CRANBERRY

General Information

PRODUCT INFORMATION
Cavallo 4 SC is a systemic pre-emergence and post-emergence herbicide for selective contact and residual control of broadleaf weeds in labeled crops. In pre-emergence applications, weeds take up the product through the soil during weed emergence. Dry weather conditions reduce pre-emergent effectiveness of Cavallo 4 SC. At least ¼-inch of rainfall must occur within 7-10 days of application; rotary hoeing activates Cavallo 4 SC. In post- emergence applications, vulnerable weeds take up the product through treated foliage and stop growing soon after application. It can take up to two weeks for weeds to die. Cavallo 4 SC is absorbed by soil and/or through foliage of emerged weeds.

Cavallo 4 SC does not control most species of grass weeds. Cavallo 4 SC can be tank-mixed with other herbicides registered to control grass weeds (see tank-mix information in this label for additional information). Cavallo 4 SC can be used in combination with a burndown herbicide prior to planting to provide weed control in field corn, seed corn, yellow popcorn, and sweet corn.

RESISTANCE MANAGEMENT FOR CAVALLO 4 SC (GROUP 27 HERBICIDE)
The efficacy of Cavallo 4 SC is not affected by the presence of biotype weed species that are resistant to Protoporphyrinogen Oxidase (PPO), 4-Hydroxyphenylpyruvate Dioxygenase (HPPD) or Acetolactate Synthase (ALS) inhibiting herbicides or to Triazine or Glyphosate herbicides. To reduce the risk of weeds developing resistance to mesotrione in corn, always use full specified label rates. When applying Cavallo 4 SC post-emergence after a mesotrione-containing pre-emergence herbicide, add atrazine as a tank mix partner. Do not apply more than 0.24 lb. of mesotrione active ingredient per acre of corn per year (equivalent to 7.7 fl. oz. per acre per year of Cavallo 4 SC). If additional herbicide is needed, use an herbicide product other than a HPPD inhibitor (Group 27 Herbicide). Use specified label rates of Cavallo 4 SC to prevent selection for, or population shifts toward, marginally tolerant weed species and/or species biotypes.

INTEGRATED WEED PEST MANAGEMENT
Integrate Cavallo 4 SC into an overall weed pest management strategy whenever

the use of an herbicide is required. Practices known to reduce weed development (tillage, crop competition) and herbicide use (weed scouting, proper application timing, banding) should be followed wherever possible. Consult local agricultural and weed authorities for additional IPM strategies established for your area.

USE PRECAUTIONS - CAVALLO 4 SC

Severe corn injury and/or yield loss can occur:

- From post-emergent application of Cavallo 4 SC to corn treated with Counter or Lorsban.

- If foliar post-emergent applications of Cavallo 4 SC are made to corn in a tank mix with any organophosate or carbamate insecticide.

- If an organophosphate or carbamate insecticide is applied foliar post-emergence within 7 days before or 7 days after Cavallo 4 SC application.

- When weeds are stressed due to drought, heat, lack of fertility, flooding, or prolonged cool temperatures control can be reduced or delayed since the weeds are not actively growing. Weed escapes or regrowth may occur when application is made under prolonged stress conditions. Optimum weed control will be obtained if an application of Cavallo 4 SC is made following label directions when weeds are actively growing.

- Cavallo 4 SC may be applied with pyrethroid type insecticides (e.g., Lambda cyhalothrin).

USE RESTRICTIONS - CAVALLO 4 SC

- DO NOT apply this product to white popcorn or ornamental (Indian) corn.

- DO NOT cultivate corn within 7 days before or after application of this product as weed control may be reduced.

- DO NOT apply this product through any type of irrigation system unless specified under the specific crop section of the label.

- DO NOT apply this product with suspension fertilizers as the carrier.

- DO NOT apply this product post-emergence in a tank mix with emulsifiable

concentrate grass herbicides, unless specifically directed under one of the tank mix sections of this label, or crop injury can occur.

- DO NOT make aerial applications of this product unless specified in the specific crop directions of this label.

SPRAY DRIFT RESTRICTIONS

- Avoid drift to adjacent crops and non-target areas.

- For aerial applications use only nozzles that produce coarse to very coarse droplets. DO NOT use nozzles that produce fine to medium size droplets.

- DO NOT apply when weather conditions can cause drift to non-target areas to avoid injury to adjacent crops and vegetation.

- DO NOT apply when wind speed is greater than 10 mph or during a temperature inversion.

- Use of larger droplet sizes will help avoid spray drift.

- Spray must be released at the lowest height consistent with effective weed control and flight safety.

- Do not make applications at a height greater than 10 feet above the top of the largest plants unless a greater height is required for aircraft safety.

- Application must be avoided below 2 mph due to variable wind direction and high inversion potential.

- Do not make applications during a temperature inversion, because drift potential is high.

SPRAY DRIFT PRECAUTIONS FOR AERIAL APPLICATION TO CORN & SUGARCANE ONLY

The distance of the outer-most nozzles on the boom must not exceed ¾ the length of the wingspan or rotor.

Nozzles must always point backward parallel with the air stream and never be pointed downwards more than 45 degrees. Where states have more stringent regulations, they must be observed.

For best results with aerial application of this product, each type of airplane and helicopter must be quantifiably pattern tested initially and every year thereafter.

RESTRICTION: FOR AERIAL APPLICATION USE ONLY NOZZLES PRODUCING COARSE TO VERY COARSE DROPLETS. DO NOT USE NOZZLES PRODUCING FINE OR MEDIUM SIZE DROPLETS.

For some use patterns, reducing the effective boom length to less than ¾ of the wingspan or rotor length may further reduce drift without reducing swath width. Making applications at the lowest height that is safe reduces exposure of droplets to evaporation and wind.

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

Drift potential is lowest between wind speeds of 2-10 mph. However, many factors, including droplet size and equipment type determine drift potential at any given speed.

NOTE: Local terrain can influence wind patterns. Every applicator must be familiar with local wind patterns and how they affect drift.
When making application in low relative humidity, set up equipment to produce larger droplets to compensate for evaporation. Droplet evaporation is most severe when conditions are both hot and dry.

Temperature inversions restrict vertical air mixing, which causes small suspended droplets to remain in a concentrated cloud. This cloud can move in unpredictable directions due to the light variable winds common during inversions. Temperature inversions are characterized by increasing temperatures with altitude and are common on nights with limited cloud cover and light to no wind. They begin to form as the sun sets and often continue into the morning. Their presence can be indicated by ground fog; however, if fog is not present, inversions can also be identified by the movement of smoke from a ground source or an aircraft smoke generator. Smoke that layers and moves laterally in a connected cloud (under low wind conditions) indicates an inversion, while smoke that moves upwards and

rapidly dissipates indicates good vertical air mixing.

Apply Cavallo 4 SC when the potential for drift to adjacent sensitive areas (e.g., residential areas, bodies of water, known habitat, for threatened or endangered species, non-target crops) is minimal (e.g., when wind is blowing away from the sensitive areas).

AERIAL APPLICATION INSTRUCTIONS FOR CORN AND SUGARCANE

Aerial application of Cavallo 4 SC is permitted only on corn and sugarcane. Make aerial applications with nozzles that produce coarse to very coarse droplets. DO NOT use nozzles producing fine to medium size droplets.

CORN
Cavallo 4 SC is approved for aerial application for pre-emergence and post-emergence control in corn in the states of: Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Maryland, Massachusetts, Michigan, Minnesota, Mississippi, Missouri, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Nebraska, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, and Wyoming.

SUGARCANE

Cavallo 4 SC is approved for aerial application for pre-emergence and post-emergence control in sugarcane in the states of: Florida, Louisiana, and Texas.

Make aerial applications in a minimum of 2 gallons water per acre.

PRE-EMERGENCE GROUND APPLICATION INSTRUCTIONS

Apply Cavallo 4 SC pre-emergence with a carrier volume of 10-60 gals./A.

Space spray nozzles of the same size and type uniformly to provide accurate and uniform coverage. Use medium to coarse droplet size nozzles to ensure coverage and avoid drift. Apply in a spray volume of 10-60 gals./A with water or liquid fertilizer (NOT suspension fertilizer) as the carrier. Use a pump that will maintain pump pressure of 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures can be used with extended

range or drift reduction nozzles.

Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, re-suspend the spray solution by running on full agitation prior to spraying.

POST-EMERGENCE GROUND APPLICATION INSTRUCTIONS

Space spray nozzles of the same size and type uniformly to provide accurate and uniform coverage. Use medium to coarse droplet size nozzles to ensure coverage and avoid drift. Complete weed coverage is essential for optimum weed control. Boom height for broadcast over-the-top applications must be based on the height of the crop, at least 15 inches above the crop canopy.

Apply in a spray volume of 10-30 gals./A with water as the carrier. Use a pump that will maintain pump pressure of 35-40 psi at the nozzles and provide proper agitation within the tank to keep the product dispersed. Lower pressures can be used with extended range or drift reduction nozzles. If weed foliage is dense, use a minimum of 20 gals.

Apply with flat fan nozzles 80°-100° for optimum post-emergent coverage. Do not use flood jet nozzles or controlled droplet application equipment for postemergence applications.

Angle nozzles forward 45° to enhance product penetration and provide better coverage. In-line strainers and nozzle screens must be a minimum of 50-mesh or coarser.

Maintain constant agitation until spraying is complete, even if stopping for brief periods of time. If agitation is stopped for longer than 5 minutes, resuspend the spray solution by running on full agitation prior to spraying.

USE DIRECTIONS WITH SPRAY ADDITIVES

Post-Emergence Adjuvants

It is recommended that any adjuvant used with Cavallo 4 SC meet the certification program requirements of the Chemical Producers and Distributors Association (CPDA). The following recommendations are mainly for use in corn. For other crops refer to the specific crop use directions.

Adjuvant Use in Post-Emergence applications to Field and Seed Corn

After corn emerges, add 1.0 gal./100 gals. of water (1.0% v/v) Crop Oil Concentrate (COC) to the spray solution. 1 qt./100 gals. of water (0.25% v/v) of a nonionic surfactant (NIS) can be used, but better weed control is achieved with the use of a COC compared to NIS.

In addition to COC, add 2.5% (v/v) a spray grade UAN (e.g., 28-0-0) to the spray solution, or 8.5 lbs./100 gallons of ammonium sulfate (AMS), except if precluded elsewhere on this label or a state-specific supplemental label.

Adjuvant Use Post-Emergence to Sweet and Yellow Corn

Use a NIS instead of a COC to reduce the likelihood of crop injury. COCs will maximize weed control under dry growing conditions, but will significantly injure crops under lush growing conditions. To optimize weed control, add atrazine wherever rotational or local atrazine restrictions allow.

Pre-Emergence Adjuvant Use

Any adjuvant approved for use on agriculture is permitted when making Cavallo 4 SC pre-plant or pre- emergence applications. MSO adjuvants perform better than COC and NIS adjuvants under pre-plant/pre-emergence conditions. UAN and AMS adjuvants will provide better weed control than not using any adjuvant. If Cavallo 4 SC is being tank-mixed with another registered herbicide, refer to the tank mix partner label for adjuvant precautions and restrictions.

RESTRICTIONS

- DO NOT use methylated seed oil (MSO) or MSO adjuvant blends for post-emergence applications of Cavallo 4 SC or severe crop injury can occur.

- DO NOT use MSO adjuvants unless it is specifically permitted in the Tank Mixtures for Corn section of this label, or if permitted by a state-specific supplemental label.

- DO NOT use UAN or AMS on sweet and yellow corn as severe crop injury can occur.

Limitations, Restrictions, and Exceptions

CROP USE DIRECTIONS – CRANBERRY

Apply Cavallo 4 SC to bearing or non-bearing cranberry beds to control or suppress the weeds listed in Tables 1 and 2, and:
- bog St. John’s wort (Hypericum boreale)
- rushes (Juncus canadensis, J. effuses, J. bufonulus, J. tenuis)
- sedges spp. (Carex spp.)
- silverleaf (Potentilla pacifica)
- yellow loosestrife (Lysimachia terrestris)

RESTRICTIONS for Bearing/Non-Bearing Application Rates:

- Apply up to 8 fl. oz./A, but do not apply more than 16 fl. oz./A in total per year.

- Make no more than two 8 fl. oz./A applications per crop per year.

- If two applications are made, do not make them closer than 14 days apart. Use 1% v/v of a crop oil concentrate (COC) or 0.25% v/v non-ionic surfactant (NIS).

- Do not use COC adjuvants that are known to injure cranberry leaves.

- Non-bearing Cranberries: Apply after the bud break stage no less than 45 days before flooding in fall or winter.

- Bearing Cranberries: Apply after the bud break stage no less than 45 days before flooding or harvest.
Cavallo 4 SC can be applied through irrigation systems (chemigation) including center pivot or solid set. Cranberry Restrictions:

- Do not make more than two applications of Cavallo 4 SC per year.

- Do not apply more than 16.0 fl. oz./A per year.

Sprinkler Irrigation Application – Cranberries Only

Check the irrigation system to ensure uniform application of water to all areas. Thorough coverage of foliage is required for optimal control. Maintain good agitation in the pesticide supply tank prior to and during the entire application process. Inject the specified rate of Cavallo 4 SC into the irrigation system with a metering device designed to introduce a constant flow and that will distribute the product to target areas in 0.1-0.2 acre-inch of water. Use the least amount of water with this rate range required for proper distribution and coverage.

After application is complete, flush the entire irrigation and injection systems with clean water before stopping the system. If application is being made during a normal irrigation set of a stationary sprinkler, the specified rate of Cavallo 4 SC for the area covered should be injected into the system only during the end of the irrigation set for sufficient time to provide optimal coverage and distribution.

CHEMIGATION USE PRECAUTIONS – SPRINKLER IRRIGATION APPLICATION

Apply this product through center pivot or solid set sprinkler irrigation systems only. Do not apply this product through any other type of irrigation system.
Non-uniform distribution of treated water can cause crop injury, product ineffectiveness, and/or illegal pesticide residues in the crop. Contact State Extension Service Specialists, equipment manufacturers or other experts if you have questions about calibrating equipment.
Do not connect an irrigation system or greenhouse system used for pesticide application to any public water system. A public water system is any system used for provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible personal shall shut the system down and make necessary adjustments should the need arise.

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back-flow. The pesticide injection pipeline must contain a functional, automatic, quick-closing check valve to prevent the flow of fluid back toward the injection pump.

The pesticide injection pipeline must also contain a functional, normally closed solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down. The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.

The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when pressure decreases to the point where pesticide distribution is adversely affected. Systems must also use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and are capable of being fitted with a system interlock.

Any alternatives to the above required safety devices must conform to the list of EPA approved alternative devices.

CHEMIGATION USE RESTRICTIONS – SPRINKLER IRRIGATION APPLICATION

- Do not apply this product through any other type of irrigation system.

- Do not apply when wind speed favors drift beyond the area intended for treatment or non-uniform distribution of treated water.

- Do not apply directly to water or areas where surface water is present outside the bog system.

- Do not contaminate water when disposing of equipment washwater or rinsate.

- Do not apply within 10 feet of surface water outside the bog system.

- Do not spray to runoff.

Method

Broadcast/Foliar Ground

Rates

field_rates 0

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Restricted Entry Interval

12 hours

Timings

Non-bearing Cranberries: After the bud break stage no less than 45 days before flooding in fall or winter.

Non-bearing Cranberries: After the bud break stage no less than 45 days before flooding in fall or winter.