corn

Engenia may be applied after planting and before corn emergence; refer to **Table 4** for application rates. Preemergence application of **Engenia** does not require mechanical incorporation to become active. A shallow mechanical incorporation is recommended if the application is not followed by adequate rainfall or sprinkler irrigation. Avoid tillage equipment (e.g. drags, harrows) that concentrates treated soil over seed furrow or seed damage could result.

Postemergence Applications (all tillage systems)

Apply early postemergence treatment between corn emergence and the 5-leaf stage or 8-inches tall, whichever comes first. Apply later applications when corn is 8-inches to 36-inches tall, or up to 15 days before tassel emergence, whichever comes first. Apply as a directed spray when corn leaves prevent proper spray coverage. Application rates vary by application timing; refer to **Table 4** for specific postemergence application rates.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Armezon® herbicide**
- **Armezon® PRO herbicide**
- **Outlook® herbicide**
- **Prowl® H_2O herbicide**
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- **Zidua® herbicide**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)

NOTE: Refer to tank mix product labels to confirm the respective tank mix products are registered for use on specific corn types. Not all corn products are registered on popcorn and seed corn.

Corn and Popcorn Restrictions

- **DO NOT** use sprayable fluid fertilizer as the carrier for applications of **Engenia™ herbicide** made after crop emergence.
- **DO NOT** apply more than 12.8 fl ozs/A (0.5 pound dicamba ae/A) in a single application of **Engenia**.
- **DO NOT** apply more than a maximum cumulative total of 1.5 pounds dicamba ae/A from all product sources per cropping season.
- Corn or popcorn forage and silage may be harvested, fed, or grazed when the crop has reached the ensilage (milk) stage or later in maturity.
- **Engenia is not registered for use on sweet corn.**

Cotton (non-dicamba-tolerant)

Before planting cotton, **Engenia** may be used early preplant for burndown of actively growing broadleaf weeds; refer to **Table 1** for weeds controlled or suppressed.

Application Rates and Timings

Apply **Engenia** as a broadcast spray up to 6.4 fl ozs/A plus recommended adjuvants; refer to **Adjuvants** section for details. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across.

Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of 21 days per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Missouri and Tennessee Only. Following application of **Engenia**, wait until an accumulation of 1 inch of rainfall or irrigation followed by an interval of **14 days** per 6.4 fl ozs/A or less before planting cotton. This interval must be observed before planting cotton or severe crop injury may occur.

Tank Mixes

Broad-spectrum postemergence control of grass weeds or additional broadleaf weeds will require a tank mix with a herbicide such as glyphosate. **Engenia** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Sharpen® powered by Kixor® herbicide**
- glyphosate (e.g. **Roundup® herbicide**)

Cotton Restrictions

- **DO NOT** apply more than 6.4 fl ozs/A (0.25 pound dicamba ae/A) of **Engenia** per year (single growing season).
- **DO NOT** apply preplant to cotton west of Interstate 25.
- **DO NOT** make **Engenia** preplant application to cotton in geographic areas with average annual rainfall less than 25 inches.
- **DO NOT** apply more than 2 pounds dicamba acid equivalent per acre for the combination of treatments if applying a spring preplant treatment following application of a fall preplant (postharvest) treatment.
- Cotton gin byproducts may be fed to livestock.

Grass Grown for Seed

Engenia may be used to control annual and perennial broadleaf weeds after weed emergence. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. Apply **Engenia** at 6.4 to 12.8 fl ozs/A plus recommended adjuvants to seedling grasses after the crop reaches 3-leaf to 5-leaf stage; see **Adjuvants** section for details. Apply up to 12.8 fl ozs/A of **Engenia** on well-established perennial grasses. Use the higher rate of the listed rate range when treating more mature weeds or dense vegetative growth.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Facet® L herbicide**
- **Prowl® H_2O herbicide**

Grass Grown for Seed Restrictions

- **DO NOT** apply **Engenia** after grass seed crop begins to joint.
- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) per application or a cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per season.
- Refer to **Table 5** for grazing restrictions.

Pasture, Hay, Rangeland, and Farmstead (noncropland)

Engenia™ herbicide may be used on pasture, hay, rangeland, and farmstead including fencerows and nonirrigation ditchbanks for control or suppression of broadleaf weed and woody brush and vine species listed in **Table 1**. **Engenia** uses described in this section also refer to small grain grown for forage pasture use (rye, sorghum, sudangrass, or wheat). Grazing and harvest intervals are shown in **Table 5**.

Engenia may also be applied to noncropland areas to control broadleaf weeds in noxious weed control programs, districts, or areas including broadcast or spot treatment of roadsides, highways, utilities, railroad, and pipeline rights-of-way. Noxious weeds must be recognized at the state level, but programs may be administered at state, county, or other level.

Application Rates and Timings

Refer to **Table 2** for rate selection based on targeted weed or brush species. Some weed species will require a tank mix partner for adequate control. Retreatments may be applied as needed.

DO NOT apply more than 25.6 fl ozs/A of **Engenia** during a growing season.

DO NOT apply more than 12.8 fl ozs/A of **Engenia** during a growing season on small grain grown for pasture and newly seeded areas.

Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, buffalograss, carpetgrass, and St. Augustinegrass may show a response. Usually, colonial bentgrasses are more tolerant than creeping types. Velvetgrasses are most easily injured. Treatments will injure or kill alfalfa, clovers, lespedeza, wild winter peas, vetch, and other legumes.

Engenia can be applied using water, oil-in-water emulsions including invert systems, or sprayable fluid fertilizer as a carrier; refer to **Compatibility Test for Mix Components**.

To prepare oil-in-water emulsions, fill spray tank 1/2 full with water; then add the appropriate amount of emulsifier. Maintaining continuous agitation, slowly add herbicide and then oil (such as diesel oil or fuel oil) or a premix of oil plus additional emulsifier to spray tank. Complete filling of spray tank with water. Maintain vigorous agitation during spray operation to prevent oil and water from forming separate layers.

Spray volume may range from 3 to 600 gallons per acre. The volume of spray applied depends on the height, density, and type of weeds or brush being treated and on the type of equipment used. **Engenia** may be applied as a spot treatment to individual clumps or small areas of undesirable vegetation using a handgun or similar type of application equipment. Apply diluted sprays to allow complete wetting (up to runoff) of foliage and stems.

Table 5. Grazing and Haying Restrictions for Lactating Dairy Animals after Engenia Treatment

Engenia Rate (fl ozs/A)	Days before Grazing	Days before Hay Harvest
Up to 12.8	7	37

Cut-surface Treatment

Engenia may be applied as a cut-surface treatment for control of unwanted trees and prevention of sprouts of cut trees. Mix 1 part **Engenia** with 1 to 3 parts water to create the application solution. Use the lower dilution rate when treating difficult-to-control species. For more rapid foliar effects, 2,4-D may be added to the solution.

- **Frill or Girdle Treatment** - Using an axe to girdle tree trunk, make a continuous cut or a series of overlapping cuts. Spray or paint the cut surface with the solution.
- **Stump Treatment** - Spray or paint freshly cut surface with the water mix. Thoroughly wet the area adjacent to the bark.

Dormant Multiflora Rose Applications

Engenia can be applied as an undiluted spot treatment directly to the soil or as a Lo-Oil basal bark treatment using an oil-in-water emulsion solution when plants are dormant.

Spot Treatment Applications

Spot treatment application of **Engenia** should be applied directly to the soil as close as possible to the root crown within 6 inches to 8 inches of the crown. On sloping terrain, apply **Engenia** to the uphill side of the crown. **DO NOT** apply when snow or water prevents applying **Engenia** directly to the soil. The use rate of **Engenia** depends on the canopy diameter of the multiflora rose.

Example Engenia use rates:

- 0.25 fl oz per 5-feet canopy diameter
- 1.0 fl oz per 10-feet canopy diameter
- 2.35 fl ozs per 15-feet canopy diameter

Lo-Oil Basal Bark Treatment

For Lo-Oil basal bark treatments, apply **Engenia** to the basal stem region from the ground line to a height of 12 inches to 18 inches. Spray until runoff, with special emphasis on covering the root crown. For best results, apply **Engenia** when plants are dormant.

- **DO NOT** apply after bud break or when plants are showing signs of active growth.
- **DO NOT** apply when snow or water prevents applying **Engenia** to the ground line.

Lo-Oil Spray Solution Preparation

1. Combine 1.5 gallons of water, 1 oz of emulsifier, 12.8 fl ozs of **Engenia**, and 2.5 pints of No. 2 diesel fuel.
2. Adjust the amounts of materials used proportionately to the amount of final spray solution desired.

DO NOT apply more than 8 gallons/A of Lo-Oil spray solution mix per year.

Tank Mixes

Broad-spectrum control of broadleaf and grass weeds will require a tank mix with another herbicide. **Engenia™ herbicide** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Frequency® herbicide**

Pasture, Hay, Rangeland, and Farmstead (noncropland) Restrictions

- **DO NOT** apply more than a maximum cumulative total of 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) during a growing season.
- **DO NOT** apply more than a maximum cumulative total of 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) to small grain grown for pasture and to newly seeded areas.

Proso Millet

For use only within Colorado, Nebraska, North Dakota, South Dakota, and Wyoming

Engenia combined with 2,4-D will provide control or suppression of annual broadleaf weeds; see **Table 1**.

Apply 3.2 fl ozs/A of **Engenia** with 0.375 lb acid equivalent of 2,4-D per acre. Apply the tank mix of **Engenia** plus 2,4-D as a broadcast or spot treatment to emerged and actively growing weeds and when proso millet is in the 2-leaf to 5-leaf stage. Use directions for 2,4-D products vary with manufacturers; refer to a 2,4-D product with labeling consistent with the crop-stage timing for **Engenia**. Some types of proso millet may be affected adversely by a tank mix of **Engenia** plus 2,4-D.

Proso Millet Restrictions

- **DO NOT** apply unless possible proso millet crop injury will be acceptable.
- **DO NOT** apply more than 3.2 fl ozs/A of **Engenia** (0.125 lb dicamba ae/A) per season in proso millet.
- Refer to **Table 5** for grazing restrictions.

Small Grain (barley, oats, triticale, and wheat)

Engenia may be applied before, during, or after planting small grain (barley, oats, triticale, and wheat). Refer to **Application Rates and Timings** for specific small grain crop uses. For best performance, apply **Engenia** when weeds are less than 4 inches in height and rosettes are less than 2-inches across. **Engenia** can be applied using water or sprayable fertilizer as a carrier. Applying **Engenia** to small grain during periods of rapid growth may result in crop leaning; this condition is temporary and will not reduce crop yield.

Restrictions for small grain areas grazed or cut for hay are indicated in **Table 5** in **Pasture, Hay, Rangeland, and Farmstead (noncropland)** section of this label.

Application Rates and Timings

Early Season Applications

Table 6. Early Season Application Rate and Growth Stage in Small Grain[1]

Crop	Fall-seeded		Spring-seeded	
	Rate (fl ozs/A)	**Growth Stage**	**Rate** (fl ozs/A)	**Growth Stage** (up to)
Barley[2, 3]	1.6 to 3.2	before joint	1.6 to 2.4	4-leaf
Oats[3]			1.6 to 3.2	5-leaf
Triticale			1.6 to 3.2	6-leaf
Wheat[4]			1.6 to 3.2	6-leaf

[1] An adjuvant system should be used with all **Engenia** applications; refer to **Adjuvants** section for details. **DO NOT** use oil concentrates for postemergence in-crop application.
[2] For spring barley varieties seeded during winter months or later, follow the rate and timing given for spring-seeded barley.
[3] **DO NOT** tank mix **Engenia** with 2,4-D in oats or early season application on spring-seeded barley.
[4] Early developing wheat varieties must receive application between early tillering and the joint stage; ensure that the application occurs before the jointing stage.

Fall-seeded Wheat ONLY

Western Oregon. When applied in the spring, **Engenia** may be used at rates up to 4.8 fl ozs/A on fall-seeded wheat. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury.

Colorado, Kansas, New Mexico, Oklahoma, and Texas. For suppression of perennial weeds (such as field bindweed), up to 6.4 fl ozs/A of **Engenia** may be applied on fall-seeded wheat after wheat exceeds the 3-leaf stage. Application may be made in the fall following a frost but before a killing freeze. **Engenia** at 6.4 fl ozs/A may be tank mixed with MCPA after wheat begins to tiller. Periods of extended stress such as cold and wet weather may enhance the possibility of crop injury. For fall applications only, **DO NOT** apply **Engenia** if the potential for crop injury is unacceptable.

Preharvest Applications

To control broadleaf weeds that interfere with harvest, **Engenia** may be applied before harvest when barley or wheat is in the hard dough stage and the green color is gone from the nodes (joints) of the stem. Best results will be obtained if the application can be made when weeds are actively growing but before weeds canopy.

Engenia applications may be made to fall-planted and spring-planted barley and wheat at 6.4 fl ozs/A as a

broadcast application or spot treatment. A preharvest interval (PHI) of 7 days is required before crop harvest.

Tank Mixes

Broad-spectrum control of broadleaf and grass weeds will require a tank mix with another herbicide. **Engenia™ herbicide** may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Beyond® herbicide** (for **Clearfield®** wheat and **Clearfield® Plus** wheat only)
- **Clearmax® herbicide** (for **Clearfield** wheat and **Clearfield Plus** wheat only)
- **Sharpen® powered by Kixor® herbicide**
- **Zidua® herbicide**
- 2,4-D amine
- MCPA
- sulfonylurea-based herbicide (e.g. **Ally® herbicide**, **Express® herbicide**, **Finesse® herbicide**)

Small Grain Restrictions

- **Maximum use rate per application**
  - 3.2 fl ozs/A: Oats and triticale
  - 6.4 fl ozs/A: Spring-seeded barley, fall-seeded barley, wheat
- **Maximum seasonal use rate**
  - 3.2 fl ozs/A: Oats and triticale
  - 8.8 fl ozs/A: Spring-seeded barley
  - 9.6 fl ozs/A: Fall-seeded barley
  - 12.8 fl ozs/A: Wheat
- **DO NOT** apply **Engenia** preharvest to oats or triticale.
- **DO NOT** use oil concentrate for postemergence in-crop application.
- **DO NOT** use preharvest-treated barley or wheat for seed unless a germination test with an acceptable result of 95% germination or more is performed on the seed.
- **DO NOT** graze small grain (barley, oats, triticale, wheat) within 7 days after treatment.
- **DO NOT** harvest for hay within 37 days after treatment.
- Barley and wheat may be harvested 7 days or more after a preharvest application.
- **DO NOT** make preharvest application in California.

Sorghum

Engenia may be used early preplant, postemergence, and preharvest in sorghum to control many annual broadleaf weeds and to reduce competition from established perennial broadleaf weeds.

Application Rates and Timings

Preplant Applications

(at least 14 days before planting)

A preplant application of **Engenia** up to 6.4 fl ozs/A may be applied at least 14 days before sorghum planting. **Engenia** can be applied using water or sprayable fertilizer as a carrier.

Postemergence Applications

Up to 6.4 fl ozs/A of **Engenia** plus recommended adjuvants (refer to **Adjuvants** section for details) may be applied after sorghum is in the spike stage (all sorghum emerged) but before sorghum is 15-inches tall. For best performance, apply **Engenia** when sorghum crop is in the 3-leaf to 5-leaf stage and weeds are small (less than 3-inches tall). Use drop nozzles if sorghum is taller than 8 inches. Keep spray off sorghum leaves and out of the whorl to reduce the likelihood of crop injury and to improve spray coverage of weed foliage.

Applying **Engenia** to sorghum during periods of rapid growth may result in temporary leaning of plants or rolling of leaves. These effects are usually outgrown within 10 to 14 days.

Preharvest Applications

Oklahoma and Texas ONLY

Up to 6.4 fl ozs/A of **Engenia** may be applied for weed suppression any time after sorghum has reached the soft-dough stage. An agriculturally approved surfactant may be used to improve performance; see **Adjuvants** section for details. Delay harvest until 30 days after a preharvest treatment.

Split Applications

Engenia may be applied in split applications: preplant followed by postemergence or preharvest; or postemergence followed by preharvest. **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** per application, or a maximum cumulative total of 12.8 fl ozs/A of **Engenia** per year.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Basagran® 5L herbicide**
- **Facet® L herbicide**
- **Outlook® herbicide** - (Preplant only)
- **Sharpen**
- **Verdict® powered by Kixor® herbicide**
- atrazine
- glyphosate (e.g. **Roundup® herbicide**)

Sorghum Restrictions

- **DO NOT** graze or feed treated sorghum forage or silage before mature grain stage. If sorghum is grown for pasture or hay, refer to **Pasture, Hay, Rangeland, and Farmstead (noncropland)** section for specific grazing and feeding restrictions.
- **DO NOT** apply **Engenia™ herbicide** to sorghum grown for seed production.
- **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** (0.25 lb dicamba ae/A) per application.
- **DO NOT** apply more than a maximum cumulative total of 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) per season.
- **Oklahoma and Texas only** - Delay harvest until 30 days after a preharvest treatment.

Soybean (non-dicamba-tolerant)

Engenia may be used preplant or preharvest in soybean to control many annual broadleaf weeds and to reduce competition from established biennial and perennial broadleaf weeds.

Application Rates and Timings

Preplant Applications

(at least 14 days before planting)

Apply **Engenia** as a broadcast spray at 3.2 to 12.8 fl ozs/A plus recommended adjuvants; refer to **Adjuvants** section for details.

Preplant Intervals. Following application of **Engenia** and a minimum accumulation of 1 inch of rainfall or overhead irrigation, preplant waiting intervals are required before planting soybeans or crop injury may occur:

- **14 days** for 3.2 to 6.4 fl ozs/A
- **28 days** for 6.5 to 12.8 fl ozs/A

Preharvest Applications

Apply **Engenia** as a broadcast spray or spot spray at 6.4 to 12.8 fl ozs/A plus recommended adjuvants; refer to **Adjuvants** section for details. Applications should be made to emerged and actively growing weeds after soybean pods have reached mature brown color and at least 75% leaf drop has occurred.

Treatments may not kill weeds that later develop from seed or underground parts, such as rhizomes or bulblets, after the effective residual period for **Engenia**. For seedling control, a follow-up program or other cultural practices should be instituted.

Tank Mixes

Engenia may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Optill® powered by Kixor® herbicide**
- **Outlook® herbicide**
- **Prowl® H_2O herbicide**
- **Pursuit® herbicide**
- **Raptor® herbicide**
- **Sharpen® powered by Kixor® herbicide**
- **Verdict® powered by Kixor® herbicide**
- **Zidua® herbicide**
- **Zidua® PRO powered by Kixor® herbicide**
- glyphosate (e.g. **Roundup® herbicide**)

Soybean Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (0.5 lb dicamba ae/A) in a spring application before soybean planting.
- **DO NOT** make **Engenia** preplant application to soybeans in geographic areas with average annual rainfall less than 25 inches.
- **DO NOT** apply more than 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per year (single growing season).
- **DO NOT** use preharvest-treated soybean for seed unless a germination test with an acceptable result of 95% germination or better is performed on the seed.
- **DO NOT** harvest soybeans until 7 days after a preharvest application.
- **DO NOT** feed soybean fodder or hay following preharvest application of **Engenia**.
- **DO NOT** make preharvest applications in California.

Sugarcane

Engenia may be used any time after weed emergence but before the close-in stage of sugarcane to control many annual and perennial broadleaf weeds; see **Table 1** for weeds controlled or suppressed.

Apply 6.4 to 12.8 fl ozs/A of **Engenia** for control of annual weeds and 12.8 fl ozs/A for control or suppression of biennial and perennial weeds. Use the higher rate of the specified rate range when treating dense vegetative growth. Repeat treatment may be made as needed; however, **DO NOT** apply more than the annual maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A).

When possible, direct the spray beneath the sugarcane canopy to minimize the likelihood of crop injury. Using directed sprays will also help maximize the spray coverage of weed foliage.

Tank Mixes

Engenia™ herbicide may be tank mixed or applied sequentially with one or more of, but not limited to, the following herbicide products:

- **Prowl® H_2O herbicide**
- atrazine

Sugarcane Restrictions

- **DO NOT** apply more than 12.8 fl ozs/A of **Engenia** (1 lb dicamba ae/A) in a single application.
- **DO NOT** apply more than a maximum cumulative total of 51.2 fl ozs/A of **Engenia** (2 lbs dicamba ae/A) per growing season.
- **DO NOT** harvest sugarcane until 87 days after application.

Farmstead Turf (noncropland) and Sod Farms

Engenia may be used in farmstead turf (noncropland) and sod farms to control or suppress growth of many annual, biennial, and some perennial broadleaf weeds; see **Table 1** for weeds controlled or suppressed. **Engenia** will also suppress woody brush and vine species; refer to **Table 2** for application rates based on targeted weed or woody brush and vine species and growth stage. Some weed species will require tank mixes for optimum control.

Repeat treatment may be made as needed; however, **DO NOT** apply more than 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) per growing season.

Apply 30 to 200 gallons of diluted spray per acre (3 to 17 quarts of water per 1000 sq ft), depending on density or height of weeds treated and on type of equipment used.

To avoid injury to newly seeded grasses, delay application of **Engenia** until after the second mowing. Established grass crops growing under stress can exhibit various injury symptoms that may be more pronounced if herbicides are applied. Bentgrass, buffalograss, carpetgrass, and St. Augustinegrass may show a response.

Tank Mixes

Engenia at 3.2 to 12.8 fl ozs/A may be tank mixed with one or more of, but not limited to, the following herbicide products:

- **Drive® XLR8 herbicide**
- **Pendulum® herbicide**
- **Tower® herbicide**
- 2,4-D
- MCPA
- MCPP

Farmstead Turf and Sod Farm Restrictions

- **DO NOT** use on residential sites.
- **DO NOT** apply more than 25.6 fl ozs/A of **Engenia** (1 lb dicamba ae/A) per growing season.
- **Areas where Roots of Sensitive Plants Extend**
  - **DO NOT** apply more than 3.2 fl ozs/A of **Engenia** (0.125 lb dicamba ae/A) on coarse-texture soils (sand, loamy sand, or sandy loam).
  - **DO NOT** apply more than 6.4 fl ozs/A of **Engenia** on fine-texture soils.
  - **DO NOT** make repeat applications in these areas for 30 days and until previous applications of **Engenia** have been activated in the soil by rainfall or irrigation.

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.

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007969-00345.20120328f.**NVA 2012-04-385-0062**

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