

# **CELERY, CHINESE CELERY, FLORENCE FENNEL - DIRECT-SEEDED - PREEMERGENCE**

## General Information

### PRODUCT INFORMATION

Caparol 4L is a selective herbicide that may be applied either before or after weeds emerge for control of most annual broadleaf weeds and grasses, including groundcherry, lambsquarters, annual morningglory, malva, mustard, black nightshade, pigweed (carelessweed), purslane, Florida pusley, ragweed, smartweed, teaweed (prickly sida), barnyardgrass (watergrass), crabgrass, foxtail, goosegrass, junglerice, Panicum spp., signalgrass (and other Brachiaria spp.), and wild oats. Caparol 4L also controls shallow-germinating seedlings of cocklebur, coffeeweed, and sandbur. Caparol 4L will also provide partial control of spurred anoda (cottonweed), rough blackfoot (ironweed, cluster flaveria), and prairie sunflower in NM and western TX. Caparol 4L does not control johnsongrass, bermudagrass, other established perennials, or sprangletop at selective rates.

When applied before weeds emerge, Caparol 4L enters weeds through their roots. Thus, its effectiveness depends on moisture to move it into the soil. Under very dry soil conditions after application, a shallow cultivation or rotary hoeing will generally result in better weed control.

When applied to emerged weeds, Caparol 4L provides foliar knockdown and/or residual control of later germinating weeds, depending on the rate applied.

### RESISTANCE MANAGEMENT

Caparol 4L Herbicide contains the active ingredient prometryn which inhibits photosynthesis at photosystem II (PSII, Site of Action Group 5). Some naturally occurring weed populations have been identified as resistant to Group 5 herbicides. Selection of resistant biotypes through repeated use of these herbicides or lower than labeled use rates in the same field, may result in weed control failures. A resistant biotype may be present where poor performance cannot be attributed to adverse environmental conditions or improper application methods. Contact your local Syngenta representative, retailer, crop advisor or extension agent to

determine if weeds resistant to this mode of action are present in your area. If resistant biotypes have been reported, use the full labeled rate of this product, apply at the labeled timing, and tank-mix with a different mode of action product so there are multiple effective modes of application for each suspected resistant weed.

## Principles of Herbicide Resistant Weed Management

### Scout and know your field

- Know weed species present in the field to be treated through scouting and field history. An understanding of weed biology is useful in designing a resistance management strategy. Ensure the weed management program will control all weeds present.
- Scout fields prior to application to determine species present and growth stage. Always apply this herbicide at the full labeled rate and correct timing for the weeds present in the field.

### Utilize non-herbicidal practices to add diversity

- Use diversified management tactics such as cover crops, mechanical weed control, harvest weed seed control, and crop rotation as appropriate.

### Use good agronomic practices, start clean and stay clean

- Use good agronomic practices that enhance crop competitiveness.
- Plant into weed-free fields utilizing tillage or an effective burndown herbicide for control of emerged weeds.
- Sanitize farm equipment to avoid spreading seed or vegetative propagules prior to leaving fields.

### Difficult to control weeds

- Fields with difficult to control weeds should be planted in rotation with crops that allow the use of herbicides with an alternative mode of action or different management practices.
- Difficult to control weeds may require sequential applications, such as a broad spectrum preemergence herbicide followed by one or more postemergence herbicide applications. Utilize herbicides containing different modes of action effective on the target weeds in sequential applications.

### Do not overuse the technology

- Do not use more than two applications of this or any other herbicide with the same mode of action in a single growing season unless mixed with an herbicide with a

different mode of action which provides overlapping spectrum for the difficult to control weeds.

Scout and inspect fields following application

- Prevent an influx of weeds into the field by controlling weeds in field borders.
- Scout fields after application to verify that the treatment was effective.
- Suspected- herbicide resistant weeds may be identified by these indicators
- Failure to control a weed species normally controlled by the herbicide at the dose applied, especially if control is achieved on adjacent weeds;
- A spreading patch of non-controlled plants of a particular weed species; and
- Surviving plants mixed with controlled individuals of the same species.
- Report non-performance of this product to your Syngenta retailer, Syngenta representative, or call 1-866-Syngent (866-796-4368). If resistance is suspected ensure weed escapes are controlled using an herbicide with an effective mode of action and/or use non-chemical means to prevent further seed production.

Prevent weed escapes before, during, and after harvest

Do not allow weed escapes to produce seed or vegetative structures such as tubers or stolons which contribute to spread and survival. Consider harvest weed seed management and control weeds post-harvest to prevent seed production.

## REPLANT AND ROTATIONAL CROPS

The following crops listed in the table in the label may be planted at the specified interval following application of Caparol 4L Herbicide to all crops on this label except cotton.

## ROTATIONAL USE RESTRICTIONS

- 1) DO NOT replant or rotate any crop in the table if more than 4 pt/A of Caparol 4L has been applied to the previous crop.
- 2) DO NOT use this table as guidance to replant or rotate any crop after treatment of cotton by Caparol 4L Herbicide.

Rotational Crop Restrictions Following Cotton

The following crops listed in the table in the label may be planted at the specified interval following application of Caparol 4L Herbicide to cotton.

## Precaution

- Cotton may be replanted in soil previously treated with Caparol 4L Herbicide. Application of a second preemergence treatment may result in crop injury.

## ROTATIONAL USE RESTRICTIONS

- 1) DO NOT replant or rotate any crop if more than one of the following applications of Caparol 4L Herbicide are used: pre-plant incorporated, pre-emergence or only one post-directed treatment.
- 2) DO NOT replant or rotate any crop until the following year where a lay-by or multiple applications of Caparol 4L Herbicide are made.

## APPLICATION PROCEDURES

Do not apply this product in a way that will make contact with workers or other persons, either directly or through drift. Only protected handlers may be in the area during application.

Ground application (All uses): Use conventional ground sprayers equipped with nozzles that provide accurate and uniform application.

Calibrate sprayer before use and recalibrate at the start of each season and when changing carriers. Unless otherwise specified, use a minimum of 20 gal of spray mixture per acre for all preplant incorporated, preemergence, and postemergence applications (with or without surfactant) with ground equipment.

Use a pump with capacity to: (1) maintain nozzles at 35-40 psi, and (2) provide sufficient agitation in tank to keep mixture in suspension. A centrifugal pump which provides propeller shear action is recommended for dispersing and mixing this product. The pump should provide a minimum of 20 gal/minute/100 gal tank size circulated through a correctly positioned sparger tube or jets.

For preplant incorporated or preemergence application, use flat fan nozzle tips. For postemergence band application, use drop extraction tubes off-center nozzle tips. For postemergence broadcast application, use flat fan or off-center nozzle tips. Use flood nozzle tips only in AZ and CA for lay-by treatment in cotton at least 18 inches tall.

Use screens to protect the pump and to prevent nozzles from clogging. Screens

placed on the suction side of the pump should be 16-mesh or coarser. Do not place a screen in the recirculation line. Use 50-mesh or coarser screens between the pump and boom, and where required, at the nozzles. Check nozzle manufacturer's recommendations.

For band applications, calculate amount to be applied per acre using the formula given in the label.

Aerial application (Cotton and pigeon peas only): Use aerial application only where broadcast applications are specified. Use a minimum of 5 gal of spray mixture per acre. Avoid applications under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

Avoid application to humans or animals. Flagmen and loaders should avoid inhalation of spray mist and prolonged contact with skin.

To assure that spray will be controllable within the target area when used according to label directions, make applications at a maximum height of 10 ft above vegetation, using low-drift nozzles at a maximum pressure of 40 psi, and restrict application to periods when wind speed does not exceed 10 mph. To assure that spray will not adversely affect adjacent sensitive non-target plants, apply Caparol 4L by aircraft at a minimum upwind distance of 400 ft from sensitive plants.

## SPRAY EQUIPMENT

### Spray Drift Management

- Avoiding spray drift at the application site is the responsibility of the applicator and the grower. The interaction of many equipment- and weather-related factors determine the potential for spray drift. The applicator and the grower are responsible for considering all these factors when making decisions.
- Apply only as a medium or coarser spray (ASABE standard 572.1) or a volume mean diameter of 300 microns or greater for spinning atomizer nozzles.
- Apply only when the wind speed is 2-10 mph at the application site.

Additional requirements for ground boom application:

- Do not apply with a nozzle height greater than 4 feet above the crop canopy.

Additional requirements for aerial applications:

- The boom length must not exceed 75% of the wingspan or 90% of the rotor blade

diameter.

- Release spray at the lowest height consistent with efficacy and flight safety. Do not release spray at a height greater than 10 feet above the crop canopy.
- When applications are made with a crosswind, the swath will be displaced downwind. The applicator must compensate for this displacement at the downwind edge of the application area by adjusting the path of the aircraft upwind.
- Nozzles must always point backward parallel with air stream and never be pointed downward more than 45 degrees.

### Sensitive Areas

Apply the pesticide 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).

### Seedbed Preparation

To ensure proper placement of Caparol 4L, seedbeds must be well prepared and as free as possible from trash and clods. A firm seedbed is best for obtaining effective weed control. Uniformity in height and width of seedbed is essential for proper postemergence applications of Caparol 4L. Beds should be low and flat. Take care to avoid planter marks. Wide planter packing wheels or rollers are recommended. Wheel furrows should be uniform in depth. Mount the sprayer so that it follows the same rows as the planter.

Refer to label for Tank Mix Information.

### Limitations, Restrictions, and Exceptions

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### Direct-seeded Crop

Apply Caparol 4L at rates given below in a minimum of 20 gal of water per acre. Within the rate ranges given, use the lower rates on coarse-textured soils and soils low in organic matter; use the higher specified rates on fine-textured soils and soils high in organic matter.

Preemergence: Broadcast 2.4-3.2 pt/A at planting or shortly after planting before

crop emerges.

Precautions: Injury to direct-seeded crop may occur if: (1) Application is made to a crop under water stress. (2) Postemergence treatments of Caparol 4L are applied with other pesticides. Apply only after foliar applications of other pesticides are dry. (3) Application is made within 2 weeks after an application of a herbicidal oil, such as “carrot” oil.

Restrictions: (1) Do not apply to the crop within 40 days of harvest. (2) Do not make more than 1 application per year to seedbeds. (3) Make either one preemergence or one postemergence application (not both) per crop. (4) Do not use on sand or loamy sand. (5) Do not apply Caparol 4L Herbicide to more than 2 celery, Chinese celery or Florence fennel crop cycles on the same acre per year.

#### APPLICATION THROUGH IRRIGATION SYSTEMS – CHEMIGATION AND PREEMERGENCE OR POSTEMERGENCE APPLICATION TO CELERY, CHINESE CELERY, CELERIAC OR FLORENCE FENNEL ONLY

Apply this product only through sprinkler, including center pivot, lateral move, end tow, side (wheel) roll, traveler, big gun, solid set irrigation systems. Do not apply this product through any other type of irrigation system.

Crop injury, lack of effectiveness, or illegal residues in the crop can result from non-uniform distribution of treated water.

If you have questions about calibration, you should contact State Extension Service specialists, equipment manufacturers, or other experts.

Do not connect an irrigation system (including greenhouse systems) used for pesticide application to a public water system unless the pesticide label prescribed safety devices for public water systems are in place.

A person knowledgeable of the chemigation system and responsible for its operation or under the supervision of the responsible person, shall shut down and make necessary adjustments should the need arise.

Chemigation Systems Connected to Public Water Systems: If the chemigation system is connected to a public water supply, the following conditions must also be met:

- Public water systems means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year.
- Chemigation systems connected to public water systems must contain a functional reduced-pressure zone, backflow preventer (RPZ), or the functional equivalent in the water supply line upstream from a point of pesticide introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to pesticide introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe.
- The pesticide injection pipeline must contain a functional, normally closed, solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shutdown.
- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Upon completion of herbicide application, remove scale, pesticide residues, and other foreign matter from the supply tank and entire injector system. Flush thoroughly with clean water.

Sprinkler Chemigation: To apply a pesticide using sprinkler chemigation, the chemigation system must meet the following specifications:

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



solenoid-operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is either automatically or manually shut down.

- The system must contain functional interlocking controls to automatically shut off the pesticide injection pump when the water pump motor stops.
- The irrigation line or water pump must include a functional pressure switch, which will stop the water pump motor when the water pressure decreases to the point where pesticide distribution is adversely affected.
- Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively designed and constructed of materials that are compatible with pesticides and capable of being fitted with a system interlock.
- Do not apply when wind speed favors drift beyond the area intended for treatment.

#### Application Procedures

- Mix in clean supply tank the specified amount of this product for acreage to be covered and needed quantity of water.
- This product should not be tank mixed with other pesticides, surfactants, or fertilizers unless prior use has shown the combination non-injurious under your conditions of use.
- It is the pesticide user's responsibility to ensure that all products in the listed mixtures are registered for the intended use. Users must follow the most restrictive directions for use and precautionary statements of each product in the tank mixture.
- Provide constant mechanical agitation in supply tank to keep this product suspended throughout application operations.
- On all crops, use sufficient gallonage of water to obtain thorough and uniform coverage, but not cause runoff or excessive leaching. This will vary depending on equipment, pest problem, and stage of crop growth. Application of more or less than optimal quantity of water may result in decreased chemical performance, crop injury, or illegal residues.
- Meter this product into the irrigation water uniformly during the period of operation.
- Do not overlap application. Follow specified label rates, application timing, and other directions and precautions for crop being treated.
- If sprinkler irrigation is intended to replace incorporation, use sufficient water to activate herbicide. The exact amount is highly dependent on moisture conditions

and soil type, however 1/4 to 1/2 acre inch may be appropriate as a starting point. Pre-irrigation may be beneficial under dry conditions. Additional irrigation may be needed following application if rainfall is scant.

Method

[Broadcast/Foliar Ground](#)

Pre-Harvest Interval

40 days

Rates

[field\\_rates 0](#)

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Restricted Entry Interval

24 hours

Exception: If the product is soilinjected or soil-incorporated, the Worker Protection Standard, under certain circumstances, allows workers to enter the treated area if there will be no contact with anything that has been treated.

Soils

[Coarse](#)

[Fine](#)

Timings

[At-Plant](#)

[Preemergence \(Crop\)](#)

[Postplant](#)