

DuPont Crop Protection

AND TOMATOES

DUPONTTM MATRIX® FNV HERBICIDE

EPA Reg. No. 352-671 FOR USE ON POTATOES AND TOMATOES

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with the terms of this labeling.

DuPontTM MATRIX® FNV herbicide is a dry, flowable formulation that selectively controls certain broadleaf weeds and grasses in potatoes, potatoes grown for seed, and field grown tomatoes (direct seeded and transplant).

Continuous agitation is required to maintain the product in suspension in the spray tank.

APPLICATION INFORMATION (Potatoes) PRE-EMERGENCE APPLICATIONS

For best results, apply MATRIX® FNV at 1 to 1 1/2 oz product per acre, immediately after hilling, drag-off, or reservoir tillage (dam/dike operation), to a clean, newly prepared seedbed.

To activate MATRIX® FNV in the soil, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/3 to1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move MATRIX® FNV 2 to 3" deep into the soil profile. Activating sprinkler irrigation is required regardless of the soil moisture level at planting, or the cumulative precipitation that occurs over the next 5 days (unless rainfall occurs in a single event and equals the activation moisture requirement). If rainfall or sprinkler activation cannot be managed, waiting for weeds to emerge and applying MATRIX® FNV postemergence would result in better weed control.

If a clean, newly prepared seedbed, free of emerged or germinating weeds does not occur, and weeds are present at application, add a spray adjuvant to the spray mix (See the "Spray Adjuvant" section of product labeling for additional information). Control may not be adequate for weeds that have an established root system before activation of MATRIX® FNV. Do note apply MATRIX® FNV within 60 days of potato harvest. Do not exceed 2.5 oz of MATRIX® FNV per acre per year.

TANK MIXTURES - PREEMERGENCE APPLICATIONS

MATRIX® FNV may be tank mixed with pesticide products labeled for use on potatoes (such as "Eptam 7E", "Prowl", "Lorox" DF, DuPontTM CINCH® or "Dual II Magnum", "Roundup" or glyphosate-containing products registered for potatoes) in accordance with the most restrictive of label limitations and precautions. When tank mixing MATRIX® FNV with another potato pesticide(s), read and follow all use directions, restrictions, and precautions of both MATRIX® FNV and the tank mix partner(s). MATRIX® FNV may also be used in threeway tank mix combinations with the above pesticide(s). If these recommendations conflict with this MATRIX® FNV label, do not use as a tank mix with MATRIX® FNV.

MATRIX® FNV plus Metribuzin (Such as "Sencor")

Apply a tank mix combination of MATRIX® FNV at 1 to 1 1/2 oz per acre and Metribuzin at 1/3 to 1 1/3 lb per acre for better control of such weeds as kochia, Russian thistle and common lambsquarters. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow the Metribuzin label for your area.

MATRIX® FNV plus ''Eptam 7E''

Apply a tank mix of MATRIX® FNV at 1 to 1 1/2 oz per acre and "Eptam 7E"at label rates for better control of weeds such as hairy nightshade and crabgrass. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Since the rates and incorporation methods of "Eptam 7E"vary by region, follow the recommendations for your region. It is recommended to incorporate a tank mix of "Eptam 7E" + MATRIX® FNV using irrigation, and not equipment, to prevent poor weed control from deep incorporation of the MATRIX® FNV. If your area does not allow incorporation using irrigation, then apply "Eptam 7E" and MATRIX® FNV in a split application. Read and follow both product labels for your area.

MATRIX® FNV plus Pendimethalin (Such as "Prowl")

Apply a tank mix combination of DuPont[™]MATRIX® FNV herbicide at 1 to 1 1/2 oz per acre and "Prowl" at label rates for better control of such weeds as kochia, crabgrass, and common lambsquarters. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow the "Prowl" label for your area.

MATRIX® FNV plus Linuron (Such as "Lorox" DF)

Apply a tank mix combination of MATRIX® FNV at 1 to 1 1/2 oz per acre and "Lorox" DF at 1 to 4 lb per acre for better control of such weeds as common lambsquarters and common ragweed. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow the "Lorox" DF label for your area.

MATRIX® FNV plus S-Metalochlor (Such as DuPontTM CINCH® or ''Dual II Magnum'')

Apply a tank mix combination of MATRIX® FNV at 1 to 1 1/2 oz per acre and CINCH® or "Dual II Magnum" at 1 to 2 pt per acre for better control of such weeds as yellow nutsedge and black nightshade. For best results apply after hilling or drag-off to a clean, newly prepared seedbed, before potatoes emerge and weeds germinate. Read and follow both product labels for your area.

POSTEMERGENCE APPLICATIONS (POTATOES)

For postemergence applications, apply MATRIX® FNV at 1 to 1 1/2 oz per acre to young, actively growing weeds after crop emergence. Typically, small weeds (less than 1" in height or diameter) that are actively growing at application are most easily controlled (See the "Specific Weed Problem" section of product labeling for more information).

Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, or extreme temperature variations), temporary chlorosis (lime green color) may occur after application of MATRIX® FNV. Symptoms usually disappear within 5 to 15 days.

For best results with MATRIX® FNV postemergence, rainfall or sprinkler irrigation of 1/3 to 1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours, but not more than 5 days after application, will activate MATRIX® FNV in the soil and help provide control of subsequent flushes of annual weeds.

TANK MIXTURES (POTATOES) – POSTEMERGENCE APPLICATIONS

MATRIX® FNV may be tank mixed with pesticide products labeled for use on potatoes (such as "Eptam 7E" and metribuzin) in accordance with the most restrictive of label limitations and precautions. When tank mixing MATRIX® FNV with another potato pesticide(s), read and follow all use directions, restrictions, and precautions of both MATRIX® FNV and the tank mix partner(s). MATRIX® FNV may also be used in three-way tank mix combinations with the above pesticide(s). If these recommendations conflict with this MATRIX® FNV label, do not use as a tank mix with MATRIX® FNV.

MATRIX® FNV Plus Foliar Fungicides

MATRIX® FNV may be tank mixed with other suitable registered fungicides on potatoes (such as DuPontTM CURZATE® 60DF, "Manzate", and "Bravo").

Read and follow all manufacturer's label recommendations for the companion fungicide. If these recommendations conflict with this MATRIX® FNV label, do not use as a tank mix with MATRIX® FNV.

MATRIX® FNV Plus Metribuzin (Such as "Sencor")

Apply a tank mix combination of MATRIX® FNV at 1 to 1 1/2 oz per acre and Metribuzin (such as "Sencor") at 1/4 to 2/3 lb per acre for improved weed control of such weeds as Russian thistle, common lambsquarters and triazine-resistant weeds. Use a nonionic surfactant (NIS) at 0.125 % v/v (1pt/100 gal of water). The addition of adjuvants to postemergence metribuzin applications may reduce crop tolerance. Adjuvants should be used with caution.

When possible, avoid post emergence applications on metribuzin sensitive varieties or if the crop is under stress. Read and follow both product labels for your area.

Note: The use of crop oil concentrate (COC) or methylated seed oil (MSO) is not recommended for tank mix combinations with MATRIX® FNV plus Metribuzin.

MATRIX® FNV Plus ''Eptam 7E''

Apply MATRIX® FNV herbicide at 1 to 1.5 ounce per acre in tank mix with 1 pint per acre of "Eptam 7E "herbicide. Include 1% volume/volume (1 gal per 100 gal spray solution) of either of a modified seed oil adjuvant (MSO) or 0.5% volume/volume (0.5 gal per 100 gal spray solution) of an organo-silicon/modified seed oil blend (OS/MSO – such as "Dyne-Amic", "Rivet", or "Phase"). Include 2 lb/acre of a spray-grade ammonium sulfate (AMS).

For best results, rainfall or sprinkler irrigation of 1/3 to 1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours after application, but not more than 1 day after application.

Additional "Eptam 7E" can be added during the water in process if desired (read and follow all use directions, restrictions, and precautions on the "Eptam 7E" label before use. If these recommendations conflict with this MATRIX® FNV label, do not use as a tank mix with MATRIX® FNV.)

Precautions:

• Crop Injury can occur (leaf burn and temporary yellowing) when applications are made under high temperatures. Addition of fungicides may increase the level of crop injury.

In warm, moist conditions, the expression of herbicide symptoms is accelerated; in cold, dry conditions, expression of herbicide symptoms is delayed and may be more variable in weed control.

SEQUENTIAL APPLICATIONS – POTATOES

Depending upon rainfall or other environmental conditions, and the density of the top growth of the potato variety (those with poor top growth such as Norkotah), annual weeds may have a second flush of germinating seedlings, and treated perennials may produce new growth from underground roots or stems. To maximize control of such weeds, it may be necessary to apply DuPont[™] MATRIX® FNV herbicide a second time, 14 to 28 days after the first application (typically, make applications to small weeds that are less than 1" in height or diameter that are actively growing). The combined rate of the applications cannot exceed 2.5 oz MATRIX® FNV per acre.

POTATOES GROWN FOR SEED

MATRIX® FNV may be used on potatoes grown for seed that use field grown tubers as the planted seed piece, and are at least the progeny of the first field planting*.

Apply MATRIX® FNV by any of the following methods:

- Preemergence 1.5 oz per acre
- Postemergence at 1.0 to 1.5 oz per acre
- In a sequential application Preemergence at 1.0 to 1.5 oz per acre, followed by Postemergence at 1.0 oz per acre
- Postemergence at 1.0 oz per acre followed by Postemergence at 1.0 oz per acre.

Do not exceed 2.5 oz per acre of MATRIX® FNV in the same year.

To activate MATRIX® FNV preemergence, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/3 to 1" (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move DuPontTM MATRIX® FNV 2" to 3" deep into the soil profile.

Restrictions

• Do not apply to plants suffering stress from lack of moisture, cold, herbicide injury, and insect or disease injury.

• Do not use on potatoes grown for seed if these are grown from microtubers or transplants. Depending on geography, these may be referred to as Generation 1, Nuclear, Elite 1, or Pre-Elite.

• The rotational crop interval for Spring Barley is extended to 18 months due to the generally shorter growing seasons and different cultural practices in seed production in the states of California, Idaho, Oregon, Montana, South Dakota, Washington, Colorado, and parts of North Dakota**.

Precautions

The rotational crop interval listed in the MATRIX® FNV label may need to be extended to 18 months if seed potato production practices decrease water and/or time for MATRIX® FNV breakdown. Practices that may shorten the breakdown are late planting or less frequent irrigations as compared to commercial production practices. Potatoes can be planted at anytime.
Consider informing your state seed certification agency or inspector that MATRIX® FNV has been applied. Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, or extreme temperature variations), temporary chlorosis (lime green color) may occur after application. These symptoms may appear similar to virus like symptoms (such as chlorosis, leaf crinkling, pinching of terminal leaflet) but will usually disappear within 5 to 15 days of application.

* First field planting utilizes laboratory tested stocks which may be tissue cultured plantlets, greenhouse produced microtubers, minitubers, stem cuttings, or line selections.
** All counties in North Dakota except Pembina, Towner, Walsh, Grand Forks, Trail and Cass.

WEEDS CONTROLLED - POTATO PREEMERGENCE CONTROL

Grasses

Barnyardgrass Foxtail, Giant Foxtail, Green Foxtail, Yellow Wheat, Volunteer

Broadleaves

Chamomile, False Filaree, Redstem Henbit Kochia Mustard, Birdsrape Mustard, Black Pigweed, Prostrate Pigweed, Redroot Pigweed, Smooth Purslane, Common (Echinochloa crus-galli) (Setaria faberi) (Setaria viridis) (Setaria glauca) (Triticum aestivum)

(Matricaria maritima L.) (Erodium cicutarium) (Lamium amplexicaule) (Kochia scoparia) (Brassica rapa L.) (Brassica nigra) (Amaranthus blitoides) (Amaranthus retroflexus) (Amaranthus hybridus) (Portulaca oleracea)

PREEMERGENCE (PARTIAL CONTROL)

Grasses

Crabgrass Wild Oat (Digitaria spp.) (Avena fatua)

PREEMERGENCE (PARTIAL CONTROL)

Broadleaves

Cocklebur (Xanthium spp.) Lambsquarters, Common (Chenopodium album) Nightshade[†], Black (Solanum nigrum) Nightshade, Hairy (Solanum sarrachoides) Pigweed, Prostrate (Amaranthus blitoides) Ragweed, Common (Ambrosia artemisiifolia) Velvetleaf (Abutilon theophrasti)

†Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed

(Hordeum vulgare)

(Setaria verticillata)

(Poa annua)

(Digitaria spp)

(Echinochloa crus-galli)

POSTEMERGENCE CONTROL

Grasses

Barley, Volunteer Barnyardgrass Bluegrass, Annual Crabgrass Foxtail, Bristly Foxtail, Giant Foxtail, Green Foxtail, Yellow Panicum, Fall Wheat, Volunteer

Broadleaves

Chamomile, False Chickweed, Common Henbit Kochia Mustard, Birdsrape Mustard, Black Mustard, Wild Pigweed, Redroot Pigweed, Smooth Purslane, Common Shepherd's purse Wild Radish

(Setaria faberi) (Setaria viridis) (Setaria glauca) (Panicum dichotomislorum) (Triticum aestivum) (Matricaria maritima L.) (Stellaria media) (Lamium amplexicaule) (Kochia scoparia) (Brassica rapa L.)

(Brassica nigra) (Sinapis arvensis) (Amaranthus retroflexus) (Amaranthus hybridus) (Portulaca, oleracea) (Capsella bursa-pastoris) (Raphanus raphanistrum)

POSTEMERGENCE (PARTIAL CONTROL)

Grasses

Johnsongrass, Seedling Millet, Wild Prosso Stinkgrass Wild Oat Yellow Nutsedge

Broadleaves

Thistle, Canada[†] Cocklebur Lambsquarters, Common (Chenopodium album) Morningglory, Ivyleaf Nightshade, Hairy Nightshade*[†], Black Pigweed, Prostrate Quackgrass[†]

(Sorghum halepense) (Panicum miliaceum) (Eragrostis cilianensis) (Avena fatua) (Cyperus esculentus)

(Cirsium arvense) (Xanthium spp.) (Ipomoea hederacea) (Solanum sarrachoides) (Solanum nigrum) (Amaranthus blitoides) (Agropyron repens)

Ragweed, Common	(Ambrosia artemisiifolia)
Smartweed, Pennsylvania	(Polygonum pensylvanicum)
Velvetleaf	(Abutilon theophrasti)
Volunteer Alfalfa**	(Medicago sativa)

* Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed.

** Except in California

‡ Weed partial control is a reduction in weed competition (reduced population and/or vigor) as visually compared to an untreated area. The degree of partial control varies with the rate used, the size of the weeds, and the environmental conditions following treatment.

† See Specific Weed Problems

AERIAL APPLICATION

(See Also SPRAY DRIFT)

- Use nozzle types and arrangements that will provide optimum spray distribution and maximum coverage at a minimum of 5 GPA. In California use a minimum of 10 GPA.

- Do not apply during a temperature inversion, when winds are gusty, or when conditions favor poor coverage and/or off-target spray movement.

- Do not apply by air in the state of California, except in Modoc or Siskiyou counties.

Do not apply by air in the state of NewYork.

CHEMIGATION - POTATOES ONLY

DuPont[™] MATRIX[®] FNV herbicide can be applied using center pivot, lateral move, solid set, or hand move irrigation systems in potatoes. Do not apply MATRIX® FNV using any other type of irrigation system. Check irrigation systems to insure uniform application of water to all areas. Failure to apply MATRIX® FNV uniformly may result in crop injury and/or poor weed control.

For best results, use the highest recommended rate and apply preemergence to early postemergence to the weeds (weeds less than 1" tall). If weeds are present at application, add a nonionic surfactant containing at least 80% active ingredient to the spray mix at 1 to 2 pt/acre.

MATRIX® FNV may be mixed in a supply tank with water, fertilizer, or other appropriate agricultural chemicals. Maintain continuous agitation in the injection nurse tanks during application.

For solid set and hand move irrigation systems, apply MATRIX® FNV at the beginning of the set and then apply 1/3 to 1" of water for activation (sandy soils apply at least 1/3" sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1").

For center pivot and lateral move irrigation systems, apply MATRIX® FNV in 1/3 to 1" of water for activation as a continuous injection (sandy soils apply at least 1/3", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1").

If you have questions about calibrating chemigation equipment, contact State Extension Service specialists, equipment manufacturers, or other experts. If the chemigation equipment needs adjustment, only the custodian responsible for its operation, or someone under the supervision of that custodian, should make the necessary adjustments.

IRRIGATION SYSTEM REQUIREMENTS

The irrigation system must contain the following:

- a functional check valve
- vacuum relief valve
- a low pressure drain (to prevent water source contamination from backflow; should be located on the irrigation pipeline)
- functional interlocking controls (to automatically shut-off the pesticide injection pump when the water pump motor stops)

• 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

The pesticide injection pipeline must contain the following:
a functional, automatic, quick-closing check valve (to prevent the flow of fluid back toward the injection pump)

• a functional, solenoid-operated valve (normally closed) located on the intake side of the injection pump (should be connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the irrigation system is shut down either automatically or manually)

The irrigation line or water pump must include a functional pressure switch that will stop the water pump motor when pesticide distribution is adversely affected by a decrease in water pressure.

CHEMIGATION PRECAUTIONS

Distributing treated water in an uneven manner can result in crop injury, lack of effectiveness, or over-tolerance pesticide residues in the crop. Therefore, to ensure that the mixture is applied evenly at the recommended rate, use sufficient water, and apply the mixture for the proper length of time.

- Do not permit run-off during chemigation.
- Do not apply when wind speed favors drift beyond the area intended for treatment.
- Do not connect an irrigation system (including greenhouse systems) used for DuPont [™]MATRIX® FNV herbicide application to a public water system.

MATRIX® FNV ROTATIONAL CROP GUIDE-LINES – POTATO

For crops listed below, planting prior to the interval shown may result in crop injury when using MATRIX® FNV. Rotation intervals may need to be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless supplemental sprinkler irrigation has been applied and totals greater than 15" during the growing season. For tank mixtures, follow the most restrictive rotational crop guideline.

Rotation Crop	Interval (months)	
Alfalfa**	4	
Barley, Spring *	9	
Beans, Dry	10	
Beans, Succulent	10	
Carrots (Kern County, CA)**	4	
Carrots**	10	
Corn, Field	Anytime	
Corn, Popcorn	10	
Corn, Sweet	10	
Cotton	10	
Cover Crops (erosion control)) 4	
Cucumber	10	
Garlic	6	
Grass, pasture, hay, seed**	s 4	
Mint**	4	
Oats, Spring	9	
Onions**	10	
Peas**	8	
Potatoes	Anytime	
Sunflowers	10	
Soybeans	4	
Tomatoes	Anytime	
Wheat, Spring	9	
Wheat, Winter	4	
Crops Not Listed	18	

* Idaho - 18 months for Teton county, Caribou county, Madison county east of Hwy 20, and Fremont county east of Hwy 20. Colorado - Alamosa, Conejos, Costilla, Rio Grande and Saguache counties: 1.5 oz or less DuPont[™] MATRIX® FNV per acre per season - 9 months; greater than 1.5 oz of MATRIX® FNV per acre per season - 18 months

** Potatoes grown under sprinkler irrigation with a minimum of 18 inches of water per season. This rotation interval is for sand, loamy sand and sandy loam soils having not more than 1.5% organic matter where a minimum of 18 inches of sprinkler irrigation is used on the previous potato crop. Injury to the rotated crop may occur if less than 18 inches of irrigation is used on the previous potato crop. For tank mixtures, follow the most restrictive rotational crop guideline.

For Rotation to Alfalfa: MATRIX® FNV in potatoes not to exceed 1 ounce per use season in Adams, Grant, Douglas and Lincoln counties of Washington, and

MATRIX® FNV in potatoes not to exceed 1.5 ounces per acre per use season in Benton, Franklin, Klickitat, Walla Walla and Yakima counties in Washington and Morrow and Umatilla counties in Oregon.

For Rotation to Onions and Carrots: MATRIX®FNV in potatoes not to exceed 1.5 ounces per acre per use season in Adams, Grant, Douglas and Lincoln counties of Washington, and MATRIX® FNV in potatoes not to exceed 2.5 ounces per acre per season in Benton, Franklin, Klickitat, Walla Walla and Yakima counties in Washington and Morrow and Umatilla counties in Oregon. For Rotation to Grass Crops Grown for Seed, Hay or Pasture: DuPont[™]MATRIX® FNV herbicide in potatoes not to exceed 1.5 ounces per acre per use season in Adams, Grant, Douglas and Lincoln counties of Washington, and MATRIX® FNV in potatoes not to exceed 2.5ounces per acre per use season in Benton, Franklin, Klickitat, Walla Walla and Yakima counties in Washington and Morrow and Umatilla counties in Oregon.

For Rotation to Peas and Mints: MATRIX® FNV in potatoes not to exceed 1.5 ounces per acre per use season in all areas.

NOTE: MATRIX® FNV should not be used in a tankmix or sequential application program with other soil residual ALS-inhibiting herbicides on potatoes as the combined effects of these herbicides on the planting of subsequent crops have not been thoroughly investigated and crop injury may occur.

RESTRICTIONS

Potatoes

• Do not apply MATRIX® FNV on potatoes within 60 days of harvest.

• Do not exceed 2.5 oz MATRIX® FNV per acre on potatoes during the same growing season.

• Do not apply to sweet potatoes or yams.

• Do not use MATRIX® FNV on potatoes grown for seed, except as directed on this labeling or supplemental labeling.

• Do not apply to potatoes growing in Greenhouses, Cold Frames, Pot cultures, etc. Apply only to potatoes growing in fields.

TOMATOES (DIRECT SEEDED AND TRANSPLANT) PREEMERGENCE APPLICATIONS

For preemergence applications to the crop, apply MATRIX® FNV after seeding at 2.0-4.0 oz. product per acre.

To activate MATRIX® FNV in the soil, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/2 to 1"(sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move MATRIX® FNV 2 to 3" deep into the soil profile. Activating sprinkler irrigation is required regardless of the soil moisture level at planting, or the cumulative precipitation that occurs over the next 5 days (unless rainfall occurs in a single event and equals the activation moisture requirement). If rainfall or sprinkler activation cannot be managed, waiting for weeds to emerge and applying MATRIX® FNV postemergence may result in better weed control.

If a clean, newly prepared seedbed, free of emerged or germinating weeds does not occur, and weeds are present at application, the addition of a spray adjuvant may improve weed control (See the "Spray Adjuvant" section of product labeling for additional information). Control may not be adequate for weeds that are greater than 1" in height or diameter or weeds that have an established root system before activation of MATRIX® FNV.

POSTEMERGENCE APPLICATIONS

For postemergence applications, apply MATRIX® FNV at 1.0-2.0 oz product per acre (use 2.0 oz per acre for longer residual) to young, actively growing weeds after the crop has reached the cotyledon stage. Optimum performance is obtained when weeds are less than 1" in height or diameter and are actively growing.

Use a surfactant at a minimum rate of 0.25% V/V (2 pints/100 gallons of water). The use of crop oil concentrate, methylated seed oils, nitrogen fertilizer solution or nonionic surfactant rates above 0.25% V/V may result in temporary crop chlorosis (lime green color). Symptoms usually disappear within 5 to 15 days.

Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, extreme temperature variations or saturated or water-logged soils), temporary crop chlorosis (lime green color) may occur after application of MATRIX® FNV. Symptoms usually disappear within 5 to 15 days.

For best results with MATRIX® FNV postemergence, rainfall or sprinkler irrigation of 1/2 to 1 " (sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours, but not more than 5 days after application, will activate MATRIX® FNV in the soil and help provide control of subsequent flushes of annual weeds.

Postemergence applications of MATRIX® FNV should be made after the tomatoes reach the cotyledon stage.

SEQUENTIAL APPLICATIONS TOMATOES

Annual weeds at times may have multiple flushes of seedlings, or treated weeds may sometimes regrow from underground stems or roots, depending upon rainfall and other environmental conditions. To maximize control of such weeds, it may be necessary to use sequential applications of MATRIX® FNV.

PREEMERGENCE FOLLOWED BY POSTEMERGENCE

Applications of MATRIX® FNV may be applied Preemergence followed by single or multiple applications Postemergence.

Note : For sequential applications the total amount of MATRIX® FNV cannot exceed 4.0 oz. product per acre per year on a broadcast basis.

POSTEMERGENCE FOLLOWED BY POSTEMERGENCE

Multiple applications of MATRIX® FNV may be applied postemergence, optimum control is seen when the first application is made to small actively growing weeds, followed by a second application 7 to 14 days later.

Note : For sequential applications the total amount of MATRIX® FNV cannot exceed 4.0 oz. product per acre per year on a broadcast basis.

BAND APPLICATIONS – TOMATOES

DuPont[™] MATRIX®FNV herbicide can be applied preemergence and postemergence as a banded application. Use proportionally less spray mixture based on the soil area actually sprayed. See the "Preemergence Applications" and "Postemergence Applications" sections of product labeling for additional details on the use of MATRIX® FNV.

TANK MIXTURES – TOMATOES

MATRIX® FNV may be tank mixed with pesticide products labeled for use on tomatoes in accordance with the most restrictive of label limitations and precautions. When tankmixing MATRIX® FNV with another tomato pesticide(s), read and follow all use directions, restrictions, and precautions of both MATRIX® FNV and the tank mix partner(s).

MATRIX® FNV may also be used in three-way tank mix combinations with the above pesticide(s). If these recommendations conflict with this MATRIX® FNV label, do not use as a tank mix with MATRIX® FNV. Tank mixtures with products that lower the spray solution pH may reduce weed control (such as LI700 surfactant).

MATRIX® FNV Plus Foliar Fungicides

MATRIX® FNV may be tank mixed with other suitable registered fungicides on tomatoes (such as "Manzate", and "Bravo"). Tank mixes with Copper containing fungicides may reduce weed control.

Read and follow all manufacturers' label recommendations for the companion fungicide. If these recommendations conflict with this MATRIX® FNV label, do not use as a tank mix with MATRIX® FNV.

TOMATOES: CALIFORNIA PREEMERGENCE APPLICATIONS

For preemergence applications to the crop, apply MATRIX® FNV after seeding at 2.0-4.0 oz. product per acre. To activate MATRIX® FNV in the soil, supply moisture by a single rainfall event, or apply sprinkler irrigation of 1/2 to 1" (sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), within 5 days after application, to move MATRIX® FNV 2 to 3" deep into the soil profile. Activating sprinkler irrigation is required regardless of the soil moisture level at planting, or the cumulative precipitation that occurs over the next 5 days (unless rainfall occurs in a single event and equals the activation moisture requirement). If rainfall or sprinkler activation cannot be managed, waiting for weeds to emerge and applying MATRIX® FNV postemergence may result in better weed control.

If a clean, newly prepared seedbed, free of emerged or germinating weeds does not occur, and weeds are present at application, the addition of a spray adjuvant may improve weed control (See the "Spray Adjuvant" section of product labeling for additional information). Control may not be adequate for weeds that are greater than 1" in height or diameter or weeds that have an established root system before activation of MATRIX® FNV.

POSTEMERGENCE APPLICATIONS

For postemergence applications, apply MATRIX® FNV at 2.0 oz. product per acre to young, actively growing weeds after the crop has reached the cotyledon stage. Optimum performance is obtained when weeds are less than 1" in height or diameter and are actively growing.

Use a surfactant at a minimum rate of 0.25% V/V (2 pints/100 gallons of water). The use of crop oil concentrate, methylated seed oils, nitrogen fertilizer solution or nonionic surfactant rates above 0.25% V/V may result in temporary crop chlorosis (lime green color). Symptoms usually disappear within 5 to 15 days.

Under growing conditions that promote crop stress (such as drought, frost, cold temperatures, high temperatures, extreme temperature variations or saturated or water-logged soils), temporary crop chlorosis (lime green color) may occur after application of MATRIX® FNV. Symptoms usually disappear within 5 to 15 days.

For best results with MATRIX® FNV postemergence, rainfall or sprinkler irrigation of 1/2 to 1" (sandy soils apply at least 1/2", sandy loams apply at least 1/2", silt soils apply at least 3/4", clay soils apply at least 1"), no sooner than 4 hours, but not more than 5 days after application, will activate MATRIX® FNV in the soil and help provide control of subsequent flushes of annual weeds.

Postemergence applications of MATRIX® FNV should be made after the tomatoes reach the cotyledon stage.

SEQUENTIAL APPLICATIONS

Annual weeds at times may have multiple flushes of seedlings, or treated weeds may sometimes regrow from underground stems or roots, depending upon rainfall and other environmental conditions. To maximize control of such weeds, it may be necessary to use sequential applications of MATRIX® FNV.

PREEMERGENCE FOLLOWED BY POSTEMERGENCE

Applications of MATRIX® FNV may be applied Preemergence followed by single or multiple applications Postemergence.

Note: For sequential applications the total amount of MATRIX® FNV cannot exceed 4.0 oz. product per acre per year on a broadcast basis.

POSTEMERGENCE FOLLOWED BY POSTEMERGENCE

Multiple applications of MATRIX® FNV may be applied postemergence, optimum control is seen when the first application is made to small actively growing weeds, followed by a second application 7 to 14 days later.

Note: For sequential applications the total amount of MATRIX® FNV cannot exceed 4.0 oz. product per acre per year on a broadcast basis.

BAND APPLICATIONS - TOMATOES:

DuPont[™] MATRIX® FNV herbicide can be applied in a preemergence band at 2.0 - 4.0 oz. product per acre (For example, 0.5-1.0 oz. of product per conventional broadcast acre assuming 25% banding) followed by two separate postemergence band applications applied at 2 oz. product per acre (For example, 0.5 oz of product per conventional broadcast acre assuming 25% banding) over the same sprayed area.

MATRIX® FNV can be applied using three postemergence band applications at 2 oz. product per acre (For example, 0.5 oz of product per conventional broadcast acre assuming 25% banding).

Do not make any more than three band applications of MATRIX® FNV in one growing season.

WEEDS CONTROLLED – TOMATO PREEMERGENCE CONTROL

Grasses

Barnyardgrass Foxtail, Giant Foxtail. Green Foxtail, Yellow Wheat, Volunteer (Echinochloa crus-galli) (Setaria faberi) (Setaria viridis) (Setaria glauca) (Triticum aestivum)

Broadleaves

Filaree, Redstem Henbit Kochia Mustard, Black Pigweed, Redroot Pigweed, Smooth Purslane, Common

(Erodium cicutarium) (Lamium amplexicaule) (Kochia scoparia) (Brassica nigra) (Amaranthus retroflexus) (Amaranthus hybridus) (Portulaca oleracea)

(Digitaria spp.)

(Avena fatua)

PREEMERGENCE (PARTIAL CONTROL)

Grasses

Crabgrass Wild Oat

Broadleaves

Cocklebur Lambsquarters, Common (*Chenopodium album*) Nightshade*, Black† Nightshade, Hairy Pigweed, Prostrate Ragweed, Common Velvetleaf

(Xanthium spp.) (Solanum nigrum) (Solanum sarrachoides) (Amaranthus blitoides) (Ambrosia artemisiifolia) (Abutilon theophrasti)

* Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed.

Black Nightshade suppression is only for use in Tomatoes in California.

† See Specific Weed Problems

POSTEMERGENCE CONTROL

(Weeds not to exceed 1" in height) Grasses

Barley, Volunteer Barnyardgrass Bluegrass, Annual Crabgrass Foxtail, Bristly Foxtail, Giant Foxtail, Green Foxtail, Yellow Panicum, Fall Wheat, Volunteer

Broadleaves

Chamomile, False Chickweed, Common Henbit Kochia Mustard, Birdsrape Mustard, Black Mustard, Wild Pigweed, Redroot Pigweed, Smooth Purslane, Common Shepherd's purse Wild Radish

(Hordeum vulgare) (Echinochloa crus-galli) (Poa annua) (Digitaria spp.) (Setaria verticillata) (Setaria faberi) (Setaria viridis) (Setaria glauca) (Panicum dichotomislorum) (Triticum aestivum)

(Matricaria maritima L.) (Stellaria media) (Lamium amplexicaule) (Kochia scoparia) (Brassica rapa L.) (Brassica nigra) (Sinapis arvensis) (Amaranthus retroflexus) (Amaranthus hybridus) (Portulaca, oleracea) (Capsella bursa-pastoris) (Raphanus raphanistrum)

POSTEMERGENCE (PARTIAL CONTROL)

Grasses Johnsongrass, Seedling Millet, Wild Prosso Stinkgrass Quackgrass[†] Wild Oat Yellow Nutsedge

(Sorghum halepense) (Panicum miliaceum) (Eragrostis cilianensis) (Agropyron repens) (Avena fatua) (Cyperus esculentus)

Broadleaves

Thistle, Canada[†] Cocklebur Lambsquarters, Common Morningglory, Ivyleaf Nightshade, Hairy Nightshade*†, Black (cotyledon stage only) (Solanum nigrum) Pigweed, Prostrate Ragweed, Common Smartweed, Pennsylvania (Polygonum pensylvanicum) Velvetleaf Volunteer Alfalfa**

(Cirsium arvense) (Xanthium spp.) (Chenopodium album) (Ipomoea hederacea) (Solanum sarrachoides)

(Amaranthus blitoides) (Ambrosia artemisiifolia) (Abutilon theophrasti) (Medicago sativa)

* Eastern Black Nightshade (Solanum ptycanthum) is NOT Controlled or suppressed.

Black Nightshade partial control is only for use in Tomatoes in California.

** Except California

‡ Partial control is a reduction in weed competition (reduced population and/or vigor) as visually compared to an untreated area. The degree of partial control varies with the rate used, the size of the weeds, and the environmental conditions following treatment.

† See Specific Weed Problems

MATRIX® FNV ROTATIONAL CROP GUIDELINES - TOMATO

For crops listed below, planting prior to the interval shown may result in crop injury when using DuPont[™] MATRIX® FNV herbicide. Rotation intervals may need to be extended to 18 months if drought conditions prevail after application and before the rotational crop is planted, unless supplemental sprinkler irrigation has been applied and totals greater than 15" during the growing season. For tank mixtures, follow the most restrictive rotational crop guideline.

Rotation Crop	Interval (months)
Beans, Dry	10
Beans, Snap	10
Corn, Field	Anytime
Corn, Sweet	10
Cotton	10
Cucumber	10
Garlic	6
Potatoes	Anytime
Soybeans	10
Tomatoes	Anytime
Wheat, Winter	4
Crops Not Listed	12

Note: Where drip irrigated tomatoes are grown, rotate only to tomato, potato or field corn as crop injury may result.

Rotational crops may be planted at indicated intervals provided the fields are deep disked or plowed, and thorough soil mixing is achieved, prior to planting the rotational crop.

RESTRICTIONS

Tomatoes

• Do not apply DuPont[™] MATRIX[®] FNV within 45 days of tomato harvest.

• Do not apply MATRIX® FNV by air on tomatoes.

• Do not apply using assisted (Airblast) field crops sprayers on tomatoes.

- Do not exceed 4.0 oz. MATRIX® FNV per acre (broadcast basis) on tomatoes during the same growing season.
- Banding applications of MATRIX® FNV should not exceed 4.0 ounces on a broadcast basis in the same growing season.

Do not apply to tomatoes growing in Greenhouses, Cold

Frames, Pot cultures, etc. Apply only to tomatoes growing in fields.

• Do not apply through any type of irrigation system.

CULTIVATION

A timely cultivation may be necessary to control suppressed weeds, weeds that were beyond the maximum size at application, or weeds that emerge after an application of MATRIX® FNV.

• Cultivation up to 7 days before the postemergence application of MATRIX® FNV may decrease weed control by pruning weed roots, placing the weeds under stress, or covering the weeds with soil and preventing coverage by MATRIX® FNV.

To allow MATRIX® FNV to fully control treated weeds, cultivation is not recommended for 7 days after application.
Optimum timing for cultivation is 7 - 14 days after a postemergence application of MATRIX® FNV.

SPECIFIC WEED PROBLEMS

Quackgrass: For best results, apply MATRIX® FNV postemergence to quackgrass that is 4 to 8" tall. Quackgrass not emerged at the time of application will not be controlled or suppressed, and would require a second postemergence application for acceptable control.

Black Nightshade (Tomatoes): For best results, apply MATRIX® FNV preemergence (prior to weed germination)at 2 - 4 oz per acre followed by a postemergence application at 1 to 2 oz per acre to small actively growing weeds.

Canada Thistle: For best results, apply MATRIX® FNV postemergence to small actively growing Canada thistle. Canada thistle not emerged at the time of application will not be controlled or suppressed, and would require a second postemergence application for acceptable control.

SPRAY ADJUVANTS

Include a spray adjuvant with applications of MATRIX® FNV when applied by itself and postemergence to the weeds. Consult your Ag dealer or applicator, local DuPont fact sheets, technical bulletins, and service policies prior to using an adjuvant system. If another herbicide is tank mixed with MATRIX® FNV, select adjuvants authorized for use with both products. Products must contain only EPA-exempt ingredients (40 CFR 1001).

Nonionic Surfactant (NIS)

• Apply 0.125 to 0.25% v/v (1 to 2 pt/100 gal of water). The

0.25% v/v rate is preferred under arid or drought conditions.

• Surfactant products must contain at least 80% nonionic surfactant with a hydrophilic/lipophilic balance (HLB)greater than 12. – See the Tank Mixtures section of product labeling for additional information.

Petroleum Crop Oil Concentrate (COC) or Modified Seed Oil (MSO)

• Apply at 1% volume/volume (1 gal per 100 gal spray solution).

• Oil adjuvants must contain at least 80% high quality, petroleum (mineral) or modified vegetable seed oil with at least 15% surfactant emulsifiers.

• Blended products which contain both MSO and Silcone are acceptable at labeled rates.

Ammonium Nitrogen Fertilizer

• An ammonium nitrogen fertilizer may be added to the spray mix, in addition to a crop oil concentrate or nonionic surfactant, but is not required to optimize performance of this product.

• Use 2 qt/acre of a high-quality urea ammonium nitrate (UAN), such as 28%N or 32%N, or 2 lb/acre of a spray-grade ammonium sulfate (AMS). Use 4 qt/acre UAN or 4lb/acre AMS under arid conditions.

• Do not use liquid nitrogen fertilizer as the total carrier solution.

Special Adjuvant Types

• Combination adjuvant products may be used at doses that provide the required amount of NIS, COC, MSO and/or ammonium nitrogen fertilizer. Consult product literature for use rates and restrictions.

• In addition to the adjuvants specified above, other adjuvant types may be used if they provide the same functionality and have been evaluated and approved by DuPont product management. Consult separate DuPont technical bulletins for detailed information before using adjuvant types not specified on this label.

Precautions:

1. The use of silicone polymer type surfactants is not suggested as reduced weed control may result.

2. Avoid using crop oil concentrate (COC) or methylated seed oil (MSO) when potatoes are under heat stress (>85 degrees F) as multiple stresses may cause crop injury.

EQUIPMENT-SPRAY VOLUMES

Agitate the spray tank continuously to keep the material in suspension.

Do not use equipment and/or spray volumes that will cause damage from spray by drift onto nontarget sites. Do not make applications when weather conditions are likely to cause spray to drift onto nontarget sites. (See the "Spray Drift Management" section of this label for additional information).

GROUND APPLICATION - POTATOES AND TOMATOES

To ensure optimum spray distribution and thorough coverage, apply DuPontTM MATRIX® FNV herbicide with a properly calibrated, low-pressure (20 to 40 psi) boom sprayer equipped with flat fan, "Twinjet", underleaf banding nozzles or flood jet nozzles. Nozzle screens should be no finer than 50 mesh. When using flood nozzles, the spray pattern should overlap 100% for optimum product performance. For banded applications even flow flat fan or twin jet spray nozzles may provide a more uniform spray distribution.

With ground application equipment, use enough water to deliver 10 to 40 gal total spray solution per acre. Avoid overlapping, and shut off spray booms while starting, turning, slowing, or stopping, or injury to the crop may result.

SPRAYER CLEANUP

Spray equipment or nurse tanks used in chemigation, must be cleaned before MATRIX® FNV is sprayed. Follow the cleanup procedures specified on the labels of previously applied products. If no directions are provided, follow the 6 steps outlined in the "After Spraying MATRIX® FNV and before Spraying Other Crops" section of product labeling.

For maximum preemergence activity, prior to application, the bed or soil surface should be smooth and relatively free of crop and weed trash (dead weeds, decaying leaves, clippings, etc.).Leaves and trash may be removed by blowing the area to be treated or by thoroughly mixing the trash into the soil through cultivation prior to herbicide application. Cultural practices that result in redistribution or disturbance of the soil surface after treatment will decrease the herbicidal effectiveness of MATRIX® FNV.

Cutting water furrows, or cultivations that mix untreated soil into the treated areas, will also reduce the effectiveness of the herbicide treatment.

For best weed management apply MATRIX® FNV with another suitable residual herbicide registered for that crop. This is recommended for all soil types, but especially so for coarse textured soils under standard sprinklers or micro-sprinklers.

More than one banded application of MATRIX® FNV may be needed to provide extended weed control.

CONTROLLING DROPLET SIZE - AIRCRAFT

• Number of Nozzles - Use the minimum number of nozzles with the highest flow rate that provide uniform coverage.

• Nozzle Orientation - Orienting nozzles so that the spray is emitted backwards, parallel to the airstream will produce larger droplets than other orientations.

• Nozzle Type - Solid stream nozzles (such as disc and core with swirl plate removed) oriented straight back produce larger droplets than other nozzle types.

• Boom Length - the boom length should not exceed 3/4 of the wing or rotor length— longer booms increase drift potential.

• Application Height - Application more than 10 ft above the canopy increases the potential for spray drift.

PRECAUTIONS

• Potato and tomato varieties may differ in their response to various herbicides. DuPont recommends that you first consult your state experiment station, university, or extension agent as to sensitivity to any herbicide. If no information is available, limit the initial use to a small area.

• Preemergence use on soils containing more than 6% organic matter may not provide adequate soil residual weed control and may result in reduced weed control.

• Preemergence and Postemergence use on rill irrigated potatoes and tomatoes (furrow or gravity) may not provide adequate weed control in the absence of rainfall.

• If sprinklers are used for frost protection, delay the application of DuPont[™] MATRIX® FNV herbicide until stress from environmental conditions have passed.

• Avoid spray drift to any adjacent crops or desirable plants as injury may occur.

• Crop injury may occur following an application of MATRIX® FNV if there is a prolonged period of cold weather and/or cold weather in conjunction with wet soils caused by poor drainage or excessive use of sprinkler irrigation for frost protection.

• Draining or flushing equipment on or near desirable trees or other plants, or in areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots may injure these plants. Trees or other desirable plants whose roots extend into a treated crop use area may be injured.

• Do not contaminate any body of water, including irrigation water that may be used on other crops.

• Carefully observe sprayer cleanup instructions, as spray tank residue may damage other crops.

• For best results, maintain spray tank solution at pH 5 to 7.

• Do not apply to frozen or snow covered soil. Crop injury may occur from applications made to poorly drained soils.

• If the selected companion herbicide has a ground or surface water advisory, consider the advisory when using the companion herbicide.

• Tank mixing MATRIX® FNV with Organophosphate insecticides in tomatoes may result in crop injury.

RESTRICTIONS

• Injury to or loss of desirable trees or vegetation may result from failure to observe the following:

- Do not apply, drain, or flush equipment on or near desir able trees or other plants, or on areas where their roots may extend, or in locations where the chemical may be washed or moved into contact with their roots.
- Do not use on lawns, walks, driveways, tennis courts, or similar areas. Prevent drift of spray to desirable plants.
- Do not contaminate any body of water, including irrigation water that may be used on other crops.
- Carefully observe sprayer cleanup instructions, as spray tank residue may damage crops other than potatoes or tomatoes.

• Do not apply using Air Assisted (Air Blast) field crop sprayers.

IMPORTANT

BEFORE USING DUPONT[™] MATRIX® FNV HERBI-CIDE, READ AND FOLLOW ALL APPLICABLE DIREC-TIONS, RESTRICTIONS AND PRECAUTIONS ON THE EPA-REGISTERED LABEL.

This bulletin contains new or supplemental instructions for use of this product which do not appear on the EPA-registered package label. Follow the instructions carefully. This labeling must be in the possession of the user at the time of pesticide application. Read the Limitation of Warranty and Liability on the Section 3 Federal product label before buying or using THIS product. If terms are not acceptable, return the unopened package at once to Seller for full refund of purchase price paid. Otherwise, use by Buyer or any other User constitutes acceptance of the terms of the Limitation of Warranty and Liability on the Section 3 Federal product label.

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