



RIZOSPHERE  
AG SUPPLEMENT APPLICATION RATES  
AGRICULTURAL USE REQUIREMENTS

RizoSphere may be applied by ground or air. If applied by air, use 6 to 10 gallons of water per acre. If applied by ground use 5 to 25 gallons of water per acre.

For turf grass: RizoSphere may be applied by ground using 0.4 to 1 gallons of water per 1,000 square feet. Test results have shown that this product can stimulate higher yields through a larger root system, earlier fruiting, increased fruit retention and improved resistance to Environmental stress.

RizoSphere is a means to increase plant efficiency. Equals approximately 2000 pounds of manure per acre and 200 pounds of phosphate per acre and includes beneficial bacteria.

**GENERAL CHEMIGATION INSTRUCTIONS**

Apply this product only through sprinkler systems including center pivot, lateral move, side roll, traveler, big gun, solid set or hand move irrigation systems. Do not apply this product through any other type of irrigation system. Crop injury, lack of effectiveness, or illegal fertilizer residues in the crop can result from non-uniform distribution of treated water.

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

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

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

**CHEMIGATION SYSTEMS CONNECTED TO PUBLIC WATER SYSTEMS**

“Public water system” means a system for the provision to the public of piped water for human consumption if such system has at least 15 service connections or regularly serves an average of at least 25 individuals daily at least 60 days out of the year. Chemigation systems connected to public water systems must contain a functional, reduced- pressure zone, backflow preventer (RPZ) or the functional equivalent in the water supply line upstream from the point of fertilizer introduction. As an option to the RPZ, the water from the public water system should be discharged into a reservoir tank prior to fertilizer introduction. There shall be a complete physical break (air gap) between the outlet end of the fill pipe and the top or overflow rim of the reservoir tank of at least twice the inside diameter of the fill pipe. The fertilizer injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump. The fertilizer injection

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

The system must contain functional interlocking controls to automatically shut off the fertilizer injection pump when the pump motor stops, or in cases where there is no water pump, when the water pressure decreases to the point where fertilizer distribution is adversely affected. Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump), effectively designed and constructed of materials that are compatible with fertilizers and capable of being fitted with a system interlock.

The fertilizer supply tank should be agitated throughout the application of RizoSphere . Except for turfgrass Rhizosphere should be applied at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop but not to exceed 10 fluid ounces of RizoSphere per acre per application.

Fill the supply tank half full of water, add the appropriate amount of RizoSphere to the tank and finish filling the tank with water.

### **SPRINKLER CHEMIGATION**

The system must contain a functional check valve, vacuum relief valve, and low pressure drain appropriately located on the irrigation pipeline to prevent water source contamination from back flow.

The fertilizer injection pipeline must contain a functional, automatic, quick closing check valve to prevent the flow of fluid back toward the injection pump. The fertilizer injection pipeline must also contain a functional, normally closed, solenoid operated valve located on the intake side of the injection pump and connected to the system interlock to prevent fluid from being withdrawn from the supply tank when the system is automatically or manually shut down.

The system must contain functional interlocking controls to automatically shut off the fertilizer injection pump when the water pump motor stops. The irrigation line or water pump must include a functional pressure switch which will stop the water pump motor when the water pressure decreases to the point where the fertilizer distribution is adversely affected.

Systems must use a metering pump, such as a positive displacement injection pump (e.g., diaphragm pump) effectively

designed and constructed of materials that are compatible with fertilizers and capable of being fitted with a system interlock. The fertilizer supply tank should be agitated throughout the application of RizoSphere. Except for turfgrass, RizoSphere should be applied at the end of the irrigation period in a sufficient amount of water to allow proper coverage of plant or crop but not to exceed 10 fluid ounces of RizoSphere per acre per application.

Fill the supply tank half full of water, add the appropriate amount of RizoSphere to the tank and finish filling the tank with water.

## SEED TREATMENT SPECIAL NOTE FOR ALL DIRECT SEEDED CROPS

Acting through its special combination of plant growth activators and enhancers, RizoSphere is a ready to use seed dressing that aids in enhanced germination and early season root and top growth. Use RizoSphere as an in-furrow spray at the rate of 4 ounces per acre.

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Use RizoSphere at the rate of 4 to 6 ounces per 100 lbs of seed. Use of the higher rate is recommended when conditions favor poor germination such as cool soil and low germination seed is used. Sufficient water needs to be added to insure proper coverage. Improper coverage will minimize product performance.

### SEED TYPE:

Alfalfa	Sugarbeets	Sorghum
Corn	Cabbage	Tomatoes
Melons	Cucumber	Cauliflower
Peppers	Okra	Eggplant
Squash	Rye	Peanuts
Barley	Sunflowers	Soybeans
Cotton	Carrots	Wheat
Oats	Dry Beans	
Rice	Onions	
Celery	Peas	
Lettuce	Spinach	

### RED or WHITE POTATOES:

Dip potato seed pieces in a solution 2 part RizoSphere to 350 parts water (0.80 fluid ounces per gallon) for 1 minute or spray the seed pieces until thoroughly covered and wetted. RizoSphere can be used with a fungicide program.

### SWEET POTATOES and YAMS:

Dip potato slips in a solution of 2-part RizoSphere to 350 parts water (0.80 fluid ounces per gallon of water) for 60 seconds. RizoSphere can be used with a fungicide program.

### MECHANICAL SEED TREATERS

Apply the appropriate amount of RizoSphere to a pre-measured amount of seed and mix thoroughly until all seeds are uniformly coated. Seed may be treated in this manner and stored until used for planting. Do not use treated seed for food, feed or oil purposes. An approved dye must be added to distinguish RizoSphere treated seed and prevent inadvertent use for food, feed or oil purposes. Seed treated with this product must be labeled according to all applicable requirements of the Federal and State seed laws.

Partially fill broadcast spreader with a pre-measured amount of seed. Apply the appropriate amount of RizoSphere diluted with water on the surface of the seed. Mix with a stick or paddle until all the seeds are coated. Repeat procedure until broadcast spreader is full. Treat only the amount of seed needed for immediate use and planting. Do not store seed beyond planting season.

## SPECIAL NOTE FOR ALL TRANSPLANTED CROPS

Two programs are recommended for this program.

A. Dip or spray roots in a solution of 1 ounce RizoSphere AG per gallon of water prior to transplanting.

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B. Bedding seedlings may be sprayed or drenched in flats 12 to 24 hours before transplanting to reduce shock with solution of 1 ounce RizoSphere per gallon of water. The foliar program should begin two weeks after transplanting. A combination of the transplant and foliar spray is most effective.

## FOLIAR SPRAY PROGRAM FOR VEGETABLE CROPS

### BEANS AND PEAS

1st Application – Apply 8 ounces per acre when first tri-foliolate is un-folded.

2nd Application – Apply 8 ounces per acre two weeks after first application.

3rd Application – Apply 8 ounces per acre at first bloom.

### ASPARAGUS, BROCCOLI, CABBAGE, CONOLA, CELERY, LETTUCE, MINT, AND SPINACH

1st Application – Apply 8 ounces per acre when the fifth leaf begins to unfold.

2nd Application – Apply 8 ounces per acre two weeks after the first application.

3rd Application – Apply 8 ounces per acre two weeks after the second application.

### CANTALOUPE, CUCUMBER, MUSKMELON, WATERMELON, HONEYDEW, OKRA, AND SQUASH

1st Application – Apply 8 ounces per acre when the third leaf begins to unfold.

2nd Application – Apply 8 ounces per acre two weeks after the first application.

3rd Application – Apply 8 ounces per acre two weeks after the second application.

### EGGPLANT, PEPPERS, AND TOMATOES

1st Application – Apply 8 ounces per acre when plants have 3 true leaves.

2nd Application -- Apply 8 ounces per acre at pre-bloom stage.

3rd Application – Apply 8 ounces per acre at fruit set.

### SWEET CORN AND POP CORN

1st Application – Apply 8 ounces per acre when plants are at the 4-6 leaf stage

2nd Application – Apply 8 ounces per acre at 1-10 leaf stage

3rd Application – Apply 8 ounces per acre just prior to tasseling. (Optional)

**RED or WHITE POTATOES** Apply according to one of the following schedules:

To increase tuber size number and promote better rooting:

1st Application – Apply 8 ounces per acre at tuber initiation.

2nd Application – Apply 8 ounces per acre 3 weeks after first application. To enhance tuber size and uniformity:

1st Application – Apply 8 ounces per acre at tuber initiation.

2nd Application – Apply 8 ounces per acre at onset of tuber bulking.

### CARROTS, PARSLEY, RADISHES, AND TURNIPS

1st Application – Apply 8 ounces per acre when the plants have 3 true leaves.

2nd Application – Apply 8 ounces per acre 2 weeks after first application.

3rd Application – Apply 8 ounces per acre 2 weeks after the second application.

### SWEET POTATOES AND YAMS

1st Application – Apply 0.40 to 0.80 ounces per acre on a band just wide enough to cover all the plants seven to fourteen days after transplanting.

2nd Application – Apply 1 ounce per acre in a band as above at 28 days after transplanting.

3rd Application – Apply 1 ounce per acre per week along with a foliar fertilizer such as 15-5-5 at the rate of 32

fluid ounces per acre. Continue this program on a weekly basis until potatoes have desirable harvest size.

## FOLIAR SPRAY FOR FRUIT CROPS

### CITRUS (GRAPEFRUIT, LEMON, LIME, AND ORANGE)

1st Application - apply 6 to 12 ounces per acre at first bloom. 2nd

Application - apply 6 to 12 ounces per acre 2 to 3 weeks later.

Additional applications at 6 to 12 ounces per acre may be applied if there is an extended bloom period.

### POME (APPLE, MAYHAW)

1st Application – Apply 6 to 12 ounces per acre shortly prior to or at first bloom.

2nd Application – Apply 6 to 12 ounces per acre two to three weeks after first application.

### STONE (PEACH)

1st Application – Apply 6 to 12 ounces per acre prior to or at first bloom.

2nd Application – Apply 6 to 12 ounces per acre two to three weeks after first application.

### STRAWBERRIES AND GRAPES

1st Application – Apply 8 ounces per acre shortly prior to or at first bloom.

2nd Application – Apply 8 ounces per acre two to three weeks after first application.

### BANANAS

1st Application – Apply 6 to 12 ounces per acre prior to or at first bloom.

2nd Application – Apply 6 to 12 ounces per acre two to three weeks after first application.

### GUAVA AND PAPAYA

1st Application – Apply 8 ounces per acre prior to or at first bloom.

2nd Application – Apply 6 to 12 ounces per acre two to three weeks after first application.

## FOLIAR SPRAY PROGRAM FOR FIELD CROPS

**COTTON Non-Transgenic Varieties:** Apply according to one of the following schedules:

Schedule A: 1st Application – Apply 4 fluid ounces of RizoSphere per 50 lbs. of seed in the hopper box OR planting.

Apply 4 fluid ounces of RizoSphere per acre in the seed furrow at

Schedule B:

2nd Application – Apply 4 fluid ounces per acre at the pinhead square stage. This can be applied in a tank mix that contains 8 ounces per acre of mepiquate chloride.

3rd Application – Apply 8 ounces per acre at early bloom.

1st Application – Apply 4 fluid ounces per acre on a band at the 3 to 7 leaf stage. 2nd

Application – Apply 8 fluid ounces at the pinhead square stage. This can be applied in a tank mix that has 8 ounces per acre of mepiquat chloride.

3rd Application – Apply 8 ounces per acre at early bloom.

## COTTON

Transgenic Varieties: (cotton varieties that have been genetically manipulated to have insect-resistance and/or herbicide resistance built in) 1st Application – Use according to one of the following methods.

Apply 6 fluid ounces of RizoSphere per 50 lbs. of seed in the hopper box. OR Apply 4 fluid ounces per acre in the seed furrow at planting.

2nd Application – Apply 8 ounces per acre at pinhead square. This can be applied in a tank mix that has 8 ounces per acre of mepiquat chloride.

3rd Application – Repeat the above application at first bloom. If needed for vegetative growth control, repeat the above application at mid bloom.

Higher rates and/or late season applications may be warranted under high stress conditions where square and/or boll retention is needed. During the bloom and post bloom period, additional applications or higher rates of RizoSphere may be applied but do not exceed a total of 24 fluid ounces per acre per season.

## FIELD CORN

RizoSphere works best on varieties that have a tendency for multiple earing.

1st Application – Seed treatment - see Seed Treatment Section

2nd Application – Apply 8 ounces per acre at the 3-4 leaf stage.

3rd Application – Apply 8 ounces per acre at the 8-11 leaf stage

## GRAIN SORGHUM:

1st Application – Seed treatment - see Seed Treatment Section

2nd Application – Apply 8 ounces per acre at the 3-5 leaf stage.

3rd Application – Apply 8 ounces per acre after the 8th but before the 12th leaf stage.

## PEANUTS:

1st Application – Apply 8 ounces per acre at the 3-5 leaf stage.

2nd Application – Apply 8 ounces per acre at early flowering.

3rd Application – Apply 8 ounces per acre at initial pegging.

## SOYBEANS

Apply to foliage according to one of the following recommended schedules.

Schedule A:

OR

Schedule B:

1st Application – Seed treatment - see Seed Treatment Section

2nd Application – Apply 8 ounces per acre at the 3-5 trifoliate leaf stage.

3rd Application – Apply 8 ounces per acre prior to bloom.

If the first application is missed apply 8 fluid ounces per acre prior to bloom.

## SUGARBEETS:

1st Application – Apply 8 ounces per acre after thinning.

2nd Application – Apply 8 ounces per acre two to three weeks after first application.

## SUGARCANE:

1st Application – Use one of the following methods. Apply 2 fluid ounces per acre in the furrow at planting. OR

Apply 8 fluid ounces per acre at 2-3 leaf stage.

2nd Application – Apply 8 ounces per acre one month after first application

## **ALFALFA, BARLEY, OATS, RYE, AND WHEAT**

Apply according to one of the following schedules.

Schedule A:

OR

Schedule B:

1st Application – Apply 8 ounces per acre prior to jointing.

2nd Application – Apply an additional 8 ounces per acre at the flag leaf stage.

If the first application is missed in schedule A, apply 8 ounces per acre at the flag leaf stage.

## **FLAX**

Apply according to one of the following schedules:

Schedule A: 1st Application – Apply 8 ounces per acre when plant is 2-4 inches tall.

2nd Application – Apply 8 ounces per acre two to three weeks later.

## **SUNFLOWERS:**

1st Application – Apply 8 ounces per acre at 4 true leaves.

2nd Application – Apply 8 ounces per acre two to three weeks later.

## **FOLIAR SPRAY PROGRAM FOR RICE**

RizoSphere should be applied at 8 ounces per acre as a foliar spray to the plant during either one of the following stages of development.

**PRIMARY RECOMMENDATIONS** — 3 to 7 LEAF STAGE: This application must be made after the rice seedling has 3 fully

emerged leaves and the fourth leaf are beginning to emerge but before the seedling has completed development of 7 leaves or

3 tillers. This period for application generally begins 3 to 6 weeks after seeding and ends 5 to 9 weeks after seeding. The duration of this period depends on the variety and the growing conditions. This application may be made in conjunction with corresponding herbicide application.

**ALTERNATE RECOMMENDATION** — TWO MILLIMETER (mm) PANICLE GROWTH STAGE: If the primary application is missed,

RizoSphere can be applied to stimulate cell differentiation in the developing panicle. This application must be made when no more than 10% of the main culms are at the 2mm panicle growth stage. The

2mm panicle growth stage occurs immediately after internode elongation or joint movement has

begun. RizoSphere must be applied as soon as internode elongation is detected so the 2mm panicle

growth stage is not missed. It is better to apply slightly early than to apply late. **IMPORTANT:** timing of

the application at 2mm growth stage is critical. Check the entire field for stage of plant development.

Large fields may require split applications on upper and lower ends of the field to ensure proper timing throughout the field.

## **PASTURE**

Apply 8 ounces per acre at 90 day intervals. Allow 2 week growth before grazing resumes.

## **HAY/FORAGE**

Apply 16 ounces per acre at first sign of greening in the spring. Apply 16 ounces per acre after each cutting.

## TURFGRASS

On all turfgrass regardless of use, no more than 12 fluid ounces per 1000 square feet per month should be used.

**WARM SEASON TURF:** (Bermuda, Bermuda hybrids, Zoysia, Centipede, St. Augustine, etc.)

For lower traffic areas and where RizoSphere AG is used as a maintenance program, begin applications early in the growing season. Apply at the rate of 2 to 4 fluid ounces per 1000 square feet. Maintenance application should be made on a two to three week schedule throughout the growing season. Application may be made with foliarly-applied urea for added benefits.

**COOL SEASON TURF:** (Tall Fescue, Rye, Bentgrass, Bluegrass, etc.). Apply 1.5 to 4 ounces per 1000 square feet in fall, or when

stand is established. Repeat application in late winter when grasses begin to grow actively.

**APPLICATION WITH FOLIARLY-APPLIED UREA:** Maximum benefit and color can be achieved when RizoSphere applications are made with foliarly-applied urea solutions. To prepare urea solution, dissolve 46% urea into spray solution at the rate of 1.0 lb. per 5000 square feet to be sprayed and apply with recommended rate of RizoSphere.

## SPECIFIC RATES OF APPLICATION

**TEES AND GREENS:** Apply 2 to 4 ounces per 1000 square feet on a 2 week schedule throughout the growing season. Begin in early spring after grasses have begun to grow.

Sunbelt and transition zones should continue spray program throughout playing season. Courses north of the transition zone should continue applications thru September.

**FAIRWAYS:** Begin applications in early spring as soon as grasses have begun to actively grow. Apply 1 ounce per 1000 square feet and repeat on a monthly schedule as long as grass is growing.

**PRE-TOURNAMENT QUICK GREEN UP:** Apply at the rate of 2 to 4 ounces per 1000 square feet in conjunction with urea solution 4 to 5 days before tournament. Make application with a minimum spray volume of 0.50 gallon of water per 1000 square feet.

**THE SPRING DORMANCY BREAK:** Apply 2 fluid ounce per 1000 square feet in spring as soon as new growth (opening) is visible. Raking of thatch prior to making this application is most desirable. Application at this time generates rapid growth and often can reduce incidence of "spring die hack" on certain species of grass.

**FALL APPLICATION FOR WINTER HARDINESS:** Make 2 applications 7-10 days apart in late summer or early fall just prior to cessation of normal active growth. Apply 2 to 4 ounces per 1000 square feet. Make application with a spray volume of 0.50 gallon of water per 1000 square feet. Applications at this time will greatly increase root mass and depth of roots. Winter kill problems are often greatly reduced.

## COMMERCIAL TURF, CEMETERIES, ATHLETIC FIELDS, GOLF COURSES, and OTHER FINE TURF

Applications of 4 to 8 ounces per 1000 square feet made at any point during the growing season will produce desirable results. Make applications during the very early growth stages and continue on a monthly schedule throughout the growing season. Healthier and more beautiful turf can be realized in high traffic areas such as greens and tees by making regular applications every two weeks.

## SOD FARMS

Apply 8 to 16 fluid ounces per acre on a monthly basis during growing season. Two weeks prior to cutting sod apply 8 to 16 ounces per acre.

## SPECIFIC RATES OF APPLICATION



After sod is cut, a re-establishment program is necessary. This program should start as soon as there is any greening over 30% of the area.

Spray with 8 to 16 ounces per acre of RizoSphere AG. Repeat in two weeks, and thereafter, once per month throughout the growing season. Make a final application of 8 to 16 ounces per acre two weeks before dormancy.

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Start the program again as soon as some green-up has started in the spring.

When species started from seed have reached 1 inch of height, the monthly treatment may be started and followed in the same way as non-seeded varieties.

#### **SPECIAL NOTE FOR ALL DIRECT SEEDED GRASSES**

Acting through its special combination of plant growth enhancers and activators, RizoSphere is a ready to use seed dressing that aids in enhancing germination and early season root and top growth. RizoSphere can be used at the rate of 4 to 8 fluid ounces per 100 lbs. of seed. Sufficient amounts of water should be added to insure proper coverage. Improper coverage will minimize product performance.

#### **NON-AGRICULTURAL USE REQUIREMENTS**

The requirements in this container apply to uses of this product that are NOT within the scope of the Worker Protection Standard for agricultural fertilizer. The WSP applies when this product is used to produce agricultural plants on farms, forest nurseries, or in greenhouses.

#### **STORAGE AND DISPOSAL**

Do not contaminate water, food, or feed by storage or disposal.

FERTILIZER STORAGE: Protect from freezing and store out of direct sunlight.

FERTILIZER DISPOSAL: Wastes resulting from the use of this product may be disposed on site or at an approved waste disposal facility.

CONTAINER DISPOSAL: Offer for recycling or reconditioning or puncture and dispose of in a sanitary landfill.

**IMPORTANT:** *Read the entire Directions for Use and Condition of Sale and Warranty before using this product.*

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