Sprint® 330+Mn

High Performance Iron Chelate and Manganese Micronutrient Blend for Professionally Managed Turfgrass

Iron (Fe) derived from DTPA chelated iron: 5.4%

Manganese (Mn) derived from water soluble manganese: 12.8%

Product Information

Sprint® 330+Mn high performance iron chelate and water-soluble manganese micronutrient blend helps correct specific mineral deficiencies in slightly acid to slightly alkaline soil.

The unique combination of Sprint 330+Mn micronutrient blend delivers an agronomically favored 1:2 ratio of plant available iron and manganese micronutrients.

Field research trials have shown that supplemental additions of chelated iron in combination with manganese improve overall turf quality and performance under demanding growing conditions. Benefits include healthier turf growth, as well as better resistance to and recovery from disease and insect damage. The result is superior performing turf.

Sprint 330+Mn micronutrient blend provides up to 30 days of supplemental micronutrient feeding to the plants.

Applications

Foliar applications should be made as thorough cover sprays to turfgrass foliage. The addition of up to 0.5% spray adjuvant (1 pint per 25 gallons spray volume) to the solution may help insure uniform distribution.

Using Becker Underwood's Turf Mark® spray pattern indicators may help avoid skips and overlaps during the application process.

To facilitate mixing, slowly introduce Sprint 330+Mn into at least half the required spray volume while agitating.

For general turf, apply Sprint 330+Mn at the rate of 6-12 ounces per 1,000 square feet in sufficient carrier volume to get uniform coverage. Allow at least 30 days between applications.

The addition of 0.1 pound ammoniacal Nitrogen per 1,000 square feet can enhance iron uptake.

Packaging

- Sprint 330 + Mn is available in 50 pound boxes.

Ask your local supplier or Becker Underwood representative for more information!

BECKER UNDERWOOD
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BECKER UNDERWOOD
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Sprint® 330 & Sprint® 138

High Performance Iron Chelate for Foliar and Soil Applications

Product Information

Iron is a key component of many critical enzymes in plants. It is one of the essential elements required for biological nitrogen fixation, sulfur metabolism and photosynthesis. It is also a critical element for oxygen transport in chlorophyll production.

Iron chlorosis occurs when plants are unable to extract sufficient iron from the soil. This condition commonly occurs in:

- Soils that are high in pH, calcareous or have heavy clay that ties up iron.
- Plants that have a limited root system due to disease, pest or environmental stresses.
- Soils with high sand content and poor nutrient-holding capacity.

In the early stages of iron deficiency, new growth foliage exhibits interveinal chlorosis, in which leaf veins remain green but plant leaves are light green to yellow. In severe cases, leaves turn white and plants may die.

How can iron deficiency be prevented? Including Becker Underwood's Sprint® iron chelate products in your plant management program helps maintain and protect iron availability in a wide variety of problem soils.

Sprint iron chelate products protect iron by preventing it from binding with other compounds in the soil, allowing it to stay in a form readily available for plant use.

Sprint 330 10% fully chelated DTPA iron performs best in slightly acidic to slightly alkaline soils with a pH of up to 7.5. Sprint 138 6% fully chelated EDDHA iron is preferred in the most challenging soils that are alkaline or calcareous.

With the highest *ortho-ortho* (5.2%) content available in the industry, Sprint 138 iron chelate provides plant available forms of iron for an extended period of time. Numerous studies have shown the EDDHA *ortho-ortho* isomer is superior in performance, especially in alkaline and calcareous soils.

Applications

Sprint iron chelate products are effective when directed to the root zone in soil applications, and may be incorporated mechanically or through rainfall, irrigation, soil drench or deep root feeding.

With foliar applications, a thorough cover spray to plant foliage generally provides best results. In most situations, a spray adjuvant may be added up to 0.5% by volume to ensure uniform coverage. As a general rule, Sprint iron chelate products should not be mixed with crop oil concentrates.

Sprint iron chelate products offer flexibility when tank-mixing with plant growth regulators (PGRs), as well as fertilizers that contain phosphorus or slow release nitrogen. For turf, Sprint 330 iron chelate can be tank-mixed with PGRs such as Primo Maxx®. (Refer to Primo Maxx or other PGR labels for specific use directions.)

Formulated as wettable powders, Sprint iron chelate products should be thoroughly mixed. If spray tank agitation is limited, pre-mix Sprint iron chelate products in a pail until dissolved and add to the spray tank solution. Do not pre-mix Sprint iron chelate products with pesticide or fertilizer concentrates.

For use in a greenhouse irrigation system, to achieve a rate of 4 ounces Sprint per 100 gallons water, mix a concentrate stock solution consisting of 4 ounces Sprint per gallon of water. Set injector ratio to 1:100 and pump from the concentrate stock solution.

This bulletin is intended as a general guide only. Before using Sprint iron chelate products, consult the product label for specific application directions.

Packaging

- Sprint 138 is available in 6 x 5 pounds.
- Sprint 330 is available in 6 x 5 pounds and 50 pound boxes.

SPRINT® 138 AND SPRINT 330 APPLICATION RATES

PLANT	SPRINT® 138 RATE	SPRINT 330 RATE
Turf Bluegrass, St. Augustine, Bermudagrass, Bentgrass, Fescues, Ryegrass, Zoysiagrass, Centipede Grass *NOTE: Addition of 0.1 lb. of ammoniacal N / 1,000 ft² may enhance iron uptake in foliar applications.*	**Foliar** 2 oz. / 1,000 ft²	**Foliar** General turf: 2-4 oz. / 1,000 ft² in sufficient carrier to get uniform coverage. Golf greens: 1-4 oz. / 1,000 ft² in sufficient carrier to get uniform coverage. Allow at least 30 days between applications if higher rates are used. With growth regulators: 1-3 oz. / 1,000 ft² in sufficient carrier to get uniform coverage. **Soil**[1] 1 lb. / 1,000 ft² alone or in combination with fertilizer in sufficient carrier to get uniform coverage.
Ground Cover Dichondra, Ivy, Pachysandra, etc.	*Sprint 330 recommended.*	**Soil**[1] 1 lb. / 1,000 ft². Apply uniformly.
Roses, Flowering Shrubs Azalea, Honeysuckle, Crepe Myrtle, Spirea, Forsythia, Gardenia, and similar plants	**Soil**[1] 2 oz. for small shrubs and 4 oz. for large shrubs. Apply directly beneath or around shrubs. **Containers**[1] For containers, ¼ tsp. / 8-inch pot; ½ tsp. / 12-inch pot.	**Foliar** 1 lb. / 100 gal. of water (1 ½ tsp. / gal.) as thorough spray. **Soil**[1] 2-4 oz. (6-12 Tbs.) / 100 ft² 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] ¼ tsp. / 8-inch pot; ½ tsp. / 12-inch pot. **Greenhouse** Inject through fertilizer system at 1:100 pump setting. Slurry Sprint 330 concentrate at 1 lb. / gal.
Ornamentals Aster, Canna, Geranium, Chrysanthemum, Daylily, Iris, Nasturtium, Petunias, Verbena and other similar annuals and perennials	**Soil**[1] 20 oz. / 1,000 ft². **Containers**[1] ¼ tsp. / 8-inch pot; ½ tsp. / 12-inch pot.	*See "Flowers" for specific plant rates.*
Flowers Carnations, Gladiolus, Chrysanthemum, Peonies, Petunias, Snapdragons, Zinnias and other herbaceous plants	**Soil**[1] Gladiolus only: 80 oz. / 1,000 ft² row. **Containers**[1] Gladiolus only: ¼ tsp. / 8-inch pot; ½ tsp. / 12-inch pot.	**Foliar** ½ lb. / 100 gal. water (¾ tsp. / gal.). Apply to runoff. **Soil**[1] 1-2 oz. (3-6 Tbs.) / 100 ft² as a broadcast application. For individual plants: ½ tsp. / plant. **Containers**[1] 1/8 tsp. / 8-inch pot; ¼ tsp. / 12-inch pot. **Greenhouse** Inject through fertilizer system at 1:100 pump setting. Slurry Sprint 330 concentrate at 4-8 oz. /gal. *At higher rates wash off excess Sprint from leaf surface on sensitive plants to avoid plant damage.
Evergreens, Leafy Shrubs Arborvitae, Boxwood, Holly, Euonymous, Juniper, Yew, Laurel, Privet, Spruce, Taxus, etc.	*Sprint 330 recommended.*	**Foliar, Soil**[1]**, Containers**[1] *Same as "Roses, Flowering Shrubs."* **Greenhouse** Inject through fertilizer system at 1:100 pump setting. Slurry Sprint 330 concentrate at 1 lb./gal.
Shade Trees, Fruit Trees, 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 listed on the next page.*	**Foliar** 1 lb. / 100 gal. water (1 ½ tsp. / gal.). Apply to runoff. On bearing trees, apply prior to bloom or after harvest. Do not apply with crop oils. **Soil**[1] 3-6 Tbs. / inch of trunk diameter at chest height. Apply uniformly under canopy. **Containers**[1] ¼ tsp. / 8-inch pot; ½ tsp. / 12-inch pot.
Trees Sycamore, Chinese and American Elm, Shortleaf Pine, Arborvitae, Juniper, Ponderosa Pine, Dwarf Apple, Chinese Mimosa, Pin Oak, and similar	**Soil**[1] Up to 2 oz. / tree for each inch of tree diameter at chest height. Apply in spring. **Containers**[1] 1/4 tsp. / 8-inch pot. 1/2 tsp. / 12-inch pot.	*For specific plant rates, see "Shade Trees, Fruit Trees, Nuts."*

[1]For best results, apply as drench. Water in well. Rinse leaf blades.

PLANT	SPRINT 138 RATE	SPRINT 330 RATE
Small Fruits Blackberries, Strawberries, Grapes, Boysenberries, Dewberries, Loganberries, Raspberries and Blueberries	**Foliar**[3] Grapes only: 1 ½ lbs. / 100 gal. water. **Soil**[2] ½-1 lb. / 100 ft. of row.	**Soil**[2] ½ to 1 lb. / 100 ft. of row. Apply early in spring when deficiencies occur. **Containers**[1] ¼ tsp. / 8-inch pot or ½ tsp. / 12-inch pot. **Greenhouse** Inject through fertilizer system at 1:100 pump setting. Slurry Sprint 330 concentrate at 1 lb. / gal.
Citrus	**Foliar**[3] 1 lb. / 100 gal. water. 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** 1/3-½ lb. / tree in light soils. ½-1/per tree in heavy soils. Broadcast evenly with the drip line prior to winter flush of growth. For trees on annual maintenance program, ¼-1/3 lb. / tree.	**Foliar**[3] 1 lb. / 100 gal. water. 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. / tree alone or with fertilizer. For trees on annual preventative program, apply ¼ lb. / tree. May be applied in irrigation water.
Almonds, Apples, Apricots, Cherries, Nectarines, Pecans, Plums, Prunes, Walnuts	**Foliar**[3] 1-1 ½ lbs. / 100 gal. water. Apply prior to bloom or after harvest. Do not use with oils.	*For specific plant rates, see "Shade Trees, Fruit Trees, Nuts."*
Apples, Apricots, Avocados, Cherries, Macadamia, Nectarines, Peaches, Pears, Plums, Prunes, Walnuts	**Foliar**[3] Peaches, pears only: 1-3 lbs. / 100 gal. Apply 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. **Soil** ½-2 oz. / tree for each inch of trunk diameter measured at chest height. Do not apply more than 1 lb. / tree. Apply in spring.	*For specific plant rates, see "Shade Trees, Fruit Trees, Nuts."*
Peanuts, Beans, Corn, Mustard, Spinach	**Soil**[2] Up to 2 oz. / 1,000 ft² (5 lbs. / acre).	**Soil**[2] Corn, mustard, spinach only: Up to 3 ⅔ oz. / 1,000 ft² (10 lbs. / acre).
Cabbage, Cauliflower, Celery, Lettuce	**Soil**[2] Up to 2 oz. / 1,000 ft² (5 lbs. / acre).	**Soil**[2] 3 ⅔ oz. / 1,000 ft² (10-20 lbs. / acre).
Beans, Black-Eyed Peas	*Black-eyed peas same as "Carrots."*	**Soil**[2] 3 ⅔-7 ⅓ oz. / 1,000 ft² (10-20 lbs. / acre).
Carrots, Cucumbers, Eggplants, Melons, Onions, Parsnips, Peas, Peppers, Potatoes, Radishes, Squash, Tomatoes and Turnips	**Foliar**[3] ½ oz. / 1,000 ft² (1 ½ lbs. / acre). Repeat in 2-3 weeks if necessary. **Soil**[2] Up to 2 oz. / 1,000 ft² (5 lbs. / acre).	**Foliar**[3] ⅓ oz. / 1,000 ft² (1 lb. / acre). Repeat in 2-3 weeks if necessary. **Soil** *Same as "Cabbage, Cauliflower, Celery, Lettuce."*

[1] For best results, apply as drench. Water in well. Rinse leaf blades. [2] Apply as a band or sidedress application. [3] Apply as thorough cover spray.

GREENHOUSE AND NURSERY SPECIALIZED APPLICATIONS

Parts per million (ppm) actual Fe	Drench Rate Guidelines For drenches, mix rate amount in 100 gal. (375 L) of water volume				Irrigation Injection Rate Guidelines	
	Sprint 330 10% DTPA Chelated Iron		Sprint 138 6% EDDHA Chelated Iron (5.2% ortho-ortho)		Concentrate Stock Solution (gal.)	Injector Pump Setting
	Rate (oz.)	Rate (g.)	Rate (oz.)	Rate (g.)		
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 gal. (141.75 g/375 L). **For severe chlorosis**: Drench plants with Sprint 330 or Sprint 138 at 5-8 oz./100 gal. (141.75-226.80 g/375 L). Repeat 14 days later, 5-8 oz./100 gal. (141.75-226.80 g/375 L).
Conversion: 3 tsp. = 1 Tbs.; 1 oz. = 3 Tbs.