

Syngenta/Bayer Fungicide Trial: Reduced Rates of Fungicides to Control Snow Mold on Fairways in Idaho and Washington 2010-2011

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Snow mold control trials were conducted at 2 locations in the Intermountain Region of the PNW, on a fairway at the Whitetail Golf Club in McCall, ID and at the Chewelah Golf and Country Club in Chewelah, WA. The fairway at McCall is a stand of Kentucky bluegrass, perennial ryegrass and annual bluegrass, the fairway at Chewelah is a stand of Kentucky bluegrass, perennial ryegrass, creeping bentgrass, and annual bluegrass. Individual treatment plots were 6' x 7' with three replications in a randomized complete-block design. Treatments were applied 27 Oct 10 and 29 Oct 10 at McCall and Chewelah, respectively. Fungicides were applied at 80 GPA with a bicycle-wheeled CO₂ pressurized (40 psi) sprayer with 11008 flat fan TeeJet nozzles. Continuous snow cover lasted from the end of November 2010 through the end of March 2011 (approx. 125 days) at Chewelah and from the middle of November 2010 to 15 May 2011 at McCall (approx. 175 days). Individual plots were evaluated for pink (*Microdochium nivale*) and/or gray (*Typhula spp.*) snow mold disease severity (% area infected) and turfgrass quality (rated on a scale of 1-9; 9 = excellent and 6 = acceptable) on 30 Mar 11 at Chewelah and 17 May 11 at McCall.

At Chewelah, the check plot had approximately 70% gray snow mold and 30% pink snow mold (Figures 1 and 4). Bayer's Interface at 6 fl oz/M resulted in the least amount of disease and the highest turfgrass quality compared to the other treatments (Table 1). However, there were several Syngenta treatments that resulted in very good disease control with 5% or less of the plot area infected with snow mold when rated on 30 Mar 2011. However, none of these treatments resulted in the high turfgrass quality of Bayer's Interface treatment. The low rate of Instrata at 5 fl oz/M compared to Instrata at 9 fl oz/M resulted in similar disease control and turfgrass quality. Although, Headway G at 4 oz/M and Concert at 5 fl oz/M resulted in a significant disease reduction compared to the check, these treatments were the least effective. Figures 1 through 6 show all treatments in reps 1 and 2. Figure 7 is an overview of reps 1 and 2 of the study area.

At McCall, it appears that only gray snow mold was present (Figures 8 - 14). However, no *Typhula ishikarensis* or *T. incarnata* sclerotia were found to determine whether one or both was present. No fungicide treatment provided adequate snow mold control (Table 2).

Furthermore, no fungicide treatment was significantly different than the check. Perhaps the duration of snow cover, 175 days, was too long for the Bayer or Syngenta fungicides and rates at which they were used to be effective. Figures 8 through 13 show all treatments in reps 1 and 2. Figure 14 is an overview of the complete study.

Overall, disease control was achieved only at the Chewelah site which had 125 days of snow cover. The 175 days of snow cover at McCall may have been too long a period of time for the Bayer or Syngenta fungicides and rates at which they were used to be effective. At Chewelah, Bayer's Interface at 6 fl oz/M resulted in the least amount of disease and the highest turfgrass quality of all the treatments (Table 1). In addition to Interface, there were several Syngenta treatments that resulted in very good disease control with 5% or less of the area infected with disease. There was little advantage to use the high rate of Instrata at 9 fl oz/M compared to the lower rate at 5 fl oz/M.

Table 1. The effect of Bayer's Interface and various Syngenta fungicide combinations to control snow mold and turfgrass quality on a fairway at the Chewelah Golf and Country Club in Chewelah, WA. Rated 30 Mar 2011.

| Treatment | Form- ulation | Rate (oz, fl oz, or lbs/M) | Disease (% area infected) | Turf quality* |
|---|-------------------|----------------------------------|---------------------------------|------------------|
| Interface (Iprodione + Trifloxystrobin) | | 6 fl oz | 0.3 d** | 7.5 a |
| Instrata (Propiconazole + Fludioxonil+ Chlorothalonil) | 3.6 SE | 9 fl oz | 0.8 d | 6.0 b |
| Concert (Propiconazole + Chlorothalonil) + Medallion (Fludioxonil) | 4.3 SE 50 WP | 5 fl oz 0.25 oz | 1.8 d | 5.8 bc |
| Renown (Azoxystrobin + Chlorothalonil) | 5.16 SE | 4.5 fl oz | 2.5 d | 5.6 bc |
| Instrata (Propiconazole + Fludioxonil+ Chlorothalonil) | 3.6 SE | 5 fl oz | 2.8 d | 5.5 bcd |
| Concert (Propiconazole + Chlorothalonil) + Banner MAXX (Propiconazole) | 4.3 SE 1.3 MEC | 5 fl oz 1 fl oz | 3.5 cd | 4.8 cd |
| Concert (Propiconazole + Chlorothalonil) + Banner MAXX (Propiconazole) | 4.3 SE 1.3 MEC | 8.5 fl oz 1 fl oz | 4.3 cd | 4.8 cd |
| Concert (Propiconazole + Chlorothalonil) | 4.3 SE | 8.5 fl oz | 5.3 cd | 4.5 ce |
| Concert (Propiconazole + Chlorothalonil) | 4.3 SE | 5 fl oz | 10.8 bc | 3.5 e |
| Headway G (Propiconazole + Azoxystrobin) | 1 G | 4 lbs | 13.8 b | 3.6 e |
| Check | | 0 | 88.8 a | 1.0 f |

* Turfgrass quality was rated 1 to 9, with 9 = excellent.

**Means within columns followed by the same letter are not significantly different. LSD $P = 0.05$.

Figure 1. Snow mold fungicide treatments at the Chewelah Golf and Country Club. Chewelah, WA.

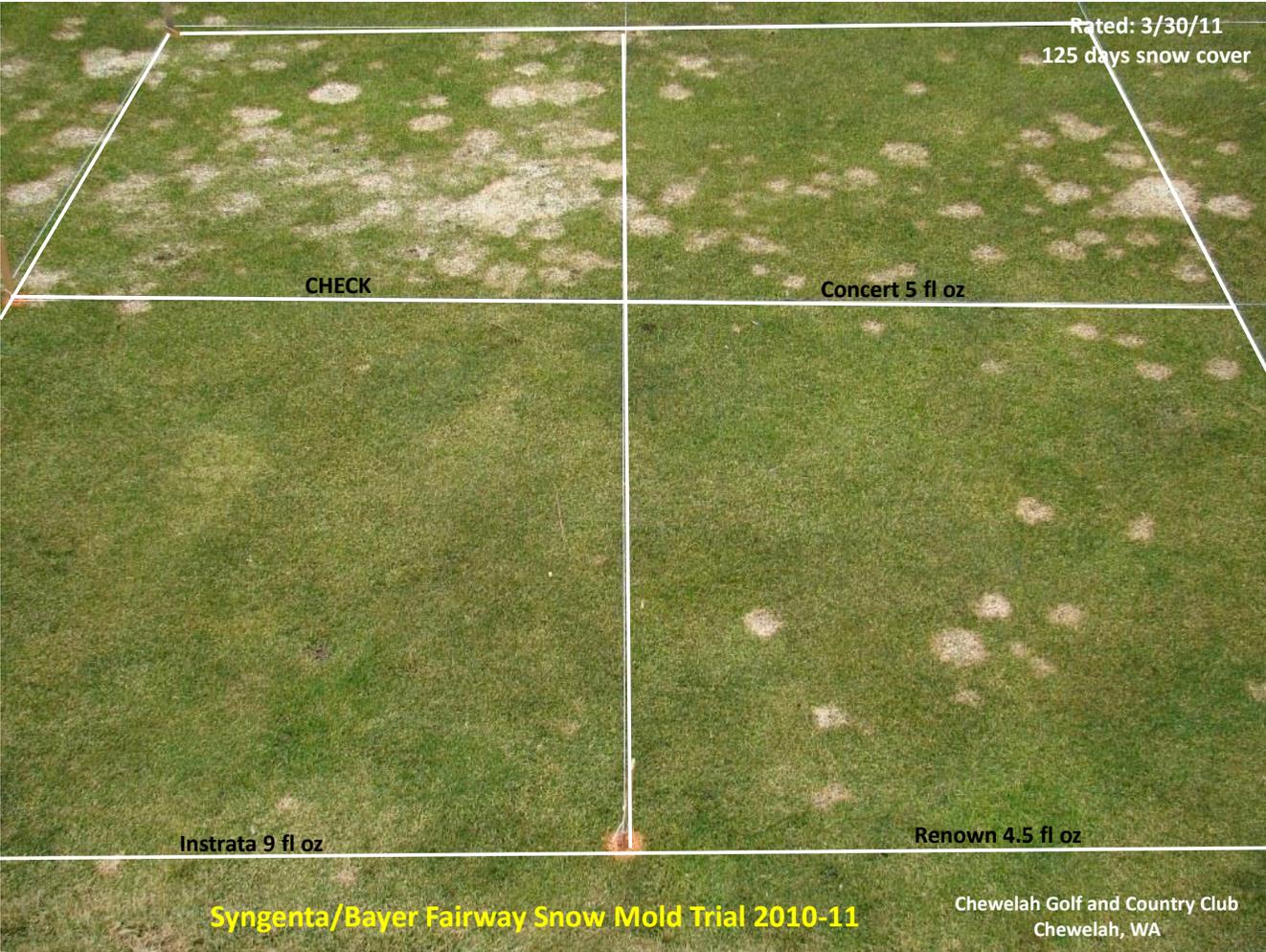


Figure 2. Snow mold fungicide treatments at the Chewelah Golf and Country Club. Chewelah, WA.



Figure 3. Snow mold fungicide treatments at the Chewelah Golf and Country Club. Chewelah, WA.

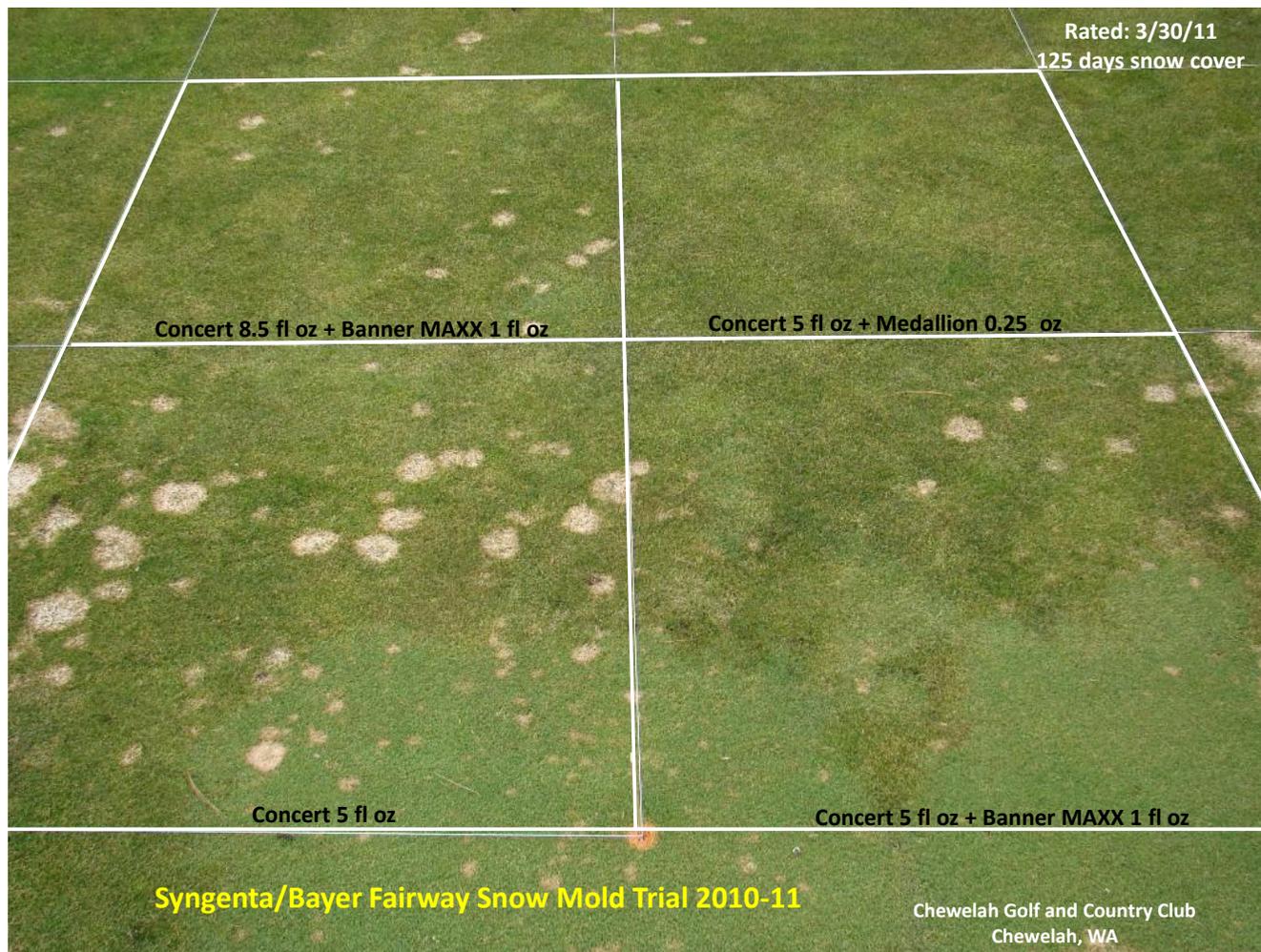


Figure 4. Snow mold fungicide treatments at the Chewelah Golf and Country Club. Chewelah, WA.

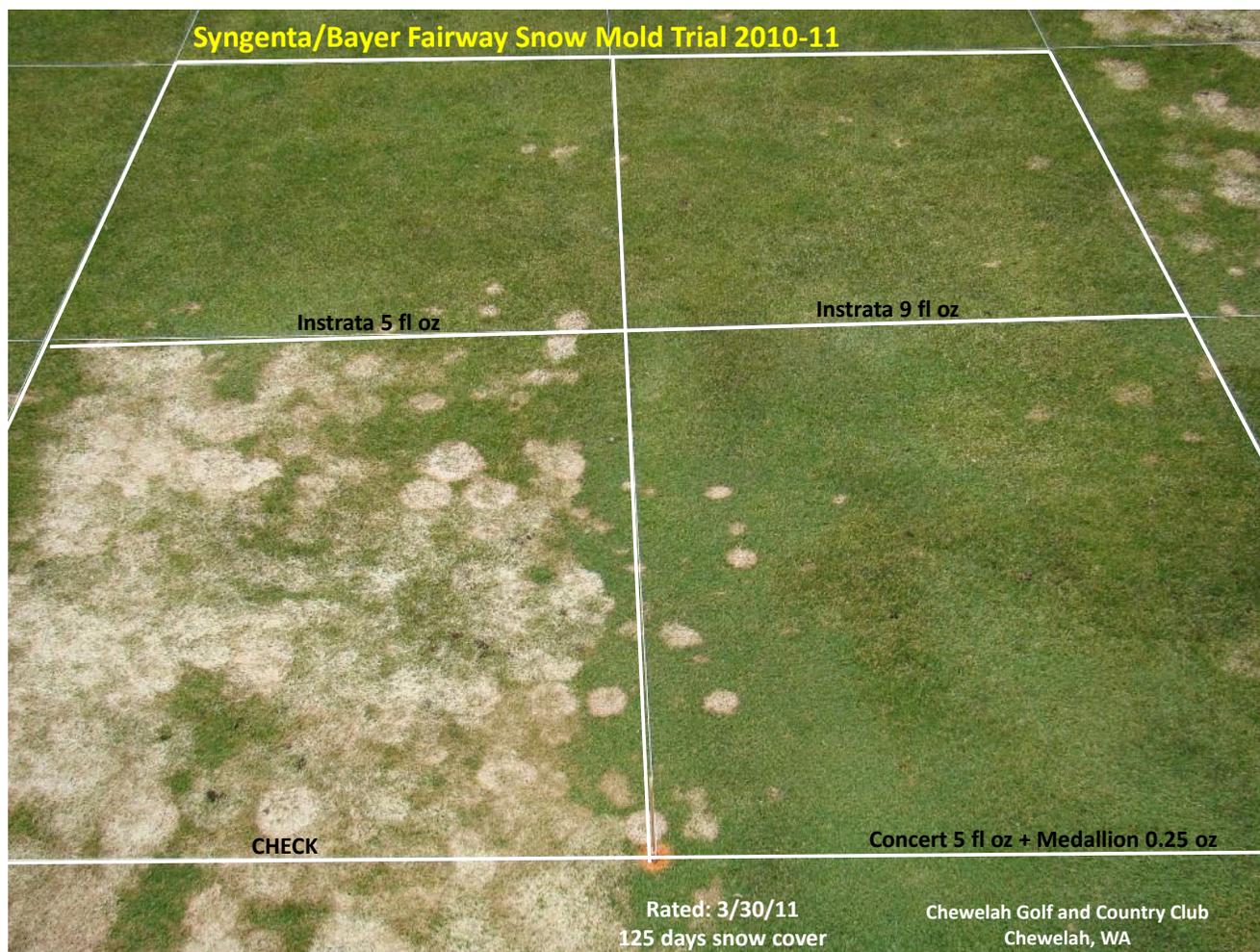


Figure 5. Snow mold fungicide treatments at the Chewelah Golf and Country Club. Chewelah, WA.

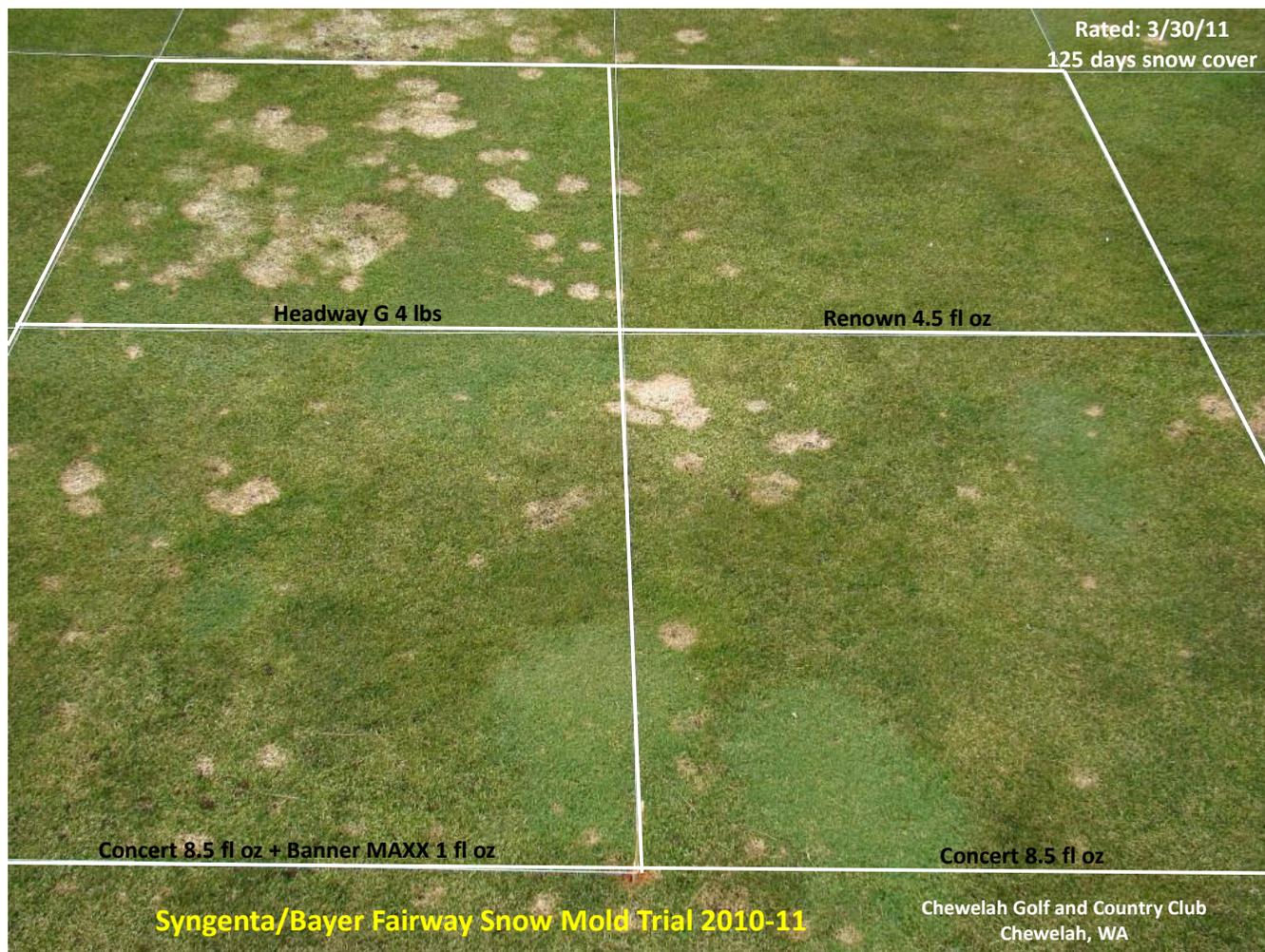


Figure 6. Snow mold fungicide treatments at the Chewelah Golf and Country Club. Chewelah, WA.

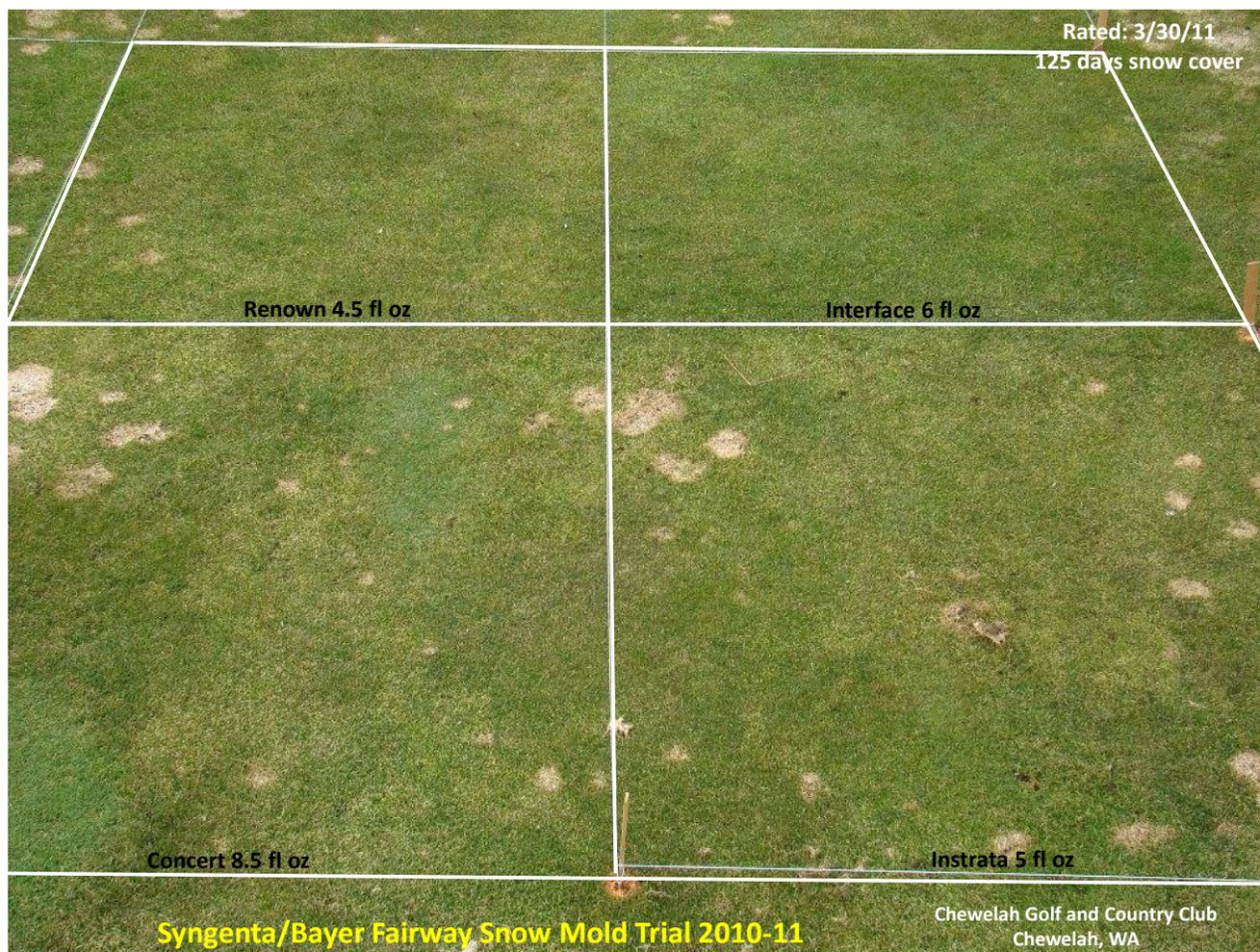


Figure 7. Snow mold fungicide treatments Reps 1 and 2 at the Chewelah Golf and Country Club. Chewelah, WA.

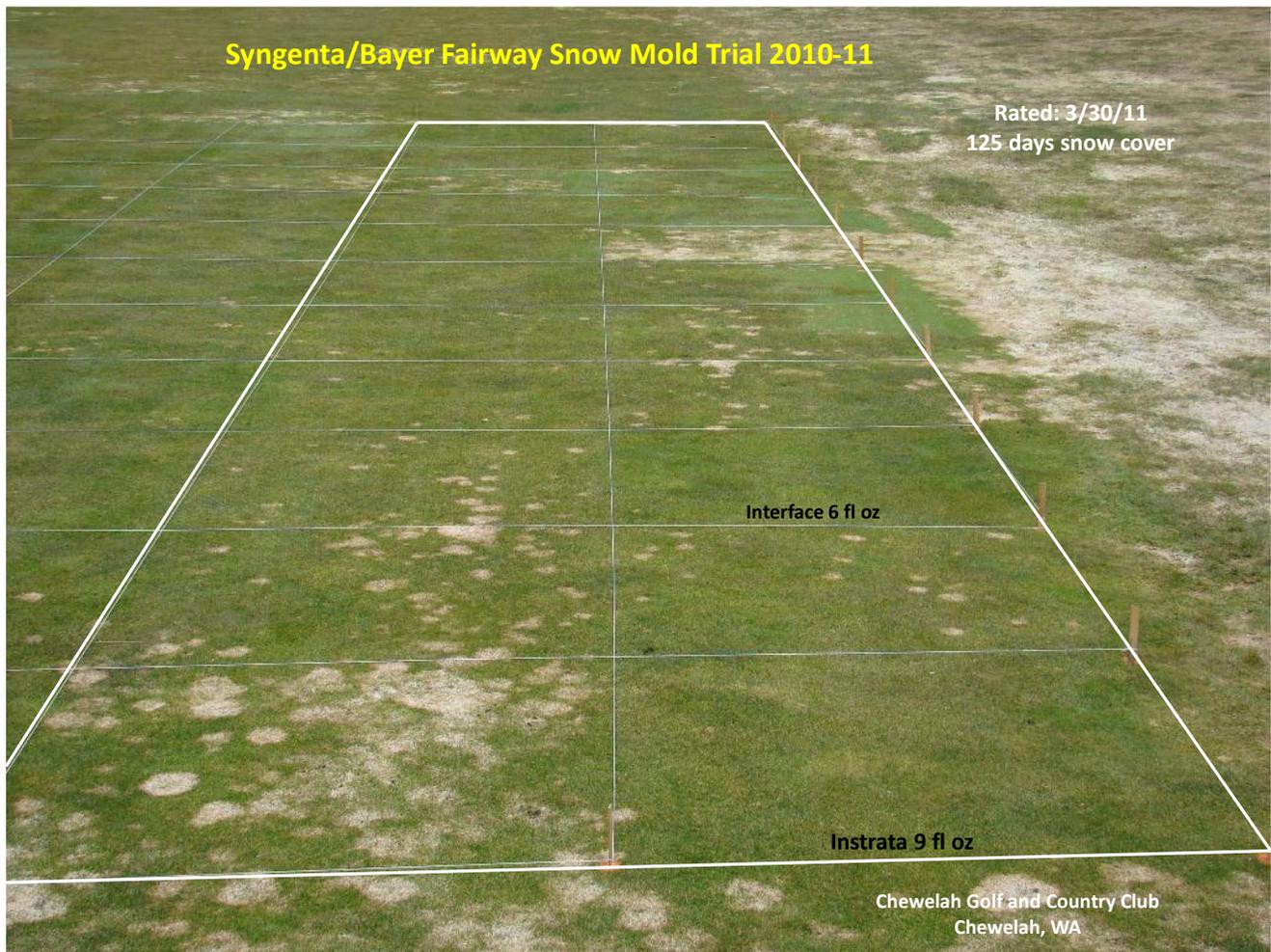


Table 2. The effect of Bayer's Interface and various Syngenta fungicide combinations to control snow mold on a fairway at the Whitetail Golf Club in McCall, ID. Rated 17 May 2011.

| Treatment | Form- ulation | Rate (oz, fl oz, or lbs/M) | Disease severity* |
|---|-------------------|----------------------------------|----------------------|
| Renown (Azoxystrobin + Chlorothalonil) | 5.16 SE | 4.5 fl oz | 5.6 |
| Interface (Iprodione + Trifloxystrobin) | | 6 fl oz | 6.0 |
| Headway G (Propiconazole + Azoxystrobin) | 1 G | 4 lbs | 6.0 |
| Check | | 0 | 6.4 |
| Concert (Propiconazole + Chlorothalonil) | 4.3 SE | 5 fl oz | 6.4 |
| Concert (Propiconazole + Chlorothalonil) | 4.3 SE | 8.5 fl oz | 6.5 |
| Concert (Propiconazole + Chlorothalonil) + Banner MAXX (Propiconazole) | 4.3 SE 1.3 MEC | 5 fl oz 1 fl oz | 6.5 |
| Instrata (Propiconazole + Fludioxonil+ Chlorothalonil) | 3.6 SE | 5 fl oz | 6.6 |
| Instrata (Propiconazole + Fludioxonil+ Chlorothalonil) | 3.6 SE | 9 fl oz | 7.0 |
| Concert (Propiconazole + Chlorothalonil) + Medallion (Fludioxonil) | 4.3 SE 50 WP | 5 fl oz 0.25 oz | 7.4 |
| Concert (Propiconazole + Chlorothalonil) + Banner MAXX (Propiconazole) | 4.3 SE 1.3 MEC | 8.5 fl oz 1 fl oz | 7.6 |

*Disease severity rate 1 to 9 with 9 = maximum disease.

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Figure 8. Snow mold fungicide treatments at the Whitetail Golf Club. McCall, ID.

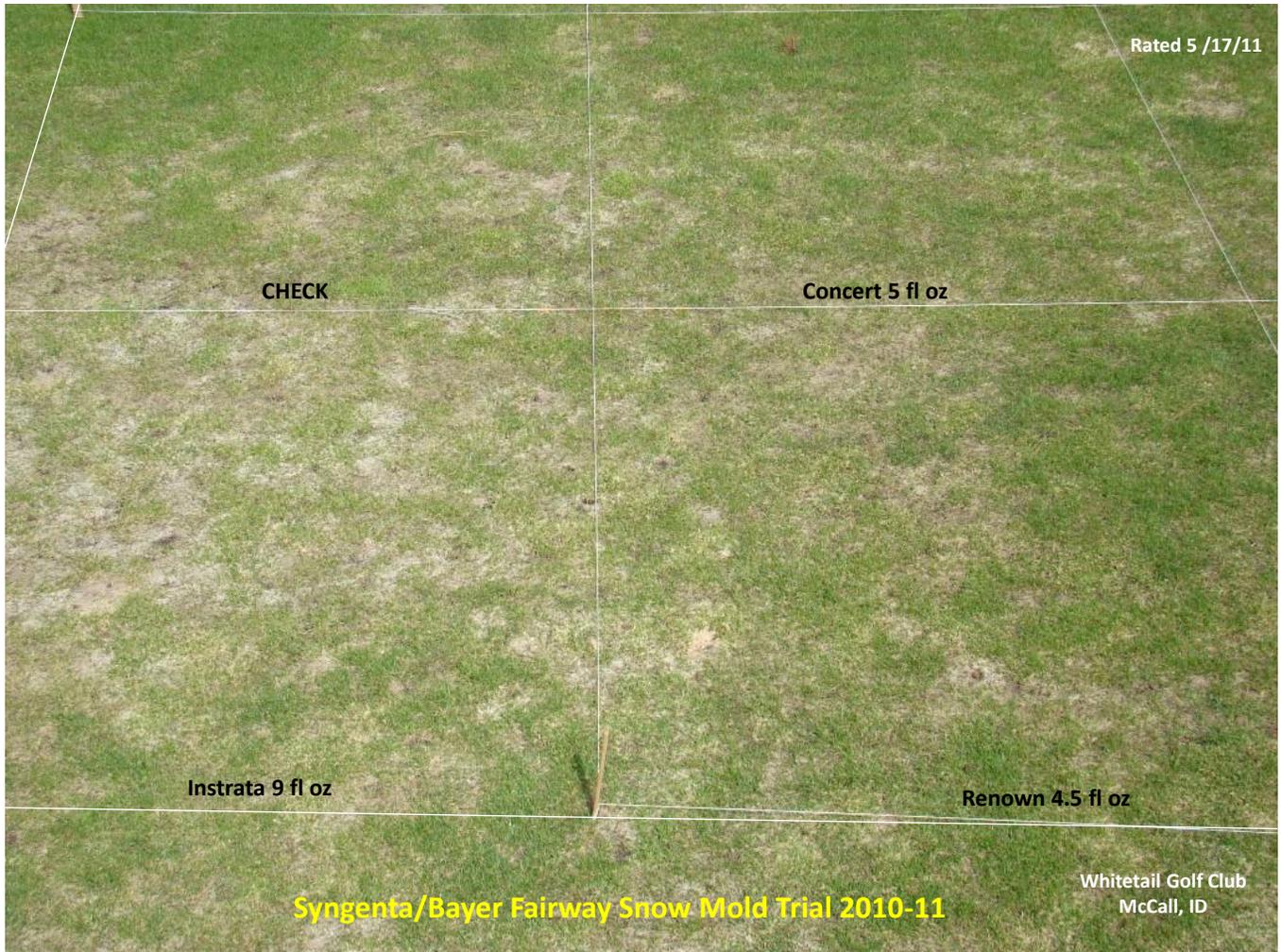


Figure 9. Snow mold fungicide treatments at the Whitetail Golf Club. McCall, ID.

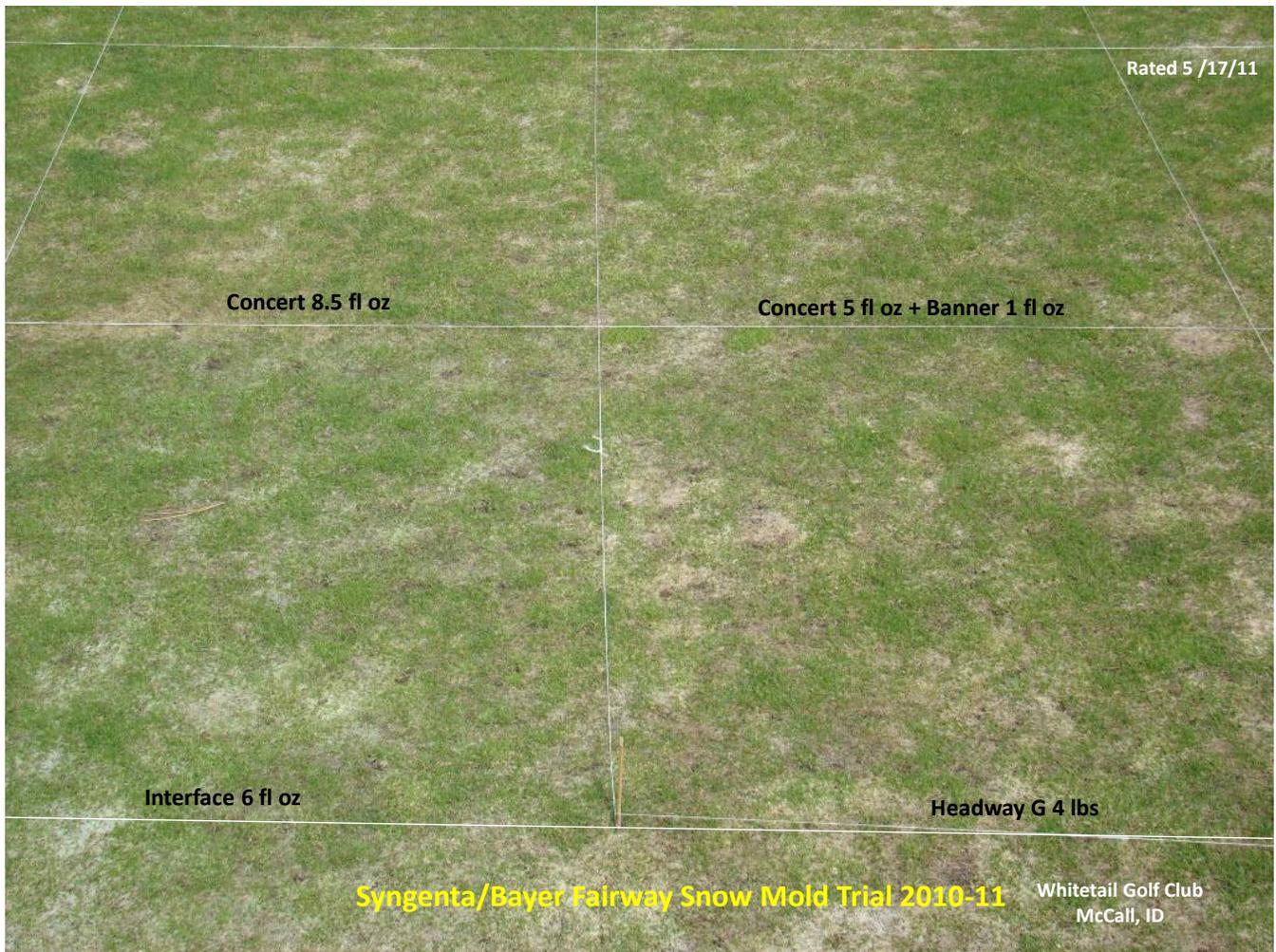


Figure 10. Snow mold fungicide treatments at the Whitetail Golf Club. McCall, ID.

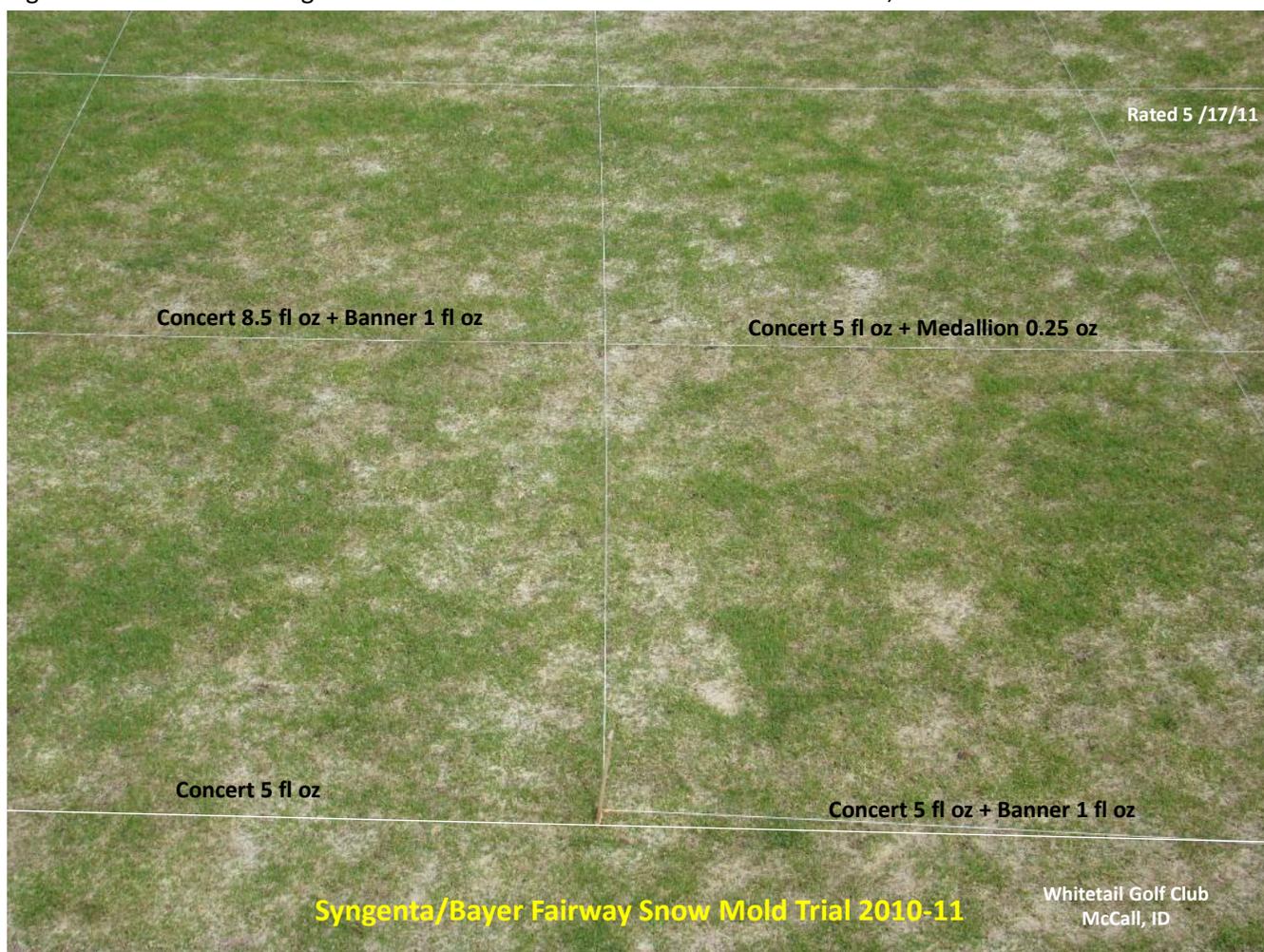


Figure 11. Snow mold fungicide treatments at the Whitetail Golf Club. McCall, ID.

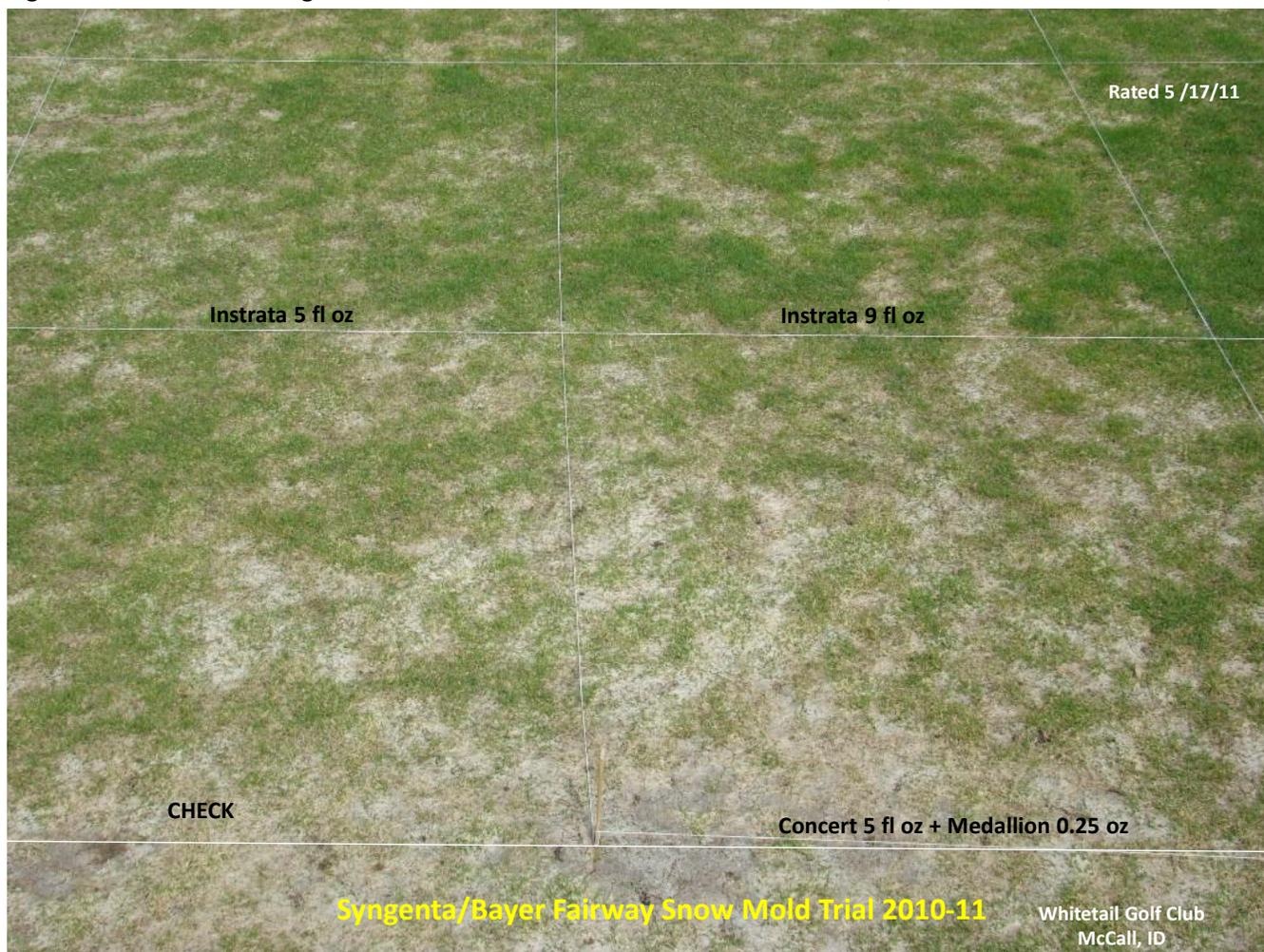


Figure 12. Snow mold fungicide treatments at the Whitetail Golf Club. McCall, ID.

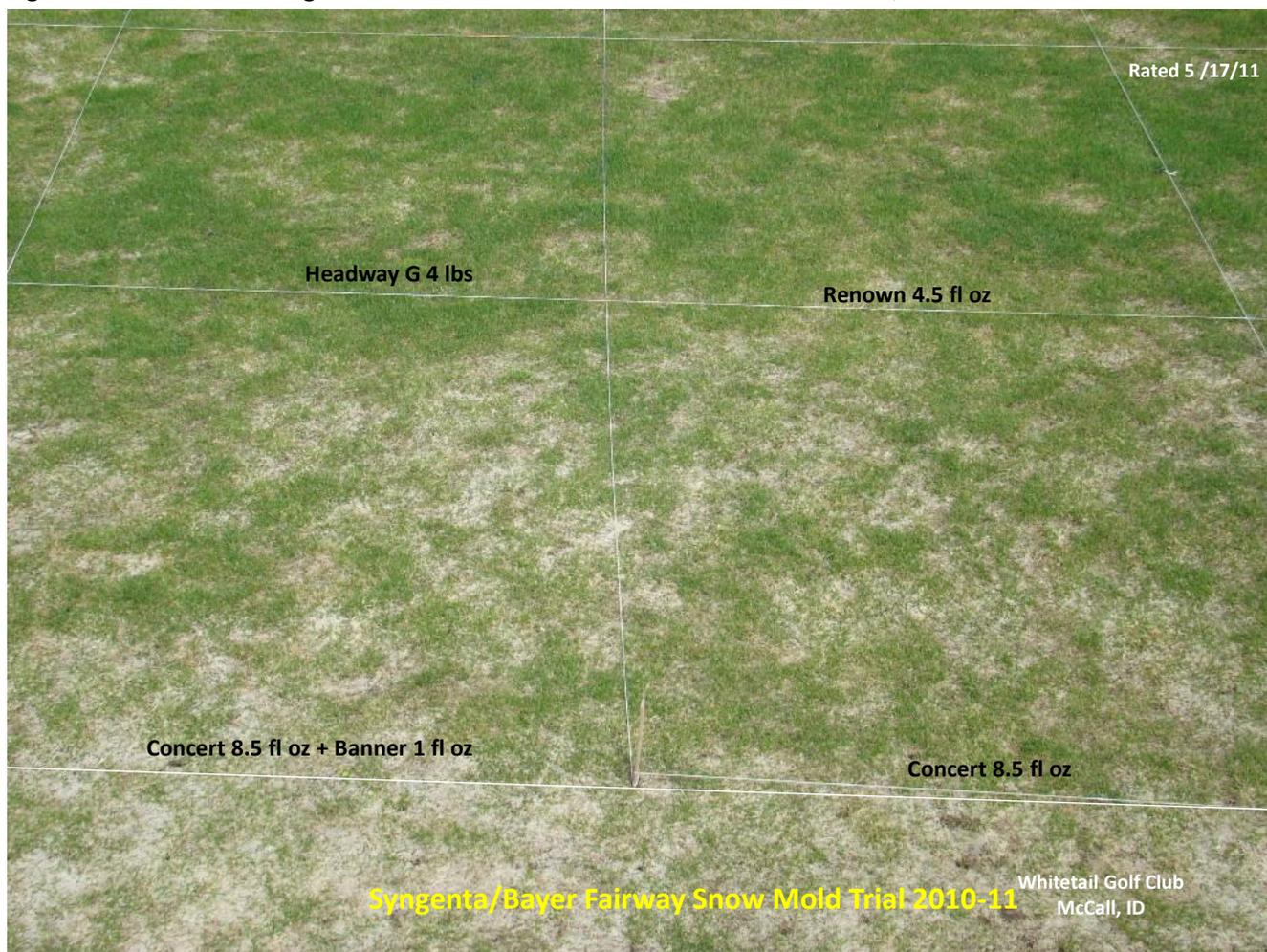


Figure 13. Snow mold fungicide treatments at the Whitetail Golf Club. McCall, ID.



Figure 14. Snow mold fungicide treatments at the Whitetail Golf Club. McCall, ID.

