



## APPLICATION GUIDELINES

The following guidelines are offered as a tool for anyone making application recommendations. Many factors are considered when making application recommendations including:

- Soil nutrient levels
- Soil type
- Percentage of organic matter
- Crop to be grown
- Stage of plant development
- Cropping history
- Environmental conditions

The application timing and rates may be changed to fit a particular situation that is impacted by one or more of the above-mentioned factors.

In organic operations, it is recommended that all application rates be increased 100 percent of traditional applications for conventionally grown crops (conventional rate of 1 gal/acre will increase to 2 gal/acre). This increase is recommended because the build-up of residual soil nutrients in organic fields is typically less than that found in conventionally fertilized fields. Additionally, organic fertilizer products tend to have a slower release of nutrients compared to that of chemical fertilizers. Number and frequency of applications may also have to be increased for the same reasons.

We do recommend consulting a current soil report when making application decisions. Additionally, as a general rule, we recommend a 25% -30% reduction of the standard N-P-K rate when using in conjunction with SumaGrow products.

## NOTICE - FOR OPTIMAL RESULTS

Avoid extreme temperatures. Store at 40°F – 80°F. The standard application rate is 1 gal/acre diluted at a ratio of 1:32 to 1:20 (4-6 oz. /gal)

If foliar application of SumaGrow<sup>®</sup> is recommended, we recommend diluting at a ratio of 1:64, 1:32, 1:20 or 2 to 4 oz. per gallon of water depending on application frequency, crop and growing conditions.

If already using N-P-K products: It is recommended that N-P-K application rates be reduced 25%-30% when using SumaGrow<sup>®</sup> products. This reduction of N-P-K should be based on soil fertility and crop nutrient

requirements. A reduction in plant nutrients by 50% is at grower's risk.

If Soil Organic Matter (OM) is low (i.e. <1.5 or heavy sand), then increase the initial application rate by 0.5 gallon for all applications.

The spray tank and system should be rinsed and flushed thoroughly before and after each application of SumaGrow<sup>®</sup>.

## AGITATION

The product should be gently agitated prior to application. In smaller containers, simply shake the container prior to loading into sprayer.

For bulk barrels and totes, agitate prior to transferring to sprayer. An air wand or paddle agitator may be used for mixing.

## CO-APPLICATION

SumaGrow<sup>®</sup> can be co-applied with your irrigation water through a metered irrigation system.

Product may also be co-applied with some liquid fertilizers and herbicides. A jar compatibility test is always recommended before co-applied.

DO NOT CO-APPLY SumaGrow<sup>®</sup> with fungicides or fumigants.

## CEREALS AND GRASSES

### CEREALS (Wheat, Barley, Oats)

Apply 0.5 gal/acre at 2-3 leaf stage.

Apply 0.5 gal/acre 3–4 weeks after initial application.

-or-

Apply 1 gal/acre at vegetative growth stage 3 (V3).

### RICE

- Sprouted seeds
  - Apply 1 gal/acre at 2-3 leaf stage.
  - Apply 0.5 gal/acre at flag leaf/boot leaf/pre-flowering stage for optimal performance or for organic cultivation.
- Transplants
  - Apply 1 gal/acre after transplant.
  - Apply 0.5 gal/acre at flag leaf/boot leaf/pre-flowering stage for optimal performance or organic production.

### SUGARCANE:

- New Sets:
  - Apply 1 gal/ acre on sets at planting.
  - Apply 0.5 gal/ acre 3-4 weeks after initial application.
- Ratoon:
  - Apply 1 gal/ acre at emergence.
  - Apply 0.5 gal/ acre 3-4 weeks after initial application.

### COTTON:

- Apply 1 gal/acre at node 3 -OR-
- Apply 0.5 gal/acre at node 3 followed by 0.5 gal/acre 3 weeks later

## FRUIT AND NUTS

### BANANA:

- Apply 0.5 gal/acre at the beginning of the growing season.
- Apply 0.5 gal/acre 3-4 weeks after the initial application with an optimal 3<sup>rd</sup> application mid-growing season.

### BERRIES:

- Apply 0.5 gal/acre at early bud break.
- Apply 0.5 gal/acre at 3–4 weeks after 1st application.

### GRAPES:

- Apply 1.5 gal/acre each year in 3 split applications (early growth, pre-flowering, post- fruit set).

### PINEAPPLE:

- New Crop
  - Apply 1/2 gal/acre at planting.
  - Apply 1/2 gal/acre 4 months after planting and again 4 months after second application.
- Ratoon Crop
  - Apply 1 gallon per acre after harvest when new growth has emerged.
  - Apply ½ gallon per acre 2 to 3 months after first application.

### POME FRUITS AND STONE FRUITS:

- Apply 1 gal/acre at planting.
- After establishment: Apply 1.5 gal/acre each year in 3 split applications (0.5 gal/acre at bud break, 0.5 gal/acre before bloom set, 0.5 gal/acre after fruit set)

### STRAWBERRIES:

- Apply 0.5 gal/acre at planting.
- Apply 0.5 gal/acre at 3–4 weeks after 1st application.

## TROPICAL, SUBTROPICAL AND CITRUS FRUITS:

- Young Plants  
At planting, dip roots in a solution of 16 oz. of SumaGrow with water to make one gallon of dip solution.
  - During the first two years, apply 1/2 gal/acre of SumaGrow<sup>®</sup> at planting and two more applications at 1/2 gallon per acre at 4 month intervals.
- Mature Plants
  - First application 1.0 gal/acre immediately after harvest in tropical locations, or at spring green-up in temperal locations.
  - Apply 0.5 gal/acre twice during growing season as follows:

Following initial application, a second application should be made 1-2 weeks before blooming, while the final application should be made 1-2 weeks after the fruit has set.

## HYDROPONICS:

### HYDROPONICS:

- Initial Application:
  - Apply 1-2 gal/acre (3-6 oz. per 1,000 sq. ft.)
- Rate per plant:
  - Divide the number of plants stocked per 1,000 sq. ft. into rate per 1,000 sq. ft.  
200 plants per 1,000 sq. ft.  
  
3 oz. per 1,000 sq. ft.  
  
 $3/200 = 0.015$  oz. or 1/2 ml per plant
- Subsequent Applications:
  - Apply 10 oz. per acre or 1/4 oz. per 1,000 sq. ft. once a week during growing season.

## LAWN AND TURF

### ATHLETIC FIELDS:

- Apply 6 oz. per 1,000 sq. /ft. at spring green-up.
- Apply 4 oz. per 1,000 sq. /ft. two more times during the growing season.

## GOLF COURSES:

Apply 2 gal/acre (or 6 oz. per 1,000 sq./ft.) for first application. This application should be as close to spring green-up as possible for greens and fairways.

- Fairways: Apply 4 oz. per 1,000 sq./ft. every other month on fairways during the growing season as needed.
- Greens: Apply 4 oz. per 1,000 sq./ft. monthly during the growing season as needed.

## HOME LAWN:

- Apply 4 oz. per 1,000 sq./ft. at spring green-up or first treatment.
- Apply 4 oz. per 1,000 sq./ft. every 4–6 weeks during growing season as needed.

## TURF FARMS:

- Apply 0.5 gal/acre at spring green-up.
- Apply 0.5 gal/acre up to two more times during the growing season or as needed.

Dilution rates are generally recommended at 1:20 or 1:32 (4-6 oz./gallon). SumaGrow® products can be diluted further with more frequent applications such as bi-monthly or weekly.

# LEGUMINOUS CROPS

## LEGUMINOUS CROPS:

- Apply 0.5 gal/acre at emergence.
- Apply 0.5 gal/acre 3-4 weeks after emergence.

# OILSEED CROPS

## OIL PALM, COCONUTS OTHER OLEAGINOUS FRUITS:

- Nursery Stage:
  - Mix 14 oz. of SumaGrow<sup>®</sup> in 1 gallon of water and apply in a dip solution to transplants.
- 1-3 Years of Growth:
  - Apply 1.5 gal/acre in split applications of 0.5 gallon at 4 month intervals every year.
- Mature Plants (3+):
  - Apply 1 gal/acre during vegetative growth phase.
  - Time applications with onset of foliage and bud formation.

## PEANUTS:

- Apply 1 gal/acre at emergence.
- Apply 0.5 gal/acre at “pegging.”

## SOYBEANS:

- Apply 0.5 gal/acre at emergence.
- An additional application of 0.5 gal/acre 3-4 weeks after initial application is optimal.

## OTHER TEMPORARY OILSEED CROPS:

- Apply 0.5 gal/acre at emergence.
- Apply 0.5 gal/acre 3-4 weeks after initial application.

## DILUTION FOR TREE ROOT DIP AND PLANTING:

Remove the tree from its container. A root dip in SumaGrow<sup>®</sup> before planting using a mixture of 14 oz. SumaGrow<sup>®</sup> per gallon of water is recommended.

Apply 1 gal/acre at 15 days after planting followed an optimal 2nd application mid-growing season.

## ROOT/TUBER CROPS

### ROOT/TUBER CROPS:

- Apply 0.5 gal/acre at emergence.
- Apply 0.5 gal/acre 3-4 weeks after initial application.

## SPICE CROPS

### BLACK PEPPER:

- Apply 0.5 gal/ acre at emergence.
- Apply 0.5 gal/acre prior to flowering.

### COFFEE:

- Apply 1.5 gal/acre per year across the growing season.
- Apply 0.5 gal/acre before blooming (1-2 weeks), 0.5 gal/acre at berry set plus 0.5 gallon/acre mid-growing season.

### TEA:

Apply 1.5 gal/acre per year split across the growing season

## VEGETABLES AND MELONS

### BASIL:

- Apply 0.5 gal/acre at emergence.
- Apply 0.5 gal/acre 3–4 weeks later as needed.

### FRUIT-BEARING VEGETABLES:

- Transplants – Dip roots using 6 oz. SumaGrow<sup>®</sup> per gallon of water. Use remaining product on transplants.
- Apply 0.5 gal/acre after planting/sowing.



- Apply 0.5 gal/acre 3–4 weeks later.

### HOME VEGETABLE GARDEN:

- To transplant: Dip roots in 6 oz. SumaGrow<sup>®</sup> per gallon of water. Apply every 2-3 weeks to soil around plants using 3 oz. per gallon of water.
- Seeded crops: Apply at emergence using 6 oz. SumaGrow<sup>®</sup> per gallon of water per 1,000 sq. ft. Apply every 2-3 weeks as needed using 3 oz./gallon of water.

### LEAFY OR STEM VEGETABLES:

- Transplants – Dip roots using 6 oz. SumaGrow<sup>®</sup> per gallon of water. Use remaining product to water the transplants.
- Apply 0.5 gal/acre after planting/sowing.
- Apply 0.5 gal/acre 3–4 weeks later.

### ONIONS:

- Apply 0.5 gal/acre directly over the row at emergence.
- Apply 0.5 gal/acre 3–4 weeks later.

### ROOT, BULB OR TUBEROUS VEGETABLES:

- Apply 0.5 gal/acre at emergence.
- Apply 0.5 gal/acre 3–4 weeks later.

## OTHER CROPS

### NURSERY CROPS:

If injection is possible, apply 32 oz./ acre or 3/4 oz. per 1,000 sq. ft. every 3 weeks.

Or apply as a “Sprench,” a heavy spray to ground surface and foliage at approximately 32 oz./ acre or 3/4 oz. per 1,000 sq. ft.

If plants have reached optimum size in the pots and are showing moisture stress (wilting, drooping, leaf graying, yellowing, & abscission of lower foliage), the appropriate formulation can be reapplied at the initial rate to help reduce moisture stress.

### PERMANENT FLOWER CROPS:

- Dilution for root dip and planting:
  - Add 6oz per 1 gallon of water to dip roots before planting/transplanting.
  - Add any remaining solution around plants.
- For Established Plants:
  - Mix 8 oz. in 2 gallons of water and apply to 1,000 sq./ft. First applications should be made at the beginning of the growing season.
  - Apply a 2nd application before flowering using the same application procedure as the 1st.

### OTHER PERMANENT CROPS (PINE/CHRISTMAS TREES):

- Mix 14 oz. of SumaGrow<sup>®</sup> per gallon of water – the diluted solution can then be used for seedling root dips.
- The remaining solution can be added at the time of planting.
- Mix 6 oz. of SumaGrow<sup>®</sup> per gallon of water and apply per 1,000 square feet.

### TEMPORARY/PERMANENT GRASS CROPS (PASTURE & HAY):

- Establishment:
  - Apply 0.5 gal/acre at seeding/sprigging.
  - Apply 0.5 gal/acre 4 weeks after initial application.
- Maintenance (Pastures):
  - Apply 0.5 gal/acre at green-up.
  - Apply 0.5 gal/acre mid-growing season as needed.
- Hay Fields:
  - Apply 0.5 gal/acre at green-up.
  - Apply 0.5 gal/acre after every second cutting of hay as needed.

### TEMPORARY FIBER CROPS:

- Apply 0.5 gal/acre at emergence.
- Apply 0.5 gal/acre 3-4 weeks after initial application.

### TEMPORARY FLOWER CROPS (INDOOR/OUTDOOR POTTED PLANTS):

Apply 1 cup of SumaGrow<sup>®</sup> mixture (6 oz./ per gallon of water) once per month.

### TOBACCO:

- Apply 1 gal/acre after transplanting.
- Apply 0.5 gal/acre 3-4 weeks after transplanting.