

Permanent Label
(Booklet)
(MASTER)

Princep® Caliber 90®

HERBICIDE

For weed control in certain crops and ornamental plantings

Active Ingredient:

Simazine: 2-chloro-4,6-bis(ethylamino)-s-triazine

Simazine: 2-chloro-4,6-bis(ethylamino)-s-triazine	90.0%
Other Ingredients:	10.0%
Total:	100.0%

EPA Reg. No. 100-603

EPA Est. 100-LA-1

Princep Caliber 90 is a water-dispersible granule.

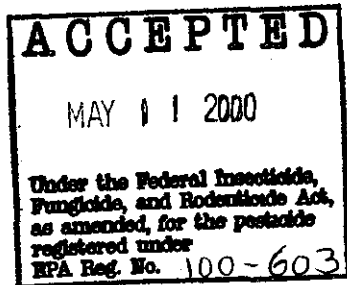
KEEP OUT OF REACH OF CHILDREN.

CAUTION

See additional precautionary statements and directions for use inside booklet.

NCP 603A-L48P 0400

[QUARK\PRINCEP CALIBER\N-PRNC90-BKLT-MSTR-B] ccg - 4/7/00



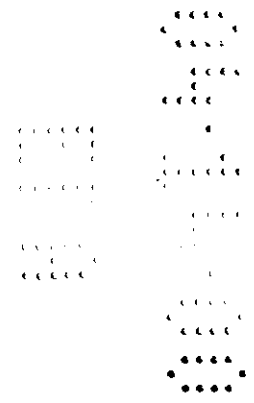
DIRECTIONS FOR USE AND CONDITIONS OF SALE AND WARRANTY

IMPORTANT: Read the entire **Directions for Use** and the **Conditions of Sale and Warranty** before using this product. If terms are not acceptable, return the unopened product container at once.

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 should be followed carefully. However, it is impossible to eliminate all risks inherently associated with 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 the manner of use or application all of which are beyond the control of Novartis Crop Protection, Inc. or the Seller. All such risks shall be assumed by the Buyer.

Novartis warrants that this product conforms to the chemical description on the label and is reasonably fit for the purposes referred to in the **Directions for Use** subject to the inherent risks referred to above. **Novartis makes no other express or implied warranty of Fitness or Merchantability or any other express or implied warranty. In no case shall Novartis or the Seller be liable for consequential, special, or indirect damages resulting from the use or handling of this product.** Novartis and the Seller offer this product, and the Buyer and user accept it, subject to the foregoing **Conditions of Sale and Warranty**, which may be varied only by agreement in writing signed by a duly authorized representative of Novartis.



DIRECTIONS FOR USE

It is a violation of federal law to use this product in a manner inconsistent with its labeling.

Do not apply this product in a way that will contact workers or other persons, either directly or through drift. Only protected handlers may be in the area during application. For any requirements specific to your State or Tribe, consult the agency responsible for pesticide regulation.

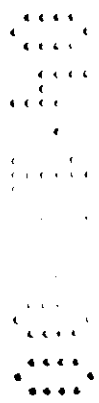
AGRICULTURAL USE REQUIREMENTS

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 interval. The requirements in this box only apply to uses of this product that are covered by the Worker Protection Standard.

Do not enter or allow worker entry into treated areas during the restricted entry interval (REI) of 12 hours. Exception: If the product is soil-injected 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.

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
- Waterproof gloves
- Shoes plus socks



NON-AGRICULTURAL USE REQUIREMENTS

The requirements in this box apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural pesticides (40 CFR Part 170). The WPS applies when this product is used to produce agricultural plants on farms, forests, nurseries, or greenhouses.

Do not enter treated areas without protective clothing until sprays have dried.

FAILURE TO FOLLOW THE DIRECTIONS FOR USE AND PRECAUTIONS ON THIS LABEL MAY RESULT IN CROP INJURY, POOR WEED CONTROL, AND/OR ILLEGAL RESIDUES.

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

This product is not for use in formulating end-use products for aquatic use.

GENERAL INFORMATION

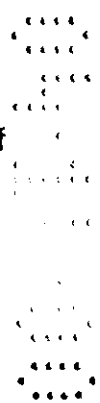
Apply this herbicide before weeds emerge or after removal of weed growth. Princep Caliber 90 controls a wide variety of annual broadleaf and grass weeds when used at selective rates in agricultural crops and ornamental plantings.

Where a range of application rates is given, use the low rate on coarse-textured soil and soil lower in organic matter; use the high rate on fine-textured soil and soil higher in organic matter.

To avoid spray drift, do not apply under windy conditions. Avoid spray overlap, as crop injury may result.

Since this product enters weeds mainly through their roots, moisture is needed to move it into the root zone. Very dry soil conditions and lack of rainfall following application may necessitate shallow cultivation.

This product is noncorrosive to equipment, nonflammable, and has low electrical conductivity.



Annual Weeds Controlled

- | | |
|------------------------------------|---------------------------------------|
| alyssum | common lambsquarters |
| annual bluegrass | nightshade |
| annual morningglory | pepperweed |
| annual ryegrass | pigweed |
| barnyardgrass (watergrass) | pineappleweed |
| burclover | prickly lettuce |
| carelessweed | common purslane |
| carpetweed | ragweed |
| common chickweed | rattail fescue |
| crabgrass (<i>Digitaria</i> spp.) | redmaids |
| downy brome (cheatgrass) | Russian thistle |
| fall panicum | shepherdspurse |
| fiddleneck | signalgrass (<i>Brachiaria</i> spp.) |
| filaree | silver hairgrass |
| fireweed | smartweed |
| fivehook bassia | spanishneedles |
| Flora's paintbrush | speedwell |
| Florida pusley | tansymustard |
| foxtails | wild mustard |
| goosegrass | wild oats |
| groundsel | witchgrass |
| henbit | yellow flower pepperweed |
| junglerice | |
| knawel (German moss) | |

Following many years of continuous use of this product and chemically related products, biotypes of some of the weeds listed on this label have been reported which cannot be effectively controlled by this and related herbicides. Where this is known or suspected, and weeds controlled by this product are expected to be present along with resistant biotypes, we recommend the use of this product in registered combinations or in sequence with other registered herbicides which are not triazines. If only resistant biotypes are expected to be present, use a registered non-triazine herbicide. Consult with your State Agricultural Extension Service for specific recommendations.

Application Procedures

Ground application: Use conventional ground sprayers equipped with nozzles that provide accurate and uniform application. Be certain that nozzles are uniformly spaced and the same size. Calibrate sprayer

before use and recalibrate at the start of each season and when changing carriers. Unless otherwise specified, use a minimum of 20 gals. of spray mixture per acre.

Use a pump with capacity to: (1) maintain 35-40 psi at nozzles, (2) provide sufficient agitation in tank to keep mixture in suspension, and (3) to provide a minimum of 20% bypass at all times. Use centrifugal pumps which provide propeller shear action for dispersing and mixing this product. The pump should provide a minimum of 10 gals./minute/100 gal. tank size circulated through a correctly positioned sparger tube or jets.

Use screens to protect the pump and to prevent nozzles from clogging. Screens placed on suction side of 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 as follows:

$$\frac{\text{band width in inches}}{\text{row width in inches}} \times \text{broadcast rate per acre} = \text{amount needed per acre of field}$$

Aerial application: Use aerial application only where specified in the use directions. Apply in a minimum of 1 gal. of water for each 1-1.5 lbs. of herbicide applied per acre. Avoid application under conditions where uniform coverage cannot be obtained or where excessive spray drift may occur.

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

Mixing procedures – All Uses: (1) Be sure sprayer is clean and not contaminated with any other materials, as crop injury or sprayer clogging may result. (2) Fill tank 1/4 full with clean water, nitrogen solution, or complete fluid fertilizer. (3) Start agitation. (4) Be certain that the agitation system is working properly and creates a rippling or rolling action on the liquid surface. (5) Pour product directly from bag into tank. (6) Continue filling tank until 90% full. Increase agitation if necessary to maintain surface action. (7) Add tank-mix herbicide(s) after this product is thoroughly suspended. (8) Finish filling tank. Maintain agitation to avoid separation of materials. (9) Empty tank as completely as possible before refilling to prevent buildup of emulsifiable concentrate residue from possible tank-mix herbicides. (10) If an emulsifiable concentrate film starts to build up in tank, drain it and clean with strong detergent solution or solvent. (11) Clean sprayer thoroughly immediately after use by flushing system with water containing a detergent.

Compatibility test: To determine the tank-mix compatibility of Princep Caliber 90 with liquid fertilizer, crop oil, spreaders, or recommended pesticides, use this test method. Nitrogen solutions or complete fluid fertilizers may replace all or part of the water in the spray in corn. Since liquid fertilizers can vary, even within the same analysis, check compatibility each time before use. Be especially careful when using **complete** suspension or fluid fertilizers, as serious compatibility problems are more apt to occur. Commercial application equipment may improve compatibility in some instances. Check compatibility using this procedure:

1. Add 1 pt. of fertilizer to each of 2 one-qt. glass jars with tight lids.
2. To **one** of the jars, add 1/4 tsp. of a compatibility agent approved for this use (1/4 tsp. is equivalent to 2 pts./100 gals. spray). Cap and shake until mixed. Examples of compatibility agents include Compex® and Unite®.
3. To **both** jars, add the appropriate amount of herbicide(s). If more than one herbicide is used, add them separately with dry herbicides first, flowables next, and emulsifiable concentrates last. After each addition, cap and shake until thoroughly mixed. The appropriate amount of herbicides for this test follows (assuming a spray volume of 25 gals./A):

Dry herbicides: For each pound per acre, add 1.5 teaspoons to each jar. Fluff up wettable powder products before measuring.

Liquid herbicides: For each pint per acre, add 0.5 teaspoon to each jar.

For a spray volume other than 25 gals./A, change the teaspoons added to each jar as follows:

$$\frac{25 \text{ gals.} \times \text{no. teaspoons given above}}{\text{desired gals. spray volume per acre}} = \text{teaspoons to add to each jar}$$

4. After adding all ingredients, put lids on and tighten. Shake jars vigorously one minute. Let the mixtures stand 15 minutes and then look for separation, large flakes, precipitates, grease, gels, medium to heavy oily film on the jar, or other signs of incompatibility. Determine if the compatibility agent is needed in the spray mixture by comparing the 2 jars. If either mixture separates, but can be remixed readily, the mixture probably can be sprayed as long as good agitation is used. If the mixtures are incompatible, test the following methods of improving compatibility: (A) slurry the dry herbicide(s) in water before addition, or (B) add 1/2 of the compatibility agent to the fertilizer and the other 1/2 to the emulsifiable concentrate or flowable herbicide before addition to the mixture. If still incompatible, do not use the materials mixed in the same spray tank.

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Perennial Crop Replanting

If replanting perennial crops, do not apply Princep Caliber 90 in the year preceding planting these crops, unless otherwise stated on this label, or crop injury may occur.

FRUIT AND NUT CROPS

Apply the spray to the orchard or vineyard floor, avoiding contact with fruit, foliage, or stems. Recommended rates are based on broadcast treatment. For band applications or spot applications around fruit or nut trees, reduce the broadcast rate of this product and water per acre in proportion to the area actually sprayed.

Precautions (All fruit and nut crops): To avoid crop injury, (1) Apply only to orchards or groves where trees have been established 12 months or more, unless specified differently, (2) Make only one application per year, except as noted otherwise, (3) Do not use on gravelly, sand, or loamy sand soil, (4) Immediately following application, limit overhead sprinkler irrigation to 1/2 inch.

Almonds, Peaches, and Nectarines (CA only)

Apply 1.1-2.2 lbs. per treated acre in a 2 to 4-ft. band on each side of the tree row. Apply before weeds emerge in late fall or early winter. Weeds controlled by 1.1 lbs. include burclover, common chickweed, wild mustard, and shepherdspurse. Apply only once per year.

Precautions: To avoid crop injury, (1) Do not treat trees established in the grove less than 3 years. (2) Do not treat the Mission (TX) variety of almonds. (3) Do not apply to almond trees propagated on plum rootstocks. (4) Do not replant almonds, peaches, or nectarines in treated soil for 12 months after treatment. (5) Do not apply to soil with less than 1% organic matter. (6) Do not treat areas where water will accumulate.

Apples, Pears, and Sour Cherries

Apply 2.2-4.4 lbs./A.

Avocados

CA and FL only: Apply 2.2-4.4 lbs./A after final preparation of grove.

Blueberries and Caneberries (blackberries, boysenberries, loganberries, raspberries)

Apply 2.2-4.4 lbs./A in the spring or apply a split application of 2.2 lbs./A in the spring plus 2.2 lbs./A in the fall. Apply in a minimum of 40 gals. of water per acre.

On plantings less than 6 months old, use 1/2 the above rate.

To control quackgrass, apply 4.4 lbs./A in the fall or split the application applying 2.2 lbs./A in the fall plus 2.2 lbs./A in the spring, when quackgrass is actively growing.

Note: Do not apply when fruit is present, or illegal residues may result.

Cranberries

MA: Apply up to 4.4 lbs./A, either before spring growth begins or in the fall after harvest.

Other areas: Apply 2.2 lbs./A before spring growth begins.

Filberts

Apply 2.2-4.4 lbs./A in the fall or apply a split application of 2.2 lbs./A in the fall plus 2.2 lbs./A in the spring.

Precaution: If trees are planted on a hillside, excessive soil erosion may result from the elimination of weeds.

Note: Do not apply when nuts are on the ground during the harvest period, or illegal residues may result.

Grapes

Apply 2.2-5.3 lbs./A any time between harvest and early spring.

Precaution: Do not use in vineyards established less than 3 years, or crop injury may occur.

Grapefruit, Lemons, and Oranges

AZ (Lemons and Oranges only): Apply a split application of 1.75 lbs./A in the spring plus 1.75 lbs./A in the fall.

CA (Grapefruit, Lemons, and Oranges): Apply 2.2-4.4 lbs./A in a single application; or apply 2.2 lbs./A in the fall and 2.2 lbs./A in the spring.

Precaution: Do not use in the Imperial, Coachella, or Palo Verde valleys,

or crop injury may occur.

FL (Grapefruit and Oranges only): Apply 4.4 lbs. of Princep Caliber 90 to weed-free soil during the spring and/or fall to control weeds expected to emerge during these periods. Apply prior to emergence of weeds or if weeds have emerged, apply in tank mixture with a contact herbicide. Use caution to keep the treatment off the foliage, fruit, or trunk of citrus trees.

For control of difficult species, such as balsamapple and spanishneedles, and partial control of honeyvine milkweed, apply 8.8 lbs. of Princep Caliber 90 as a single application in the spring as a 50% band application to the grove acre. Apply in the spring growing season between January and April. Do not make a fall Princep Caliber 90 application if this treatment was used in the spring. When emerged weeds are present, apply Princep Caliber 90 in tank mixture with a recommended contact herbicide. Follow all directions, precautions, limitations, etc. on the tank mix products.

TX (Grapefruit and Oranges only): Apply 4.4-5.3 lbs./A.

Precautions (All areas): To avoid crop injury, (1) Do not use in nurseries. (2) Do not apply to bedded grapefruit, lemons, or oranges (except for FL grapefruit and oranges). (3) Do not apply to trees under stress from freeze damage for one year after the freeze. (4) In FL, do not exceed 8.8 lbs. of Princep Caliber 90 during any one growing season.

Macadamia Nuts

Apply 2.2-4.4 lbs. in 50 gals. of water per acre before harvest and just prior to weed emergence. Repeat application as necessary.

Note: Do not apply when nuts are on the ground during the harvest period, as illegal residues may result.

Olives

Apply 2.2-4.4 lbs./A following grove preparation in the fall. Repeat annually in midwinter.

Peaches, Plums, and Sweet Cherries

Apply 1.75-4.4 lbs./A. Apply in late fall to early spring prior to weed emergence.

*Precautions: To avoid crop injury, (1) Peaches: use only in AR, LA, MO, OK, TX, and states east of the Mississippi River. For CA, see specific directions in the **Almonds, Peaches, and Nectarines (CA only)** section. (2) Plums and sweet cherries: use only in MO and states east of the*

Mississippi River, except TN.

Pecans

Apply 2.2-4.4 lbs./A before weeds emerge in the spring.

Precautions: To avoid crop injury, (1) Do not use west of the Pecos River in TX or in AZ, CA, or NM. (2) Do not make applications to transplanted trees that have been established less than 2 years in the grove.

Note: Do not apply when nuts are on the ground, or illegal residues may result. Do not allow animals to graze treated areas.

Strawberries

OR and WA: For control of chickweed, groundsel, mustard, and shepherdspurse, apply broadcast 1.1 lb./A. In fields where overhead irrigation is used to activate this product, apply after harvest at time of bed renovation. In fields where overhead irrigation is not available, apply during early October through November.

Precautions: To avoid crop injury, (1) Make only one application per growing season. (2) Do not apply within 4 months after transplanting.

Walnuts

Apply 2.2-4.4 lbs./A. Leveling and furrowing operations after application will lessen effectiveness of weed control.

Note: Do not apply when nuts are on the ground, or illegal residues may result.

Tank Mixture with Bromacil 80W for Grapefruit and Oranges (FL Only)

Use in grapefruit and oranges in FL for control of balsamapple, black nightshade, carpetweed, crabgrass, cudweed, dayweed, Florida pusley, horseweed, pepperweed, pigweed, poorjoe, ragweed, rattlebox, spanishneedles, and sandbur, and for partial control of bermudagrass, bahiagrass, pangolagrass, paragrass, and torpedograss. Apply 4.4 lbs. of Princep Caliber 90 plus 3-4 lbs. of Bromacil 80W per acre beneath trees in a minimum of 40 gals. of water per acre before or soon after weed growth begins. Use caution to keep the spray off the foliage, fruit, or trunk of citrus trees. Temporary yellowing of citrus leaves may occur following treatment.

Follow use and precautionary directions on the Bromacil label.

Precautions: To avoid crop injury, (1) Do not use in nurseries or where

trees are under stress from freeze damage for one year after the freeze. (2) Do not use on soil with less than 1% organic matter or on poorly drained soil. (3) Do not treat trees planted in irrigation furrows. (4) Do not treat diseased trees, such as those with foot rot. (5) Do not use in groves interplanted with other trees or desirable plants, nor in home grapefruit or orange plantings, or in areas where roots of other valuable plants or trees may extend. (6) Treated areas may be planted to citrus trees one year after application. (7) Do not rotate to other crops within 2 years after application.

Note: Apply only once per year and avoid contact with foliage and fruit with spray or mist, or illegal residues may result.

Tank Mixture with Gramoxone® Extra

This tank mix is effective in the following fruit and nut crops for kill of existing vegetation and for residual control of the annual broadleaf and grass weeds claimed for this product applied alone. This combination is also effective for top kill and suppression of perennial weeds. In FL, this mixture may be applied in Spring or Fall to emerged weeds.

Use this tank mix on these crops:

- | | |
|---|----------------------|
| almonds (CA only) | olives |
| apples | oranges ² |
| avocados (CA and FL ¹ only) | peaches ³ |
| cherries (sour and sweet ⁴) | pears |
| filberts | pecans |
| grapefruit (CA and TX only) | plums ⁴ |
| grapes | walnuts |
| lemons (AZ and CA only) | |
| macadamia nuts | |

Apply the rate given under the appropriate crop on this label plus 1.5-2.5 qts. of Gramoxone Extra* in 50-200 gals. (30-50 gals. for pecans) of water per acre to the orchard floor, avoiding contact with fruit, foliage, or stems. Add a nonionic surfactant, such as X- 77®, at 0.5 pt./100 gals. of spray. Apply when weeds are succulent and new growth is 1-6 inches tall. For mature woody weeds or difficult to control perennial weeds, re-treat or spot treat with Gramoxone Extra if regrowth occurs.

Add this product to the spray tank first (refer to **Mixing procedures** section of this label), then add Gramoxone Extra, and add the surfactant last. Provide constant agitation during mixing and application to keep the mixture in suspension.

Precautions: To avoid crop injury, (1) Apply the tank mix only once per year. (2) Use a shield for young trees or vines.

Refer to the labels of both products for further directions, specific weeds controlled, and precautions and limitations on each crop.

¹In avocados in FL, this tank mix also controls balsamapple vine, rattail amaranth, and at the higher rate of each herbicide, it suppresses coral vine.

²In oranges in FL, apply 4.4 lbs. of this product per acre per application during spring or fall. Do not exceed 8.8 lbs. of Princep Caliber 90 during any one growing season.

³Limited to AR, CA, LA, MO, OK, TX, and states east of the Mississippi River. As appropriate, refer to the sections **Almonds, Peaches, and Nectarines (CA only)** or **Peaches, Plums, and Sweet Cherries** for rate of this product and other information.

⁴Limited to MO and states east of the Mississippi River, except TN.

*Based on a product containing 1.5 lbs. of Gramoxone Extra cation per gallon.

Tank Mixture with Roundup®

This tank mixture is effective in grape vineyards and in the following bearing or nonbearing tree crops for control of existing vegetation and for residual control of the annual broadleaf and grass weeds claimed for this product applied alone. This combination is also effective for partial control of perennial weeds contacted by the spray mixture during application. Use this tank mixture on these crops:

- | | |
|---|-----------------------------|
| almonds** (CA only) | macadamia nuts** |
| apples* | oranges* (AZ,CA,FL, and TX) |
| avocados* (CA and FL only) | peaches* ¹ |
| cherries (sour and sweet ²) | pears* |
| filberts** | pecans** |
| grapefruit (CA,FL, and TX) | plums* ² |
| grapes* | walnuts** |
| lemons* (AZ and CA) | |

Use the appropriate rate given elsewhere on this label for Princep Caliber 90 applied alone to the crop being treated. Add to the spray tank 1-5 qts. of Roundup per acre depending on weeds present and their growth

stage. Also add an agriculturally approved nonionic surfactant at 0.5% by volume of spray solution. Apply the mixture in 10-40 gals. of water per acre as a postemergence spray to the weeds at the appropriate weed growth stage given on the Roundup label.

Add Princep Caliber 90 to the spray tank first, then add Roundup. Provide constant agitation during mixing and application to keep the mixture in suspension. Refer to the **Application Procedures** section of this label for further directions.

Precaution: To avoid crop injury, take extreme care to avoid contact of herbicide solution, spray, drift, or mist with foliage or green bark of trunk, branches, suckers, fruit, or other parts of trees or vines. Observe precautions on both the Princep Caliber 90 and Roundup labels for each crop involved.

Refer to the labels of both herbicides for further directions, specific weeds controlled, precautions, and limitations on each crop.

*Allow a minimum of 14 days between last application and harvest.

**Allow a minimum of 21 days between last application and harvest of these crops.

¹Limited to AR, CA, LA, MO, OK, TX, and states east of the Mississippi River. For CA, see specific directions in the **Almonds, Peaches, and Nectarines (CA only)** section.

²Plums and sweet cherries: limited to MO and states east of the Mississippi River, except TN.

Tank Mixture with Solicam®

For improved control of such weeds as clover, cutleaf eveningprimrose, dandelion, henbit, horseweed or marestalk, lambsquarters, and puncturevine, apply Princep Caliber 90 in tank mixture with Solicam DF on these crops:

- oranges
- grapefruit
- lemons

Apply 4.4 lbs. per acre of Princep Caliber 90 plus 4-5 lbs. of Solicam DF Herbicide (78.6% active ingredient) in 20-100 gals. of water per acre. Princep Caliber 90 + Solicam may be applied in tank mixture with Gramoxone Extra or Roundup.

Follow the labeled directions and restrictions of use on labels of the herbicides used in mixtures with Princep Caliber 90.

Precaution: Keep Princep Caliber 90 + Solicam mixtures from contacting foliage, fruits, and stems of citrus trees during spraying.

Tank Mixture with Surflan®

Use this tank mix in the following crops for preemergence control of all weeds claimed on both labels:

- | | |
|-------------|-----------------|
| almonds | lemons |
| apples | oranges |
| avocados | peaches |
| caneberries | pears |
| cherries | pecans |
| filberts | plums |
| grapefruit | English walnuts |
| grapes | |

Apply the Princep Caliber 90 rate given under the appropriate crop on this label plus 2.67-5.33 lbs. of Surflan 75W or 2-4 qts. of Surflan A.S. in 20-40 gals. of water per acre. Refer to the Surflan 75W or Surflan A.S. label for complete tank mix directions. Observe all precautions and limitations on the Princep Caliber 90 and Surflan labels.

FIELD AND FORAGE CROPS

Corn

Nitrogen solutions or complete fluid fertilizers may replace all or part of the water as a carrier in the spray. Determine the physical compatibility of this product with fertilizer before use. Refer to the **General Information** section of this label for a compatibility test. Do not apply after corn has emerged as there is danger of liquid fertilizers causing crop injury.

Preemergence: Apply before weeds and corn emerge. Use the appropriate rate in the following table.

Preplant: Apply in the spring after plowing at the appropriate rate in the following table. Apply before, during, or after final seedbed preparation. If soil is tilled or worked after application, avoid deep incorporation. Best results will be obtained when this product is applied within 2 weeks before planting. Under dry weather conditions, preplant applications may give better weed control. If weeds develop, particularly under relatively dry conditions, a shallow cultivation will generally result in better weed control.

Soil Texture	Broadcast Rate Per Acre*
Coarse-textured soil Sand, silt, and loam that is low in organic matter	2.2 lbs.
Medium-textured soil Soil containing a moderate amounts of clay and organic matter	2.6 lbs.
Fine-textured soil Loam that is high in organic matter and clay (including dark prairie soils of Corn Belt)	3.3 lbs.
Organic soil Peat, muck, and high-organic clay	4.4 lbs.

*For calculation of band treatment rate, see the **General Information** section.

To control quackgrass: Apply 3.3-4.4 lbs./A in the fall. Plow 2-3 weeks later or if erosion is a problem, delay plowing until spring.

Winter Annual Broadleaf Control – Preemergence Fall Application

For preemergence control of winter annual weeds, such as common chickweed, henbit, shepherdspurse, tansymustard, wild mustard, annual bluegrass, downy brome, and others, broadcast 1.1 lbs./A of Princep Caliber 90 after harvest of the preceding crop and prior to weed emergence on land to be planted to corn the following year. A tillage operation may precede the application. Do not apply to frozen ground. If Princep Caliber 90 is used in the fall corn weed control program, do not exceed 2.2 lbs. of Princep Caliber 90 preemergence in the spring.

Precautions: (1) Do not apply more than 4.4 lbs./A to corn per year. (2) Do not rotate to any crop except corn until the following year, or injury may occur. (3) After harvest, plow and thoroughly till the soil in fall or spring to minimize possible injury to spring-seeded rotational crops, regardless of the rate used. (4) If more than 3.3 lbs./A is used (or equivalent rate in a band), a crop of untreated corn should precede the next rotational crop. (5) Do not apply preplant incorporated in corn in the High Plains and Intermountain areas of the West (including central and western KS, western NE, western OK, and the Panhandle of TX) where rainfall is sparse and erratic or where irrigation is required. (6) In the High Plains and Intermountain areas of the West where rainfall is sparse and

erratic or where irrigation is required, use this product to control weeds in corn only when corn is to follow corn or when a crop of untreated corn is to precede another rotational crop. (7) In western MN and eastern parts of the Dakotas, KS, and NE, do not plant soybeans following corn treated with this product if more than 2.2 lbs./A (or equivalent rate in a band) was applied, or injury may occur. (8) Injury may occur to soybeans planted in north-central and northwest IA, south-central and southwest MN, north-east NE, southeast SD, and other areas the year following application on soils having a calcareous surface layer. (9) Do not plant sugar beets, tobacco, vegetables (including dry beans), spring-seeded small grains, or small-seeded legumes and grasses the year after an application, or injury may occur.

Note: Do not graze treated areas, or illegal residues may result.

Tank Mixtures on Corn

AAtrex®: Use this product in a preplant or preemergence tank mixture with AAtrex Nine-O®, AAtrex 80W, or AAtrex 4L for control of many annual weeds, including carpetweed, crabgrass, fall panicum, foxtail, lambsquarters, morningglory, pigweed, ragweed, and velvetleaf.

Apply at the rates given below. Use the 1:1 ratio for most weeds and the 2:1 ratio for expected heavy infestations of crabgrass and fall panicum.

	Broadcast Rate Per Acre			
	1:1 Ratio		2:1 Ratio	
Soil Texture	Princep Caliber 90	AAtrex 80W*	Princep Caliber 90	AAtrex 80W*
Sand, loamy sand, sandy loam	1.1 lbs.	1.25 lbs.	1.5 lbs.	0.83 lb.
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with low organic matter	1.33 lbs.	1.5 lbs.	1.8 lbs.	1 lb.
Loam, silt loam, silt, clay loam, sandy clay loam, silty clay loam, sandy clay, or silty clay with medium to high organic matter, and clay (including dark prairie soils of the Corn Belt)	1.6 lbs.	1.8 lbs.	2.1 lbs.	1.2 lbs.

*When using AAtrex 4L or AAtrex Nine-O, use equivalent rates. One lb. of AAtrex 80W equals 0.8 qt. of AAtrex 4L or 0.9 lb. of AAtrex Nine-O.

Refer to the AAtrex label for complete directions, and use 0.9 lb. of this product for each pound of Princep 80W. Also refer to the AAtrex label and the **Corn** section of this label for precautions and limitations.

Eradicane®: Use in a preplant incorporated tank mixture for control of all weeds claimed on both the Princep Caliber 90 and Eradicane labels, including partial control (suppression) of shattercane (wild cane). Fluid fertilizer may replace all or part of the water in the spray. Check the physical compatibility of mixture with fertilizer before use. Refer to the **General Information** section of this label for a compatibility test procedure. Use a minimum of 20 gals. of spray volume per acre. Refer to the Eradicane label for incorporation directions. Use the higher rate of Princep Caliber 90 on fine-textured soil and where heavy broadleaf infestations are expected. Use the higher rate of Eradicane for heavy nutsedge and bermudagrass infestations. For partial control (suppression) of shattercane, broadcast and incorporate **immediately** before planting 1.1-2.2 lbs. of this product plus 7.33 pts. of Eradicane 6.7E (or 8 pts. of Eradicane Extra) per acre. For control of the other weeds claimed on both labels, broadcast and incorporate 1.1-3.3 lbs. of this product plus 4.75-7.33 pts. of Eradicane 6.7E (or 5.33-8 pts. of Eradicane Extra) per acre. Observe all precautions and limitations on the Princep Caliber 90 and Eradicane labels.

Gramoxone Extra: Use in a tank mixture where corn will be planted directly in a cover crop, established sod, or previous crop residues. This combination controls existing vegetation and provides residual control of the annual broadleaf and grass weeds listed under **General Information**.

Add this product to the spray tank, mix thoroughly with water, and then add Gramoxone Extra and a nonionic surfactant. Provide constant agitation during mixing and application to keep the mixture in suspension.

Apply 2.2-3.3 lbs. of this product plus 1.5-2.5 pts. of Gramoxone Extra* in 20-60 gals. of water per acre as a broadcast spray either before or after planting, but before corn emerges. Add a nonionic surfactant at the rate of 0.5 pt. per 100 gals. of spray volume.

For further information, see general information, caution and warning statements, precautions, and notes on the Princep Caliber 90 and the Gramoxone Extra labels.

*Based on a product containing 1.5 lbs. of Gramoxone Extra cation per gallon.

Sutan+®: Use in a preplant incorporated tank mixture for control of all weeds claimed on both the Princep Caliber 90 and Sutan+ labels, including partial control (suppression) of shattercane (wild cane). Fluid fertilizer may replace all or part of the water in the spray. Check the physical compatibility of mixture with fertilizer before use. Refer to the **General**

Information section of this label for a compatibility test procedure. Use a minimum of 20 gals. of spray volume per acre. Refer to the Sutan+ label for incorporation directions. Use the higher rate of Princep Caliber 90 on fine-textured soil and where heavy broadleaf infestations are expected. For partial control (suppression) of shattercane, broadcast and incorporate **immediately** before planting 1.1-2.2 lbs. of this product plus 7.33 pts. of Sutan+ 6.7E per acre. For control of the other weeds claimed on both labels, broadcast and incorporate 1.1-3.3 lbs. of this product plus 4.75 pts. of Sutan+ 6.7E per acre. Observe all precautions and limitations on the Princep Caliber 90 and Sutan+ labels.

NURSERIES, CHRISTMAS TREE PLANTINGS, AND SHELTERBELTS

Nurseries (see list below)

Apply 2.2-3.4 lbs. in at least 25 gals. of water per acre in fall or spring.

Precaution: To avoid plant injury, do not apply for at least one year after transplanting.

Christmas Tree Plantings and Shelterbelts (see list below)

Remove weed growth before application. Apply 2.2-4.4 lbs. in at least 25 gals. of water per acre after transplanting. Use the same rate for annual maintenance applications.

For quackgrass control, apply 4.4 lbs./A in the fall or apply a split application of 2.2 lbs./A in the fall plus 2.2 lbs./A in early spring, after quackgrass begins growth.

Precautions: To avoid tree injury, (1) Do not use on seedbeds or cutting beds. (2) In CA, OR, and WA do not apply to Christmas trees or shelterbelts sooner than one year after transplanting. In other areas, do not apply to Christmas trees or shelterbelt transplants less than 2 years of age. (3) Do not use until soil is firmly settled around roots. (4) Do not apply more than once a year, except as directed for quackgrass control.

Apply to these species of trees and shrubs, as recommended above:

Conifers

Deciduous Trees and Woody Ornamentals

- arborvitae
- Austrian pine
- Bishop pine*
- knobcone pine*
- lodgepole pine (shore pine)
- Monterey pine*
- Mugho pine
- red pine (Norway pine)
- Scotch pine
- white pine
- blue spruce
- Norway spruce
- red spruce
- white spruce
- balsam fir
- Douglas fir
- Fraser fir
- white fir
- hemlock
- juniper
- red cedar
- white cedar
- yew (*Taxus* spp.)

- American elm
- Siberian elm
- barberry
- boxelder
- bush honeysuckle
- caragana
- cotoneaster
- dogwood
- eucalyptus
- holly (*Ilex* spp.) (max. 3.5 lbs./A)
- honey locust
- Oregon grape (*Mahonia* spp.)
- Pieris* spp. (max. 3.5 lbs./A)
- red oak
- Russian olive
- oleander*
- palm (2.2 lbs./A)*
- bottle brush*
- carob*

*For CA only

Pennant® Tank Mix: Princep Caliber 90 may be tank mixed with Pennant Liquid Herbicide to control weeds in containerized, field, and liner* grown ornamentals and commercial landscapes. See the Pennant label for ornamental species, weeds controlled with this tank mixture and for other information.

*Plants transplanted normally in rows in a nursery or similar area for further growth prior to transplanting to final growing place.

Surflan Tank Mix: On Christmas tree plantings, use this tank mix for preemergence control of weeds listed on this label and the Surflan 75W (or Surflan A.S.) label. Use on field grown conifer species listed on the labels for each herbicide plus grand fir, alpine fir, Engelmann spruce, black spruce, Colorado blue spruce, Coulter pine, giant redwood, and Veitchi fir. Broadcast the mixture as a directed spray to the soil surface or as an overtop spray, using 2.2-4.4 lbs. of Princep Caliber 90 and 2.67-5.33 lbs. of Surflan 75W (or 2-4 qts. of Surflan A.S.). Apply in sufficient water per acre to uniformly treat the area. Follow overtop sprays with

sprinkler irrigation to move the herbicide from leaf surfaces to the soil. Remove weed growth before application. Mix weed residues, prunings, or trash into the soil, or remove them before treatment. Soil should be in good tilth and free of clods at time of application. Shallow cultivation (1-2 inches) after treatment will not reduce weed control. Observe all precautions and limitations on the Princep Caliber 90 and Surflan labels.

Note: Length of weed control may be reduced when continuous wet soil conditions follow herbicide application.

Precautions: To avoid plant injury, (1) Do not use on seedbeds or on unrooted cuttings. (2) Do not use in greenhouses or other enclosed areas.

TURFGRASSES FOR SOD (FL ONLY)

St. Augustinegrass, Centipedegrass, and Zoysiagrass

Apply 2.2-4.4 lbs./A, according to soil texture as indicated below.

Muck or peat	4.4 lbs.	Old beds	within 2 days after lifting of sod
		New beds	3-4 days after sprigging or plugging
Sandy soil	2.2 lbs.	Old beds	within 2 days after lifting of sod
		New beds	7-10 days afer sprigging or plugging

If weeds regrow, apply an additional 2.2 lbs. on muck or peat, or 1.1 lbs. on sandy soil.

Precautions: To avoid crop injury, (1) Do not apply within 30 days prior to cutting or lifting. (2) Do not apply in combination with surfactants or other spray additives. (3) Use only on turfgrass reasonably free of infestations of insects, nematodes, and diseases. (4) On newly sprigged turfgrass, temporary slowing of growth may follow application.

TURFGRASS FOR FAIRWAYS, LAWNS, SOD PRODUCTION*, AND SIMILAR AREAS

*In states other than FL. For use on turfgrass for sod in FL, see **Turfgrasses for Sod (FL only)** section.

Bermudagrass, Centipedegrass, St. Augustinegrass, and Zoysiagrass

Apply Princep Caliber 90 after September 1 (after October 1 for annual bluegrass) before emergence of winter annual weeds. Princep Caliber 90 will control annual bluegrass, burclover, lawn burweed, common and mouseear chickweed, corn speedwell, henbit, hop clover, spurweed, and parsley-piert. Princep Caliber 90 will also control these weeds soon after emergence. For control of summer annual weeds listed in the **General Information** section of this label, apply Princep Caliber 90 in late winter before the weeds emerge. Apply in a minimum of 15 gals. of water per acre.

Irrigate with 1/2 inch of water if rainfall does not occur within 10 days after preemergence treatment.

Where annual bluegrass is the major weed, use 1.1 lbs. of Princep Caliber 90 per acre (0.4 oz. per 1,000 sq. ft.). Use 1.1-2.2 lbs./A (0.4-0.8 oz. per 1,000 sq. ft.) for control of other weeds. However, do not exceed 1.1 lbs./A per treatment on newly sprigged turfgrass or on hybrid bermudagrass such as Tiflawn, Tifway, and Ormond.

For control of summer annuals which emerge after the initial application, apply an additional 1.1 lbs./A at least 30 days after the initial application, but not after June 1. However, do not make more than 2 applications per year.

Precautions: On newly sprigged turfgrass, hybrid bermudagrass, nondormant bermudagrass or nondormant zoysiagrass, temporary slowing of growth and yellowing may occur following application. To avoid turf injury, (1) Use only on turfgrass reasonably free of infestations of insects, nematodes, and diseases. (2) Do not use on golf greens. (3) Do not use north of NC (except may be used in the VA Coastal Plains) or on soils with a pH above 7.8. (4) Do not use on muck or alkaline soils. (5) Do not apply over the rooting area of trees or ornamentals not listed on this label. (6) Do not seed or overseed with desirable turfgrass within 4 months before or 6 months after treatment. (7) Do not apply this product to newly seeded grasses until they have overwintered and have a well-developed rhizome system. (8) Do not exceed 2.2 lbs./A within 12 months of seeding grasses.

Note: Do not graze or feed turf clippings to animals, or illegal residues may result.

STORAGE AND DISPOSAL

Store in a dry place. Do not contaminate water, food, or feed by storage or disposal. Pesticide wastes may be toxic. Improper disposal of unused pesticide, spray mixture, or rinse water is a violation of federal law. If these wastes cannot be used according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA Regional Office for guidance in proper disposal methods.

Completely empty bag into application equipment. Dispose of empty bag in a sanitary landfill, or by incineration, or, if allowed by state and local authorities, by burning. Stay out of smoke from burning bags.

For minor spills, leaks, etc., follow all precautions indicated on this label and clean up immediately. Take special care to avoid contamination of equipment and facilities during cleanup procedures and disposal of wastes. In the event of a major spill, fire, or other emergency, call 1-800-888-8372, day or night.

PRECAUTIONARY STATEMENTS

Hazards to Humans and Domestic Animals

CAUTION

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

First Aid: In case of contact, immediately flush eyes or skin with plenty of water. Get medical attention if irritation persists.

Personal Protective Equipment

Applicators and other handlers must wear:

- Long-sleeved shirt and long pants
- Waterproof gloves
- Shoes plus socks

Follow manufacturer's instructions for cleaning/maintaining PPE. If no such instructions for washables, use detergent and hot water. Keep and wash PPE separately from other laundry.

Engineering Control Statements

When handlers use closed systems, enclosed cabs, or aircraft 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 immediately if pesticide gets inside. Then wash thoroughly and put on clean clothing.

Environmental Hazards

Do not apply directly to water, to areas where surface water is present, or to intertidal areas below the mean high water mark. Do not contaminate water by cleaning of equipment or disposal of wastes. Simazine is a chemical which can travel (seep or leach) through soil and enter ground water which may be used as drinking water. Simazine has been found in ground water as a result of its use as a herbicide. Users of this product are advised not to apply simazine where the water table (ground water) is close to the surface and where the soils are very permeable, i.e., well-drained soils such as loamy sands. Users are advised to consult with their local agricultural agencies to obtain information on the location of ground water and the type of soil in their area.

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X-77® trademark of Loveland Industries, Inc.

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NCP 603A-L48P 0400

- December 18, 1980
- Revised November 11, 1982
- Revised September 20, 1983
- Revised January 9, 1984
- Revised February 27, 1984
- Revised May 1, 1984
- Revised September 25, 1985
- Revised November 1, 1985
- Revised August 21, 1986
- Revised February 3, 1987
- Revised April 1, 1987
- Revised February 1, 1988
- Revised September 15, 1989
- Revised September 15, 1990
- Revised January 16, 1992
- Revised July 16, 1993
- Revised October 17, 1994
- Revised February 21, 1995
- Revised July 15, 1996
- Revised October 1, 1999
- Revised April 6, 2000

[QUARK\PRINCEP CALIBER\N-PRNC90-BKLT-MSTR-B] - ccg - 4/7/00

Princep® Caliber® 90
100-603
Changes in typed label:

12/1/80

Added triazine resistant weed statement.

11/11/82

Many revisions accepted 10-29-82 including tank mixes, turfgrass, etc.

9/20/83

Added tank mixes with Oust, Roundup, Dual, revised compatibility directions, revised triazine resistant weed statement, added NC to alfalfa, added tree seedlings in N. Central U.S., added filberts to Surflan tank mix.

1/9/84

Deleted help dogbane and puncturevine in Oust tank mix.

2/27/84

Added farmworker safety statements, revised storage and disposal statements, added (*black walnut) to tree seedlings in North Central U.S. section, created booklet for product and deleted certain uses from 10 lb. bag copy (uses which will appear in booklet only).

5/1/84

Numerous changes in precautions under each crop. Label code remained 024.

9/25/85

Revised environmental hazards to include a groundwater advisory statement approved by EPA for simazine.

11/1/85

Add turfgrass use precautions concerning bermudagrass. Minor format revisions to turfgrass and sod production directions.

8/21/86

Delete all alfalfa uses, forage bermudagrass, grasses grown for seed, and tree plantations for timber.

2/3/87

Add ornamental species to Dual 8E Tank Mix, revised FL citrus directions to indicate use on Bedded and Ridge Areas. Reduced noncrop rate to 18# a.i./A.

4/1/87

Revise ground water advisory per settlement agreement.

2/1/88

Revise turfgrass directions, add "Extra" to GramoxoneAE.

9/15/89

Revise FL citrus, add Solicam® tank mix, add nectarines, revise ornamentals.

9/13/90

Correct error in Roundup citrus tank mix directions.

1/16/92

Delete noncropland, asparagus, artichokes, and sugarcane.

7/16/93

WPS/new logo

10/17/94

Revise turf restriction from "west of Highway 281" to pH 7.8.

2/10/95

Removed 12 week restriction for tank mixture with Solicam on citrus.

7/15/97

Novartisized label

10/1/99

Add fall application (pre-corn)

4/6/00

Revise rotational crop language; add 8# ai/A single spring application.

[QUARK\PRINCEP CALIBER\N-PRNC90-BKLT-MSTR-B] - ccg - 4/7/00