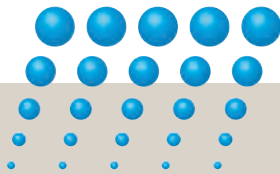


always thinking ahead.



Sprint® 330

Sprint® 138

High Performance Iron Chelates for Foliar and Soil Application

Product Information

Iron is essential for the formation of chlorophyll, a vital component to ensure plant health. Since iron has low plant mobility, new growth in iron deficient plants often shows iron deficiency. In early stages, leaves have interveinal chlorosis where plant leaves are light green to yellow but the leaf veins remain green. In severe cases, leaves turn white and plants may die.

Iron deficiencies commonly occur in:

- Soils which are high in pH, calcareous, or have heavy clay which tie up iron.
- Plants which have a limited root system due to environmental, pest, or disease stress.
- Soils high in sand content due to poor nutrient-holding capacity.

Becker Underwood's Sprint® chelated micronutrient formulations are important to plant health. Unlike non-chelated or weakly chelated irons, Sprint 330 and Sprint 138 are strong chelates that maintain and protect iron availability in a wide variety of problem soils. Plus, Sprint has the added flexibility for use in either foliar or soil applications.

Sprint 330, a 10 percent fully chelated DTPA iron, performs best in slightly acid to slightly alkaline soils with a pH of up to 7.5.

Sprint 138, a 6 percent fully chelated EDDHA iron, is preferred in the most challenging soils that are alkaline and calcareous, including soils with a pH greater than 7.0. Sprint 138 contains the highest *ortho-ortho* (5.2%) content available in the industry, providing a highly efficient chelate that will keep working to "shuttle iron" from the soil to the plant for an extended period of time.

Soil Applications

Sprint must reach the root zone to be effective. Sprint may be incorporated mechanically, or by rainfall, irrigation, soil drench or deep root feeding.

Foliar Applications

A thorough cover spray generally provides best results due to limited iron mobility. In most situations a surfactant may be added up to 0.5 percent by volume to ensure uniform coverage. As a general rule, Sprint should not be mixed with crop oil concentrates. For turf, Sprint 330 can be tank mixed with plant growth regulators such as Primo®. Refer to Primo® or other plant growth regulator labels for specific use directions.

Tank Mixes with Fertilizers and Pesticides

The outstanding chelating ability of Sprint allows excellent tank mixing flexibility, including mixing with fertilizers which contain phosphorus or slow release nitrogen, and plant growth regulators. Sprint is formulated as a wettable powder. If spray tank agitation is limited, Sprint may be pre-mixed in a pail until dissolved, then added to the spray tank. Do not pre-mix Sprint with pesticide or fertilizer concentrates.

Greenhouse

Sprint can be used in a greenhouse irrigation system. To achieve a 4 oz. Sprint/100 gallon water rate, mix a concentrate solution consisting of 4 oz. Sprint per gallon of water. Set pump calibration at 1:100 and pump from the concentrate solution.

This bulletin is intended as a general guide only. Before using Sprint, the product label should be consulted for specific application directions.



Plant

Sprint 138 Rate

Sprint 330 Rate

Turf

Bluegrass, St. Augustine, Bermudagrass, Bentgrass, Fescues, Ryegrass, Zoysiagrass, Centipede

Foliar: 2 oz. per 1000 sq. ft.

Foliar: To general turf, apply 2-4 oz. per 1000 sq.ft. in sufficient carrier to get uniform coverage. On golf greens, apply 1-4 oz. per 1000 sq.ft. in sufficient carrier to get uniform coverage. Allow at least 30 days between applications if higher rates are used. With growth regulators, apply 1-3 oz. per 1000 sq.ft. in sufficient carrier to get uniform coverage.

NOTE: The addition of 0.1 lb. of ammoniacal N per 1000 sq.ft. may enhance iron uptake in **Foliar** applications

Soil: 1 lb. per 1000 sq.ft. alone or in combination with fertilizer in sufficient carrier to get uniform coverage.

Ground Cover

Dichondra, Ivy, Pachysandra, etc.

Sprint 330 recommended.

1 lb. per 1000 sq.ft. Apply uniformly and water in well.

Roses and Flowering Shrubs

Azalea, Honeysuckle, Crepe Myrtle, Spirea, Forsythia, Gardenia, and similar plants

Soil: 2 oz. for small shrubs and 4 oz. for large shrubs. Apply directly beneath or around shrubs. Water in well.

Containers: 1/4 tsp. per 8-inch pot; 1/2 tsp. per 12-inch pot.

Foliar: 1 lb. per 100 gallons of water (1 1/2 tsp./gal.) as thorough spray.

Soil: 2-4 oz. (6-12 Tbs.) per 100 sq.ft. as a broadcast application; for individual plants, 1 tsp. for plants to 2 ft. high, 2 tsp. for plants 2-3 ft. high, 3 tsp. for plants 4-8 ft. high. Treat under canopy.

Containers: 1/4 tsp. per 8-inch pot; 1/2 tsp. per 12-inch pot.

Greenhouse: Inject through fertilizer system at 1:100 pump setting; slurry Sprint 330 concentrate at 1 lb. per gal.

Ornamentals

Aster, Canna, Geranium, Chrysanthemum, Daylily, Iris, Nasturtium, Petunias, Verbena and other similar annuals and perennials

Soil: 20 oz. per 1000 sq.ft. and water in well.

Containers: 1/4 tsp. per 8-inch pot; 1/2 tsp. per 12-inch pot.

See "Flowers" for specific plant rates.

Flowers

Carnations, Gladiolus, Chrysanthemum, Peonies, Petunias, Snapdragons, Zinnias and other herbaceous plants

Soil: (Gladiolus only) 80 oz. per 1000 sq.ft. of row.

Containers: (Gladiolus only) 1/4 tsp. per 8-inch pot; 1/2 tsp. per 12-inch pot.

Foliar: 1/2 lb. per 100 gal. of water (3/4 tsp./gal.); apply to runoff.

Soil: 1-2 oz. (3-6 Tbs.) per 100 sq.ft. as a broadcast application; for individual plants, 1/2 tsp. per plant.

Containers: 1/8 tsp. per 8-inch pot; 1/4 tsp. per 12-inch pot.

Greenhouse: Inject through fertilizer system at 1:100 pump setting; slurry Sprint 330 concentrate at 4-8 oz. per gal.**

****At higher rates wash off excess Sprint from leaf surface on sensitive plants to avoid brown or black spots from forming.**

Evergreens and Leafy Shrubs

Arborvitae, Boxwood, Holly, Euonymous, Juniper, Yew, Laurel, Privet, Spruce, Taxus, etc.

Sprint 330 recommended.

Foliar: Same as "Roses and Flowering Shrubs."

Soil: Same as "Roses and Flowering Shrubs."

Containers: Same as "Roses and Flowering Shrubs."

Greenhouse: Inject through fertilizer system at 1:100 pump setting; slurry Sprint 330 concentrate at 1 lb. per gal.

Small Fruits

Blackberries, Strawberries, Grapes, Boysenberries, Dewberries, Loganberries, Raspberries and Blueberries

Foliar: (Grapes only) 1 1/2 lbs. per 100 gal. water; apply as thorough cover spray.

Soil: 1/2-1 lb. per 100 ft. of row as a band or sidedress application.

Soil: 1/2 to 1 lb. per 100 ft. of row as a band or sidedress application. Apply early in spring when deficiencies occur.

Containers: 1/4 tsp. per 8-inch pot or 1/2 tsp. per 12-inch pot.

Greenhouse: Inject through fertilizer system at 1:100 pump setting; slurry Sprint 330 concentrate at 1 lb. per gal.

Shade Trees, Fruit Trees and Nuts

Apple, Apricot, Maple, Ash, Plum, Elm, Camphor, Pear, Dogwood, Avocado, Prune, Russian Olive, Mimosa, Pin Oak, Peach, Pecan, Cherry, Sycamore, Magnolia, Walnut, Sandcherry, and other shade trees, fruit trees and nuts

See rates for specific plants as listed below.

Foliar: 1 lb. per 100 gal. water (1 1/2 tsp./gal.); apply to runoff. On bearing trees, apply prior to bloom or after harvest. Do not apply with crop oils.

Soil: 3-6 Tbs. per inch of trunk diameter at chest height. Apply uniformly under canopy.

Containers: 1/4 tsp. per 8-inch pot; 1/2 tsp. per 12-inch pot.

Sycamore, Chinese and American Elm, Shortleaf Pine, Arborvitae, Juniper, Ponderosa Pine, Dwarf Apple, Chinese Mimosa, Pin Oak, and similar trees

Soil: Up to 2 oz. per tree for each inch of tree diameter at chest height. Apply in spring and water in well.

Containers: 1/4 tsp. per 8-inch pot or 1/2 tsp. per 12-inch pot.

For specific plant rates, see "**Shade Trees, Fruit Trees and Nuts**" above.

Plant

Sprint 138 Rate

Sprint 330 Rate

Citrus

Foliar: 1 lb. per 100 gal. water applied as thorough cover spray; apply any time after harvest of main crop; do not apply while main crop is on tree. Do not use with oils or miticides.

Soil: 1/3-1/2 lb. per tree in light soils or 1/2-1 lb. per tree in heavy soils. Broadcast evenly with the drip line prior to winter flush of growth. For trees on annual maintenance program, 1/4-1/3 lb. per tree.

Foliar: 1 lb. per 100 gal. water applied as thorough cover spray. Apply any time after harvest of main crop and until bloom of succeeding crop. Do not apply while main crop is on tree. Do not use with oils or miticides.

Soil: 1-2 lbs. per tree alone or with fertilizer. For trees on annual preventative program, apply 1/4 lb. per tree. May be applied in irrigation water.

Almonds, Apples, Apricots, Cherries, Nectarines, Pecans, Plums, Prunes, Walnuts

Foliar: 1-1 1/2 lbs. per 100 gal. water applied as thorough cover spray prior to bloom or after harvest. Do not use with oils.

For specific plant rates, see "Shade Trees, Fruit Trees and Nuts" above.

Apples, Apricots, Avocados, Cherries, Macadamia, Nectarines, Peaches, Pears, Plums, Prunes, Walnuts

Foliar: (Peaches and Pears only) 1-3 lbs. per 100 gal. water applied as thorough cover spray 4-6 weeks after full bloom. If deficiency is severe, apply 1-2 additional sprays at 2-3 week intervals. Do not use with oils.

For specific plant rates, see "Shade Trees, Fruit Trees and Nuts" above.

Soil: 1/2-2 oz. per tree per inch of trunk diameter measured at chest height; do not apply more than 1 lb. per tree. Apply in spring.

Peanuts, Beans, Corn, Mustard, Spinach

Soil: Up to 2 oz. per 1000 sq. ft. (5 lbs./acre) as a band or sidedress.

Soil: (Corn, Mustard, and Spinach only) Up to 3 2/3 oz. per 1000 sq. ft. (10 lbs./acre) as a band or sidedress.

Cabbage, Cauliflower, Celery, Lettuce

Soil: Up to 2 oz. per 1000 sq. ft. (5 lbs./acre) as a band or sidedress.

Soil: 3 2/3 oz. per 1000 sq. ft. (10-20 lbs./acre) as a band or sidedress.

Beans and Black-eyed Peas

Black-eyed Peas same as "Carrots"

Soil: 3 2/3 to 7 1/3 oz. per 1000 sq. ft. (10-20 lbs./acre) as a band or sidedress.

Carrots, Cucumbers, Eggplants, Melons, Onions, Parsnips, Peas, Peppers, Potatoes, Radishes, Squash, Tomatoes and Turnips

Foliar: 1/2 oz. per 1000 sq. ft. (1 1/2 lbs./acre) in sufficient water for thorough coverage; repeat in 2-3 weeks if necessary.

Foliar: 1/3 oz. per 1000 sq. ft. (1 lb./acre) in sufficient water for thorough coverage; repeat in 2-3 weeks if necessary.

Soil: Up to 2 oz. per 1000 sq. ft. (5 lbs./acre) as a band or sidedress

Soil: Same as "Cabbage, Cauliflower, Celery, and Lettuce."

Greenhouse and Nursery Specialized Applications

Parts per million (ppm) actual Fe	Drench Rate Guidelines For drenches, mix Rate amount in 100 gals. (375 L) of water volume				Irrigation Injection Rate Guidelines	
	Sprint 330 10% DTPA Chelated Iron		Sprint 138 6% EDDHA Chelated Iron (5.2% <i>ortho-ortho</i>)		Concentrate Stock Solution (gal.)	Injector Pump Setting
	Rate (oz.)	Rate (grams)	Rate (oz.)	Rate (grams)		
15	2.0	56.70	3.3	93.56	1	1:100
20	2.7	76.55	4.5	127.58	1	1:100
30	4.0	113.40	6.7	189.95	1	1:100
40	5.4	153.09	9.0	255.15	1	1:100
60	8.0	226.80	13.4	379.89	1	1:100
80	10.8	306.18	18.0	510.30	1	1:100
100	13.5	382.73	22.5	637.88	1	1:100

For mild chlorosis- Drench plants with Sprint 330 or Sprint 138 beginning at 5 oz./100 gals. (141.75 gr / 375 L).

For severe chlorosis - Drench plants with Sprint 330 or Sprint 138 at 5-8 oz. / 100 gals. (141.75 - 226.80 gr. / 375 L), and repeat 14 days later, 5-8 oz. / 100 gals. (141.75 - 226.80 gr. / 375 L).

Conversion: 3 tsp.=1 Tbs., 1 oz. = 3 Tbs.