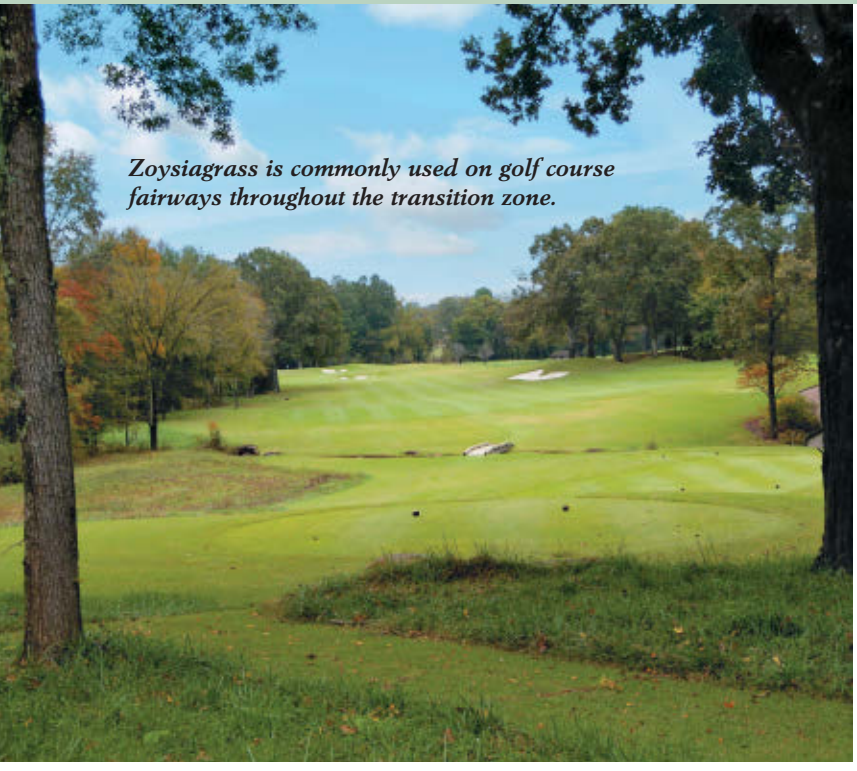

Zoysiagrass is commonly used on golf course fairways throughout the transition zone.

PHOTO COURTESY: JIM BROSNAN

Continued from page 33

effective bermudagrass suppression following treatment with Fusilade II plus Turflon Ester. Application on April 22, 2009 and April 28, 2010 suppressed bermudagrass ≥ 90 percent at 5 weeks after treatment each year (Table 2). Application on October 5, 2009 and September 9, 2010 also provided ≥ 90 percent bermudagrass suppression at 5 weeks after treatment. Comparatively, late spring and mid-summer applications (May 20, June 18 and July 20, 2009 and May 24, June 17 and July 13, 2010) only suppressed bermudagrass 7 to 63 percent in 2009 and 57 to 82 percent in 2010 at five weeks after treatment (Table 2).

Growing conditions at these late spring and mid-summer timings may have allowed bermudagrass to more quickly recover from herbicide injury than following spring and fall applications. Daily high air temperatures following these mid-summer applications were in the range for optimal bermudagrass shoot growth (6).

Increased bermudagrass suppression with spring and fall applications may also be related to herbicide absorption and translocation. As bermudagrass emerges from winter dormancy, young leaves are produced at apical meristems. Fusilade II is more readily absorbed in younger leaves with a thinner cuticle and accumulates primarily in apical meristems (2). This could explain increased efficacy of spring applications. Enhanced efficacy of late-season applications may be due to Fusilade II translocation being concomitant with phloem-translocation of carbohydrates to rhizomes and stolons as bermudagrass transitions into winter dormancy (3). In both years, late-season applications were most successful when average daily air temperatures measured < 72 F on several dates prior to treatment.

Cooler temperatures may be a signal to turf managers that plants are beginning to transition into winter dormancy before visual signs of this transition are apparent and thus plants are more susceptible to herbicide treatment. However, further research is needed to explore this hypothesis in detail.

Significant application date-by-application rate interactions were detected each year (data not shown). However, no statistically significant differences in bermudagrass suppression were detected among the 0.09, 0.18 and 0.28 lb. a.i. per acre rates of Fusilade II applied on April 22, 2009 and April 28, 2010 as well as October 5, 2009 and September 9, 2010, suggesting that bermudagrass susceptibility to Fusilade II plus Turflon Ester may be greatest at these timings. When applied during late spring and mid-summer (May, June, July 2009 and 2010), increasing Fusilade II application rate tended to improve bermudagrass suppression four to six weeks after treatment.

Zoysiagrass injury (< 25 percent) was observed until 5 weeks after treatment each year. Herbicide applications at timings in which increased bermudagrass suppression was observed (April 22 and October 5, 2009 and April 28 and September 9, 2010) also resulted in the highest degree of zoysiagrass injury. However, injury at these timings measured <10 percent by 2 weeks after treatment each year. Except for the May 24, 2010 application, zoysiagrass injury with Fusilade II plus Turflon Ester at labeled rates (0.09 lbs. a.i. per acre and 1.0 lbs. a.e. per acre, respectively) never exceeded 5 percent, which supports the findings of other researchers (5, 7).

Conclusions

■ Bermudagrass susceptibility to applications

Ad Index

Advertiser	Page
The Andersons	5
Arysta	26-27
B A S F Corp	7, 15, 20
Bayer Environmental	3,29,CV4
Greenleaf Technologies	33
John Deere	CV3
Nufarm	22-23, 25, 35
Petro Canada	CV2
Richway Industries	2
Smithco	Insert
Solu-Cal USA	38
Toro	11
Trojan Battery	37
Turfco Mfg	2