

## Previously Removed Herbicides Metsulfuron and Chlorsulfuron Return to Turf Market

Fred Yelverton

Remember DMC Weed Control® and TFC Weed Control®? These herbicides were two very popular products that were taken off the market a few years back. As of March, 2000, these products are coming back on the market as Manor 60DF® (metsulfuron—formally known as DMC Weed Control) and Corsair 75DF® (chlorsulfuron—formally known as TFC Weed Control). Both products will be distributed by Riverdale Chemical Company. DMC Weed Control was previously sold by the Scotts Company and TFC Weed Control was previously sold by Lesco. Their return to the market will be a welcomed addition for both cool-season and warm-season turfgrass managers.

Both metsulfuron and chlorsulfuron are manufactured by DuPont and belong to the sulfonylurea herbicide family. This is the same family of herbicides as halosulfuron, which is sold by the Monsanto company by the trade name of Manage®. Because DuPont does not sell products in highly maintained turf, metsulfuron and chlorsulfuron are marketed by other companies. Following several lawsuits involving the fungicide benomyl, sold by the trade name Benlate® in the ornamentals market, DuPont decided to remove all products from the turf and ornamentals market. As a result, they pulled metsulfuron and chlorsulfuron off the market, even though they were marketed by Scotts and Lesco, respectively. Recently, DuPont decided to allow these products to be sold again and Riverdale will market both products.

**Manor 60DF® (metsulfuron).** Although some Manor will be used in cool-season turf, **the largest use of this product will be in warm-season turfgrasses.** Tolerant turf species and Manor rates are:

Turf Species	Manor Rates (oz/ac)
• Bermudagrasses (dactylon and hybrid) <i>Cynodon</i> spp.	0.25 to 1.0
• Zoysiagrasses (Meyer and Emerald) <i>Zoysia</i> spp.	0.25 to 1.0
• St. Augustinegrass <i>Stenotaphrum secundatum</i>	0.25 to 1.0
• Centipedegrass <i>Eremochloa ophiuroides</i>	0.25 to 0.5
• Kentucky bluegrass <i>Poa pratensis</i>	0.25 to 0.5
• Fine-leaf fescues <i>Festuca</i> spp.	0.25 to 0.5

Note that the use rates of Manor are very low (not more than 1 oz/ac). This herbicide (as well as Corsair) is very effective at extremely low use rates. There are 62 weeds listed on the label that are controlled by Manor. More importantly, **there are several weeds controlled by Manor that are not controlled, or are poorly controlled, by currently registered herbicides. For instance, wild garlic (*Allium canadense*) and wild onion (*Allium vineale*) are two perennial weeds that are unsightly in dormant warm-season turf.** Manor applied at 0.33 to 0.5 oz/ac is very effective in controlling these two troublesome perennials. **Manor is the most effective herbicide in selectively removing bahiagrass (*Paspalum notatum*) from bermudagrass, zoysiagrass, and St. Augustinegrass.** Manor applied at 0.75 oz/ac when bahiagrass is actively growing (but before seedhead development) is effective in controlling this troublesome perennial. **Perhaps the most popular use of Manor will be the removal of overseeded perennial ryegrass (*Lolium perenne*) from bermudagrass and zoysiagrass.** Manor applied at 0.25 to 0.5 oz/ac is very effective in removing perennial ryegrass. The transition is more rapid than with pronamide (Kerb®). Manor will kill perennial ryegrass in about 10 to 28 days, depending on weather conditions at application.

Manor can also be used on Kentucky bluegrass and fine-leaf fescues. Rates should not exceed 0.5 oz/ac and applications to these cool-season turfgrass species should not be made when temperatures exceed 85°F (30°C).

As a general rule, Manor applications should include the addition of a nonionic surfactant at a 0.25% volume/volume solution. Manor is moderately mobile in soil. Therefore, this product should not be applied up-slope of any sensitive turf or ornamental species.

**Corsair 75DF® (chlorsulfuron).** Although Corsair is in the same herbicide family as Manor, **the largest use of this product will most likely be in cool-season turf species.** The old formulation (TFC Weed Control) was highly effective in removing tall fescue (*Festuca arundinacea*) from Kentucky bluegrass, fine-leaf fescue, and other tolerant turfgrass species. Corsair can be used on all turfgrass species except tall fescue, American buffalograss (*Buchloe dactyloides*), and ryegrasses. Some discoloration or delayed greenup may occur on St. Augustinegrass, centipedegrass, zoysiagrass, or bahiagrass (*Paspalum notatum*) if applied while the turf is under environmental stress or during spring transition.

Continued on page 7



## Spring Nitrogen Fertilization

The timing and amount of nitrogen fertilization to be applied in the spring can vary greatly depending on the turf condition and on a diversity of environmental and usage considerations. In addition, the approach is different between warm- and cool-season grasses. Thus, this discussion will be separated into these two species groupings.


**Cool-Season Turfgrasses.** Ornamental turfs that are in good condition in terms of shoot density and color usually need minimal early spring nitrogen fertilization. Such turfs may either be fertilized with a very light rate of nitrogen, or in many cases it may be best to delay the spring nitrogen fertilization until after the major flush of shoot growth associated with the optimum spring temperatures. A major nitrogen application during this peak shoot growth period further accentuates growth, thereby resulting in a depletion of carbohydrate reserves and associated root loss just prior to the progressive increase in temperatures leading to heat stress, which further accentuates the negative affects of root loss.

On the other hand, weakened turfs coming out of the winter, such as a result of (a) extensive autumn usage for sports or (b) injury during the winter period, should receive a significant complete analysis (NPK) fertilizer application to enhanced tillering, lateral stem development, and recovery of shoot density. Spring sports that cause significant damage to the turf also should receive a significant complete analysis fertilization. If the opening of the spring sports schedule is quite early, then an early nitrogen application can stimulate earlier shoot greenup in the order of two weeks.

Situations have occurred where the turf manager has made an application of water-soluble, quick-release nitrogen in early spring and gotten no response. Then another application was made in 7 to 10 days, gotten no response, and in some cases even a third application was made. Subsequently, there was a sudden tremendous flush

in shoot growth, which required a very high mowing frequency, exhausted the carbohydrate reserves, and caused root loss. What happened? The problem was that although the air temperatures were relatively warm on certain days, the turf manager failed to take into consideration the actual soil temperature. Somewhat warm air temperatures can cause greening of the turf, but any significant shoot growth can still be delayed if the soil temperatures are not sufficiently high. In other words, one should not expect to see a significant response from a water-soluble nitrogen application until soil temperatures have reached the range of 46 to 54°F (8–12°C), with the specific threshold temperature varying with individual turfgrass species and/or cultivars.

**Warm-Season Turfgrasses.** Spring greenup of winter-dormant warm-season turfgrasses typically occurs when the soil temperature at a 4-in. (100-mm) depth rises to 64°F (18°C). If temperatures rise very rapidly following greenup, the potential for spring root decline (SRD) to occur is high. If SRD is confirmed by root profile examinations, nitrogen fertilization should be delayed for at least 2 to 3 weeks. It also is common in certain regions for a yellowish chlorosis of bermudagrass (*Cynodon* spp.) to occur during the spring, which typically can be corrected with an application of iron. It is especially important that this be done if SRD has occurred in order to facilitate maximum chlorophyll levels for carbohydrate synthesis and supply for root regrowth.

There are situations in which spring greenup of warm-season grasses occurs, but very little shoot growth occurs for 2 to as long as 4 weeks. Consequently, minimal mowing is required. This is caused by a very slow warming trend and resultant persistence in cool soil temperatures, which limit the amount of shoot growth that will occur. Consequently, nitrogen applications during this period will give a minimal shoot growth response in turfs where thinning has occurred during the winter period. 

## ...Metsulfuron and Chlorsulfuron...

Continued from page 2

Use rates of Corsair range from 1.0 to 5.33 oz/ac. One to two ounces/acre will control annual or perennial ryegrass. The highest labeled rate (2.76 to 5.33 oz/ac) will be needed to remove tall fescue. Repeat applications may be necessary for tall fescue control. Like Manor, Corsair will control wild garlic (*Allium canadense*) and wild onion (*Allium vineale*) but the highest labeled rates will need to be used. A total of 48 weeds are listed on the Corsair label. **Several troublesome annual and perennial weeds are controlled. Common and mouseear chickweed, henbit, buttercup, filaree, groundsel, prostrate knot-**

**weed, and white clover,** just to name a few, are species that can be controlled with Corsair.

Corsair application should include a nonionic surfactant at 0.25% volume/volume of spray solution. As with Manor, Corsair is moderately mobile in soils and should not be applied up-slope of sensitive turf or ornamental species.

The return of metsulfuron and chlorsulfuron as Manor and Corsair, respectively, is certainly good news for both cool-season and warm-season turf managers. Their use will provide control of many troublesome weedy pests in highly maintained turf. 