

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

24 APR 1992

Kenneth W Chisholm
NOR-AM Chemical Company
3509 Silverside Road
P.O. Box 7495
Wilmington, DE 19803

Dear Mr. Chisholm:

Subject: Revised Label Text - Expand Use Area and Add Commercial
Sod Production
Nortron Flowable Herbicide
EPA Registration No. 45639-8
Your Submission Dated March 25, 1992

The labeling referred to above, submitted in connection with registration under the Federal Insecticide, Fungicide, and Rodenticide Act, as amended, is acceptable with the following provisions:

- 1) Due to new EPA policy, part of the Environmental Hazards section has been changed. To comply, change the sentence "Do not apply to water or wetlands" to read "Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high water mark."
- 2) Under Dosage Table 6 for use of Nortron Flowable with Antor 4ES and Pyramin, change the unit of measure for Nortron from quarts to pints.

A stamped copy is enclosed for your records. Please submit five (5) final printed copies for the referenced label, incorporating the above changes.

Sincerely yours,

Joanne I. Miller
Product Manager (23)
Fungicide-Herbicide Branch
Registration Division (H7505C)

Enclosure

CONCURRENCES

SYMBOL	H7505C							
SURNAME	D. KENNY							
DATE	4/24/92							

SPECIMEN LABEL

24 APR 1992

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DRAFT

45639-8
Nortron[®]

FLOWABLE

SUGAR BEET HERBICIDE

For selective control of weeds in sugar beets

GRASS SEED HERBICIDE

For Selective Control of Weeds in Certain Grass Seed Crops and Commercial Sod Production in California, Oregon, and Washington

ACTIVE INGREDIENT

Ethofumesate: (2-ethoxy-2,3-dihydro-3,3-dimethyl-5-benzofuranyl methanesulfonate*)

Percent by Weight

42%

INERT INGREDIENTS:

58%

TOTAL 100%

This product contains 4.0 lbs active ingredient per gallon

EPA Reg. No. 45639-8

EPA Est. No. 46142-EN-01

PRECAUCION AL USUARIO: Si usted no lee ingles, no use este producto hasta que la etiqueta haya sido explicada ampliamente.

KEEP OUT OF REACH OF CHILDREN

CAUTION

Avoid contact with skin, eyes, or clothing

STATEMENT OF PRACTICAL TREATMENT

IF SWALLOWED: Call a physician or Poison Control Center. Drink one or two glasses of water and induce vomiting by touching back of throat with finger. Do not induce vomiting or give anything by mouth to an unconscious person.

IF ON SKIN: Wash with plenty of soap and water. Get medical attention.

IF INHALED: Remove victim to fresh air. If not breathing, give artificial respiration, preferably mouth to mouth. Get medical attention.

SEE BACK PANEL FOR ADDITIONAL PRECAUTIONARY STATEMENTS AND FIRST AID.

NOR-AM
NOR-AM CHEMICAL COMPANY
A Schering Berlin Company

3509 Silverside Road, P.O. Box 7495
Wilmington, DE 19803

NET CONTENTS:

* Protected by U.S. Patent
No. 3,689,507

Product of United Kingdom

PRECAUTIONARY STATEMENTS HAZARDS TO HUMANS AND DOMESTIC ANIMALS **CAUTION**

Harmful if swallowed, inhaled, or absorbed through skin. Avoid contact with skin, eyes, or clothing. Avoid breathing vapor or spray mist. Wash thoroughly with soap and water after handling. Remove contaminated clothing and wash before reuse.

FIRST AID—In case of contact, immediately flush eyes or skin with plenty of water. Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS

Do not apply directly to water or wetlands. Do not apply when weather conditions favor drift from target area. Do not contaminate water when disposing of equipment washwaters.

IN CASE OF FIRE, LEAKY OR DAMAGED CONTAINERS, OR OTHER EMERGENCY, REPORT AT ONCE BY TOLL-FREE TELEPHONE TO: 800-424-9300.

GENERAL USE PRECAUTIONS

NORTRON® FLOWABLE or tank-mixes should be used for recommended purposes and at recommended rates only. (DO NOT OVERTREAT.)

Do not graze livestock on treated crops.

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

If crop is lost due to climatic or soil conditions following application of NORTRON FLOWABLE or tank-mixes, do not plant crops other than sugar beets or ryegrass in treated land during the same season. Do not retreat field with NORTRON FLOWABLE. If fields are replanted to sugar beets, reseed into treated band.

Do not rotate with any crops other than sugar beets or ryegrass for 12 months after application. Thorough tillage, including moldboard plowing, should precede the planting of crops other than sugar beets or ryegrass. Do not use NORTRON FLOWABLE on muck or peat soils.

Do not allow spray mixture to stand in tank overnight. Flush and drain spray equipment after each day's use.

Store unused spray mixture in tightly-sealed containers and protect from frost.

This label must be in the possession of the user at the time of pesticide application.

SHAKE CONTAINER WELL BEFORE USING

STORAGE AND DISPOSAL

STORAGE: Protect NORTRON FLOWABLE from freezing temperatures.

PESTICIDE DISPOSAL: Do not contaminate water, food or feed by storage or disposal. Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use 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.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose of in a sanitary landfill, or by other procedures approved by state and local authorities.

DO NOT REUSE EMPTY CONTAINER.

GENERAL INFORMATION

WEED SPECIES CONTROLLED

SUGAR BEETS

NORTRON FLOWABLE is a selective herbicide for use in sugar beets for the control of the weed species listed below. It provides effective control of these weeds for up to 10 weeks following application.

WEED SPECIES CONTROLLED

Annual Broadleaf Weeds

Black nightshade (*Solanum nigrum*), Common chickweed (*Stellaria media*), Common lambsquarters (*Chenopodium album*), Common purslane (*Portulaca oleracea*), Kochia (*Kochia scoparia*), Ladysthumb (*Polygonum persicaria*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), Red-root pigweed (*Amaranthus retroflexus*), Russian thistle (*Salsola kali* var. *tenuifolia*), Wild buckwheat (*Polygonum convolvulus*).

Annual Grass Weeds

Annual bluegrass (*Poa annua*), Barnyardgrass* (*Echinochloa crus-galli*), Canarygrass (*Phalaris canariensis*), Green foxtail (*Setaria viridis*), Large crabgrass (*Digitaria sanguinalis*), Volunteer barley (*Hordeum* sp.), Volunteer wheat (*Triticum* sp.), Wild oats** (*Avena fatua*), Yellow foxtail (*Setaria glauca*).

*Control of barnyardgrass may be reduced with the NORTRON FLOWABLE + Pyramin because of the lower rate of NORTRON FLOWABLE recommended.

**Control of wild oats has been inconsistent in Minnesota and North Dakota.

NORTRON FLOWABLE alone will also reduce competition from these HARD-TO-CONTROL weeds:

Annual Sowthistle (*Sonchus oleraceus*), Puncturevine (*Tribulus terrestris*), Shepherdspurse (*Capsella bursa-pastoris*), Purple nutsedge (*Cyperus rotundus*), Yellow nutsedge (*Cyperus esculentus*).

WEED SPECIES CONTROLLED

GRASS SEED

NORTRON FLOWABLE is a selective herbicide for use in ryegrass, tall fescue, and bentgrass seed crops in California, Oregon, and Washington. It effectively controls or reduces competition from those weed species listed below. NORTRON FLOWABLE may be applied preemergence to new seedlings of annual ryegrass or postemergence to established stands of perennial ryegrass, tall fescue, or bentgrass. Application to bentgrass is restricted to plantings which have been established for one year or longer. Soil should be moist at time of application.

NORTRON FLOWABLE is less effective when applied to dry soil. Rainfall shortly after application is necessary for activation. Make only one application per season, either preemergence or postemergence, not both.

WEEDS CONTROLLED

Annual bluegrass (*Poa annua*), Rattail fescue (*Festuca myuros*), Seedling volunteer wheat (*Triticum* spp.), Seedling volunteer barley (*Hordeum* spp.), Soft chess (*Bromus tectoris*), Seedling Wild oats (*Avena fatua*), Downy brome (*Bromus tectorum*), Common chickweed (*Stellaria media*), Common vetch (*Vicia sativa*), Common velvetgrass (*Holcus lanatus*), Manna-grass (*Glyceria* spp.).

Note: NORTRON FLOWABLE does not control volunteer ryegrass. Other registered herbicides will be required to control volunteer annual or perennial ryegrass seedlings.

WEED SPECIES CONTROLLED

COMMERCIAL SOD PRODUCTION

NORTRON FLOWABLE is a selective herbicide for use in established and newly planted tall fescue and perennial ryegrass grown for sod in California, Oregon, and Washing-

ton. NORTRON FLOWABLE may be applied preemergence or postemergence for the control of weed species listed below. Overhead irrigation or rainfall shortly after application is necessary for activation.

WEEDS CONTROLLED: Annual bluegrass (*Poa annua*), Large crabgrass (*Digitaria sanguinalis*), Green foxtail (*Setaria viridis*), Yellow foxtail (*Setaria glauca*), Canarygrass (*Phalaris canariensis*), Volunteer barley (*Hordeum* sp.) Volunteer wheat (*Triticum* sp.), Wild oats (*Avena fatua*), Rattail fescue (*Festuca myuros*), Common velvetgrass (*Holcus lanatus*), Manna-grass (*Glyceria* sp.), Downy brome (*Bromus tectorum*), Soft chess (*Bromus mollis*).

DIRECTIONS FOR USE

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

Read entire Directions for Use and Disclaimer of Warranties before using this product.

Do not apply this product in such a manner as to directly or through drift expose workers or other persons. The area being treated must be vacated by unprotected persons.

When NORTRON FLOWABLE is applied preemergence, or postemergence, the following statements apply:

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

Because certain states may require more restrictive reentry intervals for various crops treated with this product, consult your State Department of Agriculture for further information.

Written or oral warnings must be given to workers who are expected to be in a treated area or in an area about to be treated with this product. (Indicate specific oral warnings which inform workers of areas or fields that may not be entered without specific protective clothing, period of time field must be vacated, and appropriate actions to take in case of accidental exposure.) When oral warnings are given, warnings shall be given in a language customarily understood by workers. Oral warnings must be given if there is reason to believe that written warnings cannot be understood by workers. Written warnings must include the following information:

CAUTION: Area treated with NORTRON® FLOWABLE herbicide on (date of application). Do not enter without appropriate protective clothing (long pants, long-sleeved shirt, rubber gloves, and boots) until spray has dried. In case of accidental exposure, see Statement of Practical Treatment on the label.

RYEGRASS, TALL FESCUE, AND BENTGRASS SEED CROPS

(For use in California, Oregon, and Washington only): NORTRON FLOWABLE may cause stunting and stand reduction of newly seeded perennial ryegrass and tall fescue, if the crop is planted late in the fall and subjected to adverse climatic conditions or pesticides which restrict normal growth.

If vegetative matter or stover from previous crop was burned, sufficient rainfall or overhead irrigation must have occurred to dissipate the charcoal residue remaining after burning prior to NORTRON FLOWABLE treatment. Failure to allow for dissipation of charcoal residue may result in reduced weed control.

Do not mix NORTRON FLOWABLE with liquid fertilizers.

Spray equipment: Use a fixed boom power sprayer properly calibrated to a constant speed and rate of delivery. Do not use smaller than 50-mesh strainer. Avoid overlapping of spray swath. Shut off boom while starting, turning or stopping to avoid overlapping. Apply in 10 to 50 gallons of water per acre at low pressure (20-50 psi).

BEST AVAILABLE COPY

Soil preparation: A firm, fine and level seedbed free of trash and vegetative matter will provide best results from preemergence applications. Large clods can reduce effectiveness of NORTRON FLOWABLE. All existing vegetative growth should be thoroughly worked into the soil before treatment.

NEW SEEDINGS OF ANNUAL OR PERENNIAL RYEGRASS:

Before weed emergence: Apply NORTRON FLOWABLE after seeding and prior to weed emergence. For best results apply to moist soil. Apply 1½ to 3 pints per acre. Use the lower rate for control of annual bluegrass and common chickweed. For control of rattail fescue and other weeds listed use 2 to 3 pints per acre.

After weed emergence: Apply NORTRON FLOWABLE at earliest possible weed growth stage but not later than the 4-leaf stage. Rattail fescue, which is more difficult to control, must be treated no later than the 2-leaf stage. Apply 2¼ to 3¾ pints per acre. Use the highest rate where rattail fescue is present and where weed infestation is heavy.

NEW SEEDINGS OF FALL-PLANTED PERENNIAL RYEGRASS AND TALL FESCUE TREATED WITH DIURON PLUS CHARCOAL:

Timing of application: Apply NORTRON FLOWABLE following crop emergence and after sufficient rainfall and/or overhead irrigation has occurred to dissipate the charcoal band (approximately 4 inches). Use dosage rates listed in table below. Surface debris may result in reduced weed control. Failure to allow for complete dissipation of the charcoal band may result in reduced weed control within the crop row. For best results, apply NORTRON FLOWABLE to a moist soil surface.

Before using diuron, read the diuron label for rate recommendations, timing of applications, directions for use and precautionary statements. Do not exceed maximum dosage rates for either herbicide.

DOSAGE TABLE

Crop	Rate Per Acre	Remarks
Perennial ryegrass and Tall fescue	1½ to 3 pints	For effective control, annual bluegrass must be treated before the 4-leaf stage; rattail fescue, wild oats and volunteer wheat must be treated before the 2-leaf stage. Use the lower rate for control of annual bluegrass and common chickweed; use the higher rate for control of rattail fescue, wild oats and other weeds listed.

ESTABLISHED STANDS OF PERENNIAL RYEGRASS AND TALL FESCUE:

Before weed emergence: Apply NORTRON FLOWABLE at 2¼ to 3 pints per acre prior to weed emergence. Use higher rate where rattail fescue is expected to be a problem. For best results, apply to moist soil. Crop residue and debris will reduce effectiveness of treatment and should be removed or destroyed.

After weed emergence: Apply NORTRON FLOWABLE at earliest possible weed growth stage but not later than the 4-leaf stage. Rattail fescue, which is more difficult to control, must be treated no later than the 2-leaf stage. Apply 2¼ to 3 pints per acre. Use the higher rate where rattail fescue is present. Where weed pressure is very heavy and rattail fescue is at the maximum stage of growth for treating, a rate of 3¾ pints of NORTRON FLOWABLE is recommended.

ESTABLISHED STANDS OF BENTGRASS: Apply only to well-established stands which have been seeded for not less than 12 months. Straw from previous crop must be removed or destroyed. Failure to do so may result in reduced weed control.

Before weed emergence: Apply NORTRON FLOWABLE at 1½ to 3 pints per acre prior to weed emergence. Use higher rate where rattail fescue is expected to be a problem. For best results, apply to moist soil.

After weed emergence: Apply NORTRON FLOWABLE at earliest possible weed growth stage but no later than the 4-leaf stage. Rattail fescue, which is more difficult to control, must be treated no later than the 2-leaf stage. Apply at the rate of 1½ to 3 pints per acre. Use higher rate when rattail fescue is a problem. Do not apply more than 3 pints of NORTRON FLOWABLE per acre on bentgrass.

COMMERCIAL SOD PRODUCTION

(For Use in California, Oregon, and Washington Only):

Spray equipment: Use a fixed boom power sprayer properly calibrated to a constant speed and rate of delivery. Do not use smaller than a 50-mesh strainer. Avoid overlapping of spray swath. Shut off boom while starting, turning or stopping to avoid over-application. Make applications in 10 to 50 gallons of water per acre at low pressure (20 to 50 psi).

Soil preparation: All existing vegetative matter should be thoroughly worked into the soil surface before planting. Large clods, trash or vegetative matter left on the soil surface will reduce effectiveness of the NORTRON FLOWABLE treatment.

NEWLY PLANTED PERENNIAL RYEGRASS AND TALL FESCUE GROWN FOR SOD: Apply NORTRON FLOWABLE to newly planted areas when crop reaches the 2-3 leaf stage of growth. For best results, apply to moist soils.

Before weed emergence: Apply NORTRON FLOWABLE at 2¼ to 3 pints per acre prior to weed emergence. Use the higher rate where rattail fescue is expected to be a problem.

After weed emergence: Apply NORTRON FLOWABLE at earliest possible weed growth stage but no later than the 4-leaf stage. Rattail fescue, which is more difficult to control, must be treated no later than the 2-leaf stage. Apply NORTRON FLOWABLE at 2¼ to 3 pints per acre.

ESTABLISHED PERENNIAL RYEGRASS AND TALL FESCUE SOD: For preemergence and/or postemergence control of susceptible weeds, apply NORTRON FLOWABLE prior to weed emergence or at the earliest possible weed growth stage, but not later than the 4-leaf stage. For best results, apply to moist soils. Apply NORTRON FLOWABLE at 2¼ to 3 pints per acre. Repeat applications at 4 to 8 week intervals may be needed to maintain weed control. DO NOT apply more than 1 gallon of NORTRON FLOWABLE per acre per growing season.

SUGAR BEETS

Apply tank-mixes only in specified regions or states and in accordance with directions on label.

Do not mix NORTRON FLOWABLE or tank-mixes with liquid fertilizers.

PREPLANT INCORPORATION AND PREEMERGENCE APPLICATIONS

SOIL PREPARATION: The soil should be prepared according to good agricultural practices. Large clods can reduce the effectiveness of NORTRON FLOWABLE and tank-mixes. All existing vegetative growth should be thoroughly worked into the soil before treatment.

SPRAY EQUIPMENT: Apply NORTRON FLOWABLE alone or in tank-mixes to the soil using standard low pressure (20-50 psi) spray equipment. Spray equipment should be carefully calibrated before use and checked frequently during application to see that it is functioning properly. Do not use smaller than 50-mesh strainer. Uniformly apply the recommended rates of NORTRON FLOWABLE or NORTRON FLOWABLE tank-mixes in 10 to 60 gallons of water per acre on a broadcast basis. Avoid overlaps since crop injury may result. When applying NORTRON FLOWABLE or tank-mixes in a band, check to make certain that the band width is accurate for the dosage rate being applied.

The spray tank and lines should be thoroughly cleaned and rinsed prior to using NORTRON FLOWABLE.

INCORPORATION EQUIPMENT: Where soil incorporation is recommended use a hooded-power or ground-driven rotary tiller, rolling cultivator or similar equipment properly adjusted to uniformly incorporate NORTRON FLOWABLE or tank-mixes to a depth of 1 to 2 inches. Deeper incorporation may reduce effectiveness. Do not apply NORTRON FLOWABLE or tank-mixes through soil injector shanks. Incorporation should be accomplished prior to planting. If done after planting, proper precautions should be taken to avoid damaging or moving the crop seed. See below for Layering Application.

LAYERING APPLICATION:

Spring: Form beds with appropriate bedding equipment. Pre-irrigate field if necessary. Remove bed top with suitable de-ridging machinery to provide a minimum width of 10" across the top of the bed. Apply NORTRON FLOWABLE in a band at the recommended rate indicated in the appropriate regional dosage table and cover the treated band with 1 inch of soil using ditchers or discs equipment. Shape the bed with roller shaper and irrigate until the tops of the beds are thoroughly wetted. Irrigate from furrows on both sides of the row.

Fall: This method of application can be used when spring moisture is marginal or where irrigation water is not available at planting time. Fall bedding utilizes the winter-accumulated moisture to enhance activation of the herbicide and to aid in germination of the sugar beet crop.

Prepare the field (as for planting; plow, pack, and float, etc.), in the fall, usually late September or October. Apply NORTRON FLOWABLE in a band to the soil surface at the recommended rate indicated in the appropriate regional dosage table. Be sure that the soil surface to be treated is free of trash and vegetation.

Cover the treated bands with soil and form beds or ridges using ditchers or discs. In the spring when the soil is sufficiently dry to be worked, de-ridge the beds down to within ½" to 1" of the treated layer using suitable equipment such as the Kirchner bedder or Oregon Northslope harrow. When de-ridging, maintain the original bedding guidance system by using a bull tongue chisel, slide guides or similar equipment. This will ensure that the planter will follow in the treated band. Plant sugar beets in the de-ridged area when the soil conditions allow.

MIXING DIRECTIONS: When mixing NORTRON FLOWABLE in the spray tank with Pyramin or TCA, add NORTRON FLOWABLE first. Agitate spray solution thoroughly and continuously. See Pyramin label for additional mixing directions.

GENERAL APPLICATION: Sugar beets grown under rainfall: Apply NORTRON FLOWABLE alone or in a tank-mix preemergence at time of planting or shortly after, but prior to weed germination. NORTRON FLOWABLE or tank-mix does not require mechanical soil incorporation provided that sufficient rainfall occurs shortly following application to activate the chemical. One-half inch of rainfall is usually adequate for activation. In areas where rainfall can be marginal for activation, such as the Red River Valley (Minnesota and North Dakota), it is recommended that NORTRON FLOWABLE or the tank-mix be applied before or at the time of planting and incorporated into the soil.

Sugar beets grown under furrow irrigation. Apply NORTRON FLOWABLE alone or in a tank-mix to the soil surface preplant or at time of planting, but prior to weed germination, and incorporate into the soil. Where sugar beets are grown in beds, apply NORTRON FLOWABLE or tank-mix after bedding and incorporate. Since NORTRON FLOWABLE or tank-mix must have moisture to control weeds effectively, irrigate until tops of beds are thoroughly wetted.

Sugar beets grown under sprinkler irrigation: Apply NORTRON FLOWABLE alone or in tank-mix preemergence at

time of planting or shortly after, and irrigate prior to crop and weed germination. Repeat irrigation as necessary to maintain good moisture in upper soil layer. Apply at least one-half inch of water during first irrigation. Do not mechanically incorporate NORTRON FLOWABLE or tank-mix into the soil under sprinkler irrigation.

CULTURAL PRACTICES FOLLOWING APPLICATION:

When properly applied, NORTRON FLOWABLE alone or in a tank-mix will provide up to 10 weeks control of susceptible weed species. When cultivating fields in which NORTRON FLOWABLE or tank-mixes have been banded, care should be exercised to minimize the movement of untreated soil into the treated band. Where a broadcast application has been made, do not cultivate deeper than two inches, as this reduces the effectiveness of NORTRON FLOWABLE or tank-mixes.

NORTRON FLOWABLE ALONE

DOSAGE TABLE 1 (All Regions Except North Dakota and Minnesota):

Soil Texture	Rate of NORTRON FLOWABLE per Acre ¹			
	Broadcast	7-inch Band Width ²		
		22" Row	28" Row	30" Row
Coarse Textured Soils: Sands, loamy sands and sandy loams	2 1/4 to 3 1/4 Pints	1 1/4 to 1 1/2 Pints	1 1/4 to 1 Pints	1 1/4 to 1 Pints
Medium Textured Soils: Silt loams, clay loams which contain less than 3% organic matter	3 1/4 to 6 Pints	1 1/4 to 2 Pints	1 to 1 1/4 Pints	1 to 1 1/4 Pints
Fine Textured Soils: Clay loams which contain more than 3% organic matter and clays	6 to 7 1/2 Pints	2 to 2 1/4 Pints	1 1/4 to 2 Pints	1 1/4 to 1 1/2 Pints

¹Use the higher rate within each soil texture category on the finer texture soils and/or where Kochia, barnyardgrass or black nightshade are expected to be a problem.

²For other band or row widths, adjust the rate in proportion to the area actually treated.

DOSAGE TABLE 2 (North Dakota and Minnesota only):

Soil Texture	Broadcast	NORTRON FLOWABLE/acre
		7-inch Band Width ¹ 22" Row
Coarse Textured Soils: Sandy loams only	6 Pints	2 Pints
Medium Textured Soils: Silt loams and clay loams	6 Pints	2 Pints
Fine Textured Soils: Heavy clays	7 1/2 Pints	2 1/4 Pints

¹For other band or row widths, adjust the rate in proportion to the area actually treated.

NORTRON FLOWABLE + ANTOR® 4ES (tank-mix) CALIFORNIA, COLORADO, MONTANA, NEBRASKA, TEXAS, AND WYOMING ONLY:

This tank-mix controls these additional weeds: Italian ryegrass (annual) (*Lolium multi-florum*), Annual sowthistle (*Sonchus oleraceus*), Fall panicum (*Panicum dichotomiflorum*), Foxtail millet (*Setaria italica*), Groundcherry (*Physalis longifolia*), Junglerice (*Echinochloa colorum*), Prostrate pigweed (*Amaranthus blitoides*), Shepherdspurse (*Capsella bursa-pastoris*), Witchgrass (*Panicum capillare*).

NORTRON FLOWABLE + ANTOR 4ES tank-mix may be applied preplant incorporated where furrow irrigation is practiced using shallow incorporation implements such as rolling cultivators or harrows, or using power tillers set to a depth of 1-2 inches.

Preemergence applications of NORTRON FLOWABLE + ANTOR 4ES tank-mix may be used when application is followed by sprinkler irrigation prior to weed germination and crop emergence, or where rainfall can be expected to occur within 7-10 days after application.

ANTOR 4ES may also be utilized in sequential applications with NORTRON FLOWABLE where a broadcast preemergence treatment of ANTOR 4ES is followed by a band overlay of NORTRON FLOWABLE preemergence. The same dosage rates should be used as in the tank-mix.

Refer to Dosage Table 3 for recommended rates.

Before use, read the ANTOR 4ES label for additional information and precautions.

DOSAGE TABLE 3 (California, Colorado, Montana, Nebraska, Texas, and Wyoming only):

Soil Texture	ANTOR 4ES Per Acre ¹	NORTRON FLOWABLE Per Acre ¹
Coarse: Loamy sands and sandy loams	1.5 Quarts	1.5 Quarts
Medium: Loams and silt loams	2 Quarts	2 Quarts
Fine: Clay loams and clays	3 to 4 Quarts ²	2.5 Quarts

¹See section on Band Applications for calculations of proportional amounts.

²Use higher rate on heavy clay soils.

NORTRON FLOWABLE + PYRAMIN® (tank-mix)

This tank-mix controls these additional broadleaf weeds: Annual sowthistle (*Sonchus oleraceus*), Black mustard (*Brassica nigra*), Buffalobur (*Solanum rostratum*), Coast tiddleneck (*Amsinckia intermedia*), Common groundsel (*Senecio vulgaris*), Common ragweed (*Ambrosia artemisiifolia*), Cutleaf nightshade (*Solanum triflorum*), Groundcherry (*Physalis* spp.), Henbit (*Lamium amplexicaule*), Nettleleaf goosefoot (*Chenopodium murale*), Prickly lettuce (*Lactuca scariola*), Prostrate knotweed (*Polygonum aviculare*), Shepherdspurse (*Capsella bursa-pastoris*).

CALIFORNIA (winter-grown sugar beets only): Under sprinkler irrigation or where natural rainfall is adequate, apply this tank-mix preemergence. See Pyramin label for precautions regarding application of sprinkler irrigation. Where furrow irrigation is to be used, apply preplant incorporated. Prepare seedbed or form beds for planting. Then use rotary tiller type of incorporation and incorporate not more than 2 inches deep. Plant sugar beets and irrigate. Sub-irrigate until tops of beds are thoroughly wetted. Refer to Dosage Table 4 for recommended rates.

DOSAGE TABLE 4 (California, winter-grown sugar beets only):

Soil Texture	NORTRON FLOWABLE Per Acre		PYRAMIN FL Per Acre	
	Broadcast (For calibration purposes only)	10-inch Band Width ^{1,2} 30" Row	Broadcast (For calibration purposes only)	10-inch Band Width 30" Row
Coarse Textured Soils: Sands, loamy sands and sandy loams	NOT RECOMMENDED			
Medium Textured Soils: Silt loams, clay loams which contain less than 3% organic matter	3 to 3 1/4 Pints	1 to 1 1/4 Pints	4 Pounds	1 1/4 Pounds
Fine Textured Soils: Clay loams which contain more than 3% organic matter and clays	4 to 5 1/4 Pints	1 1/4 to 1 1/2 Pints	4 Pounds	1 1/4 Pounds

¹For other band or row widths, adjust rates in proportion to the area actually treated. Do not apply this mixture broadcast.

²Use the higher rate of NORTRON FLOWABLE within each soil texture category on the finer-textured soils and/or where volunteer barley or wheat are expected to be a problem.

PRECAUTIONS: Do not exceed 3/4 inch of sprinkler irrigation per set until the beets have two true leaves. Do not use the tank-mix under conditions where Pyramin alone is not recommended. Before use, read the Pyramin label for additional information and precautions.

CENTRAL AND EASTERN STATES, INCLUDING MICHIGAN AND OHIO: This tank-mix controls the additional weed, common ragweed, and other broadleaf weeds specified in the weed table. Apply preemergence at the time of planting or shortly after, but before weed germination, using recommended rates listed in Dosage Table 5. Do not mechanically incorporate the herbicides into the soil as crop injury may result. Do not use this tank-mix where Pyramin alone is not recommended. Before use, read Pyramin label for additional information and precautions.

*Pyramin® is a registered trademark of BASF Aktiengesellschaft.

DOSAGE TABLE 5 (Central and Eastern States Only):

Soil Texture	NORTRON FLOWABLE/Acre			PYRAMIN® FL/Acre		
	Broadcast	7-inch Band Width¹		Broadcast	7-inch Band Width¹	
		22" Row	28" Row		22" Row	28" Row
Coarse Textured Soils: Sandy loams only	3 Pints	1 Pint	¾ Pint	3 Pounds	1 Pound	¾ Pound
Medium Textured Soils: Silt and clay loams which contain less than 3% organic matter	4 Pints	1½ Pints	1 Pint	4 Pounds	1½ Pounds	1 Pound
Fine Textured Soils: Clay loams which contain more than 3% organic matter and clays	5 Pints	1½ Pints	1½ Pints	4 Pounds	1½ Pounds	1 Pound

¹For other band or row widths, adjust the rate in proportion to the area actually treated.

NORTRON FLOWABLE + ANTOR 4ES + PYRAMIN® (tank-mix)

MICHIGAN ONLY: A tank-mix of NORTRON FLOWABLE + ANTOR 4ES + Pyramin may be used in Michigan for control of the additional weeds:

Common ragweed (*Ambrosia artemisiifolia*), Wild mustard (*Brassica kaber*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), Common lambsquarters (*Chenopodium album*), Common purslane (*Portulaca oleracea*), Nettleleaf goosefoot (*Chenopodium murale*), Common chickweed (*Stellaria media*), Henbit (*Lamium amplexicaule*), Fanweed (stinkweed) (*Thlaspi arvense*), Kochia (*Kochia scoparia*), Russian thistle (*Salsola kali*), Volunteer barley (*Hordeum* sp.), Volunteer wheat (*Triticum* sp.), Ladysthumb (*Polygonum persicaria*).

For preemergence use without irrigation, apply the tank-mix to the soil surface at the time of planting or shortly after, but prior to weed germination. Use rates recommended in Dosage Table 6.

Do not use this mixture under conditions where Pyramin alone is not recommended. Before use, read the Pyramin and ANTOR 4ES labels for additional information and precautions.

DOSAGE TABLE 6 (Michigan only)

Soil Texture	Broadcast Rates Per Acre		
	NORTRON FLOWABLE (qts.)	ANTOR 4ES (qts.)	PYRAMIN® FL (qts.)
Coarse Textured Soils: Sandy loams only	3	1.5	2.25
Medium Textured Soils: Loams, silt loams and clay containing more than 3% organic matter	4	2	2.25
Fine Textured Soils: Clay loams and clays containing more than 3% organic matter	4	3	2.25

NORTRON FLOWABLE + TCA** (tank-mix)

CENTRAL AND EASTERN STATES, INCLUDING MICHIGAN AND OHIO: The control of certain grass weeds, particularly yellow foxtail and barnyardgrass, can be enhanced by the use of this tank-mix.

Apply preemergence at time of planting or shortly after but prior to weed germination. Apply at rates recommended in Dosage Table 7. Before use, read TCA label for additional information and precautions.

DOSAGE TABLE 7 (Central and Eastern States, including Michigan and Ohio)

Soil Texture	NORTRON FLOWABLE/Acre		TCA/Acre¹	
	Broadcast	7-inch Band²	Broadcast	7-inch Band²
Coarse Textured Soils: Sandy loams only	3 Pints	¾ Pints	3 Quarts	1½ Pints
Medium Textured Soils: Silt and c'ty loams which contain less than 3% organic matter	4 Pints	1 Pint	1 Gallon	1 Quart
Fine Textured Soils: Clay loams which contain more than 3% organic matter and clays	6 Pints	1½ Pints	1 Gallon	1 Quart

¹Based on commercial liquid formulation containing the equivalent of 6 pounds of dry 80% sodium TCA per gallon.

²For other band or row widths, adjust the rate in proportion to the area actually treated.

EPTAM® (fall-applied) + NORTRON FLOWABLE (spring-applied)

NORTH DAKOTA AND MINNESOTA ONLY (sequential treatment): The control of certain weeds, particularly yellow foxtail and redroot pigweed, can be improved by the sequential treatment of Eptam 7E applied in the fall followed by a spring application of NORTRON FLOWABLE. Furthermore, the addition of NORTRON FLOWABLE provides up to 10 weeks' control of susceptible weeds.

Apply Eptam 7E in the fall in accordance with directions on the label. Apply NORTRON FLOWABLE in the spring to the soil surface preplant or at the time of planting and incorporate into the soil. Apply at recommended rates listed in Dosage Table 8. This sequential treatment is not recommended for use on coarse-textured soils.

Do not use in areas or under conditions where Eptam 7E is not recommended. Before use, read Eptam 7E label for additional information and precautions.

DOSAGE TABLE 8 (North Dakota and Minnesota only)

Soil Texture	NORTRON FLOWABLE Per Acre	
	Broadcast	7-inch Band Width¹
		22" Row
Coarse Textured Soils: Sands, loamy sands and sandy loams	NOT RECOMMENDED	
Medium Textured Soils: Silt loams and clay loams	6 Pints	2 Pints
Fine Textured Soils: Heavy clays	6 Pints	2 Pints

¹For other band or row widths, adjust the rate in proportion to the area actually treated.

POSTEMERGENCE APPLICATION

(For use in California, Michigan, Ohio, Minnesota, and North Dakota only):

GENERAL INFORMATION

The tank-mixes of NORTRON FLOWABLE plus BETANEX® and NORTRON FLOWABLE plus BETAMIX® applied postemergence broaden and enhance the control of weeds. Furthermore, control of susceptible weeds which may germinate after treatment can be obtained provided overhead moisture is applied to activate NORTRON FLOWABLE. The choice of tank-mixes is dependent upon weed species present. NORTRON FLOWABLE ~~alone~~ is not recommended for postemergence use.

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Timing of Application: Apply the tank-mix NORTRON FLOWABLE + BETANEX or NORTRON FLOWABLE + BETAMIX when sugar beets have at least 4 fully expanded true leaves. Apply at rates recommended in the Dosage Tables. Use the higher rate of NORTRON FLOWABLE where increased residual weed control is desired. Where Eptam has been applied preplant (fall or spring applied), do not apply NORTRON FLOWABLE + BETANEX or BETAMIX tank-mix before the sugar beets have 6 expanded true leaves.

Sugar beets may be killed or severely injured if treated at earlier stages of crop growth. See Postemergence Use Precautions for additional information on proper use.

Mixing the Spray: NORTRON FLOWABLE, BETANEX and BETAMIX are formulated as emulsifiable concentrates and are easily mixed. Add NORTRON FLOWABLE to the water in the spray tank followed by BETANEX or BETAMIX while agitating the spray solution thoroughly. Refer to the BETANEX or BETAMIX labels for additional precautions and information on mixing.

Spray Equipment: Apply the mixture using standard low pressure (20-60 psi) spray equipment. Ensure that the sprayer is thoroughly clean. Spray equipment should be carefully calibrated before use and checked frequently during application to see that it is functioning properly. Uniformly apply the recommended rate in 20-60 gallons of water per acre on a broadcast basis. Avoid overlaps, since crop injury may result. When applying in a band, check to make certain that the band width is accurate for the dosage rate being applied. Do not use strainer smaller than 50-mesh.

Moisture Following Application/Residual Weed Control: Rainfall or sprinkler irrigation within 6 hours of spraying may reduce weed control; however, moisture after this period of time is advantageous for moving NORTRON FLOWABLE into the 1-2" layer of soil where it can be absorbed by the roots of sprayed and germinating weeds to provide optimum control. One-half inch or more of sprinkler irrigation is required to activate NORTRON FLOWABLE on most soil types.

Residual control of weeds is dependent upon soil moisture conditions, rate of herbicide used, and soil texture. The activity of NORTRON FLOWABLE in the soil is reduced as the soil texture becomes finer and organic matter increases.

CAUTION:

MINNESOTA AND NORTH DAKOTA—Do not apply to crop which has been previously treated with NORTRON FLOWABLE.

CALIFORNIA, MICHIGAN AND OHIO—Following a preemergence treatment of NORTRON FLOWABLE, do not apply NORTRON FLOWABLE postemergence where more than 6 pints were applied preemergence. No more than a total of 1 gallon of NORTRON FLOWABLE should be applied in a single growing season. See Postemergence Use Precautions for additional information on proper use.

NORTRON FLOWABLE + BETANEX (tank-mix)

MICHIGAN, OHIO, MINNESOTA, AND NORTH DAKOTA ONLY: NORTRON FLOWABLE applied postemergence in a tank-mix with BETANEX broadens and enhances the control of troublesome weeds. Furthermore, preemergence control of susceptible weeds which may germinate following treatment can be obtained provided overhead moisture is sufficient to activate NORTRON FLOWABLE.

WEED SPECIES CONTROLLED:

Group I: Weeds controlled up to the 6-leaf stage. Redroot pigweed (*Amaranthus retroflexus*), Wild mustard (*Brassica kaber*), Nettleleaf goosefoot (*Chenopodium murale*), London rocket (*Sisymbrium irio*), Common lambsquarters (*Chenopodium album*).

Group II: Weeds controlled up to the 4-leaf stage.

Common chickweed (*Stellaria media*), Black nightshade (*Solanum nigrum*), Common ragweed (*Ambrosia artemisiifolia*), Shepherdspurse (*Capsella bursa-pastoris*), Groundcherry (*Physalis lanceifolia*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), Ladysthumb (*Polygonum persicaria*).

Group III: Weeds controlled up to the 2-leaf stage.

Annual sowthistle (*Sonchus oleraceus*), Common purslane (*Portulaca oleracea*), Wild buckwheat (*Polygonum convolvulus*), Kochia* (*Kochia scoparia*)

DOSAGE TABLE 9 (Michigan, Ohio, Minnesota and North Dakota only):

Rate of NORTRON FLOWABLE Per Acre ¹					Rate of BETANEX Per Acre ¹				
Broadcast Rate	Band ² Width (in.)	Row Spacing			Broadcast Rate	Band ² Width (in.)	Row Spacing		
		22"	28"	30"			22"	28"	30"
2 1/4-3		1 1/4-1	1 1/4-1 1/4	1 1/4-1 1/2	4 1/4-6		1 1/4-2	1 1/4-1 1/4	1-1 1/4
Pints	7	Pint	Pint	Pint	Pints	7	Pints	Pints	Pints

¹Use the higher rate on larger weeds and sugar beets.

²For other band or row widths, adjust rates in proportion to the area actually treated.

NORTRON FLOWABLE + BETAMIX (tank-mix)
CALIFORNIA, MICHIGAN, OHIO, MINNESOTA AND NORTH DAKOTA ONLY: NORTRON FLOWABLE applied postemergence in a tank-mix with BETAMIX broadens and enhances the control of troublesome weeds. Furthermore, preemergence control of susceptible weeds which may germinate following treatment can be obtained provided overhead moisture is sufficient to activate NORTRON FLOWABLE.

WEED SPECIES CONTROLLED:

Group I: Weeds controlled up to the 6-leaf stage.

Redroot pigweed (*Amaranthus retroflexus*), Wild mustard (*Brassica kaber*), Nettleleaf goosefoot (*Chenopodium murale*), London rocket (*Sisymbrium irio*), Common lambsquarters (*Chenopodium album*).

Group II: Weeds controlled up to the 4-leaf stage.

Common chickweed (*Stellaria media*), Black nightshade (*Solanum nigrum*), Common ragweed (*Ambrosia artemisiifolia*), Shepherdspurse (*Capsella bursa-pastoris*), Groundcherry (*Physalis lanceifolia*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), Ladysthumb (*Polygonum persicaria*), Prostrate pigweed (*Amaranthus blitoides*), Coast fiddleneck (*Amsinckia intermedia*).

Group III: Weeds controlled up to the 2-leaf stage.

Annual sowthistle (*Sonchus oleraceus*), Kochia* (*Kochia scoparia*), Common purslane** (*Portulaca oleracea*), Prostrate knotweed (*Polygonum aviculare*), Wild buckwheat (*Polygonum convolvulus*), Green foxtail*** (*Setaria viridis*), Yellow foxtail (pigeongrass)*** (*Setaria glauca*), Annual bluegrass*** (*Poa annua*), Canarygrass*** (*Phalaris canariensis*).

*Spray kochia while in the rosette stage, less than 1" in diameter.

**Group II weed in California.

***For best control, overhead moisture required

DOSAGE TABLE 10 (California, Michigan, Ohio, Minnesota and North Dakota only):

Rate of NORTRON FLOWABLE Per Acre ¹					Rate of BETAMIX Per Acre ¹				
Broadcast Rate	Band ² Width (in.)	Row Spacing			Broadcast Rate	Band ² Width (in.)	Row Spacing		
		22"	28"	30"			22"	28"	30"
2 1/4-3		1 1/4-1	1 1/4-1 1/4	1 1/4-1 1/2	4 1/4-6		1 1/4-2	1 1/4-1 1/4	1-1 1/4
Pints	7	Pint	Pint	Pint	Pints	7	Pints	Pints	Pints

¹Use the higher rate on larger weeds and sugar beets.

²For other band or row widths, adjust rates in proportion to the area actually treated.

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PREPLANT AND PREEMERGENCE USE PRECAUTIONS: NORTRON FLOWABLE applied alone or in tank-mixes according to label directions and under normal growing conditions may cause temporary leaf fusion, distortion and stunting. Crop injury may occur during early growth when crop is stressed due to herbicide residue carryover, highly saline or alkaline soils, unusually cold and wet weather or improperly placed fertilizers or soil insecticides.

Unusually dry, windy weather following application of NORTRON FLOWABLE, which dries the upper soil layer, may reduce effectiveness.

Where NORTRON FLOWABLE is used in a tank-mix with TCA, do not use treated sugar beet tops for feed or forage.

POST-EMERGENCE USE PRECAUTIONS: Make only one application of NORTRON FLOWABLE + BETANEX or BET-AMIX tank-mix during each growing season.

Do not apply NORTRON FLOWABLE + BETANEX or BET-AMIX tank-mix to sugar beets later than 90 days prior to harvest.

Crop Planting Precautions: If crop is lost due to unfavorable growth conditions following treatment, do not replant with crops other than sugar beets in treated land during the same season. If fields are replanted to sugar beets, reseed into treated band. Do not retreat field with NORTRON FLOWABLE in the same season.

NORTRON FLOWABLE + BETANEX OR BETAMIX MAY CAUSE SUGAR BEET INJURY OR STAND LOSS IF THE CROP IS UNDER STRESS FROM ONE OR MORE OF THE FOLLOWING CONDITIONS:

- ☐ Rapid climatic changes from cool, overcast days, to hot (80°F or over), bright days. When the air temperature is, or is likely to be, above 80°F on the day of spraying, application should be made in the evening when the temperature is lower.
- ☐ Frost within seven days following treatment;
- ☐ Windy or drought conditions;
- ☐ Use of a preplant or preemergence herbicide or other chemicals;
- ☐ Insect or disease injury;
- ☐ Close cultivation.

If stress conditions are present, delay application until crop has recovered.

DO NOT OVERTREAT: The use of higher-than-recommended rates may cause beet injury.

Do not spray while dew is present.

Rainfall or sprinkler irrigation within 6 hours of application may reduce weed kill.

Do not allow spray drift to contact adjacent crops which may be injured by spray drift.

IMPORTANT: This tank-mix may cause temporary growth retardation and/or chlorosis or tip-burn on sugar beets. Sugar beets usually resume normal growth within 10 days.

IMPORTANT: READ BEFORE USE

By using this product, user accepts the following conditions, warranty, disclaimer of warranties and limitations of liability.

CONDITIONS: The directions for use of this product are believed to be adequate and should be followed carefully. However, because of extreme weather and soil conditions, manner of use and other factors beyond NOR-AM Chemical Company's control, it is impossible for NOR-AM to eliminate all risks associated with the use of this product. As a result, crop injury or ineffectiveness is always possible.

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