

Evaluation of Fungicides from Bayer to Control Pink and Gray Snow Mold on Putting Greens in Idaho and Washington 2007-08.

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Snow mold control trials were conducted at 3 different locations in the Intermountain Region of the PNW, on a practice green at the Whitetail Golf Club in McCall, ID, a nursery green at the Chewelah Golf and Country Club in Chewelah, WA, and on a research green at the WSU Turfgrass and Agronomy Research Center (TARC) in Pullman, WA. The practice green at McCall is an USGA green of 'Providence' creeping bentgrass, the nursery green at Chewelah is a push-up green covered with 3" to 4" of sand with a mixed stand of 'Penncross' creeping bentgrass and annual bluegrass, and the research green is a pure stand of 'T-1' creeping bentgrass grown on an USGA green at Pullman. Individual treatment plots were 6' x 5' at McCall and 6' x 7' at Chewelah and Pullman with three replications in a randomized complete-block design. Treatments were applied 24 Oct 07, 1 Nov 07, and 15 Nov 07 at McCall, Chewelah, and Pullman, respectively. Fungicides were applied at 80 GPA with a bicycle-wheeled CO₂ pressurized (40 psi) sprayer with 11008 flat fan TeeJet nozzles. At McCall, one day prior to applying fungicide treatments, the practice green was core aerified and topdressed with sand (Figure 8). At Pullman snow cover was intermittent throughout the winter from the end of Nov 07 through the 26 Feb 08 (approx. 80 days). Continuous snow cover was from end of Nov 07 to 20 Apr 08 (approx. 140 days) at Chewelah and from mid Nov 07 to 8 May 08 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) on 29 Feb 08 at Pullman, 23 Apr 08 at Chewelah, and 13 May 08 at McCall.

Even though the Pullman sites experienced normal snow mold pressure, the non-treated control had only 1 % area infected with pink snow mold (*M. nivale*) (Table 1). I don't have an explanation for this low level of disease incidence in this part of the green. The other studies on the green exhibited normal snow mold disease in there check plots. However, all treatments resulted in very good to excellent snow mold control. Reserve at 7.6 fl oz/M resulted in the highest turfgrass quality. Chipco 26GT 4 fl oz + Turfcide 400 8 fl oz + Daconil Ultrex 5 oz resulted in the lowest turfgrass quality. Several treatments; Reserve 7.6 fl oz, Tartan 2 fl oz + 26GT 4 fl oz, Tartan 2 fl oz, and Tartan 2 fl oz + Daconil Ultrex 5 oz had turfgrass quality significantly higher then Instrata at 9 fl oz. An overview of reps 1 and 2 see figure 1.

At Chewelah, the non-treated control had 27 % area infected with roughly 20% pink (*M. nivale*) and 80% gray (*Typhula spp.*) snow mold (Table 2). No sclerotia were found in any of the control plots, therefore, no determination as to the percent of *Typhula incarnata* or *T.*

ishikariensis could be made. There was some winter injury on the research site which made rating turfgrass quality a little more difficult. However, all treatments had significantly less disease than the check. Turfgrass quality was highest with Reserve 7.6 fl oz, Lynx 1.5 fl oz + Compass 0.25 oz + Daconil Ultrex 5 oz, Lynx 1.5 fl oz + 26GT 4 fl oz + Daconil Ultrex 5 oz, Tartan 2 fl oz + Daconil Ultrex 5 oz, and Reserve 7.6 fl oz + 26GT 4 fl oz. Instrata and all treatment that had PCNB as part the fungicide combination had a definite chlorotic color, compared to the other treatments, which resulted in the lowest turfgrass quality ratings (Table 2 and Figures 3, 4 and 6).

At McCall, the research site apparently was treated with fungicides in the fall by the staff at Whitetail either before or after the experiment was put out, which resulted in the total control of snow mold throughout the entire research site (Table 3). However, treatments that included PCNB (Tartan 2 fl oz + Turfcide 400 6 fl oz and 26GT 4 fl oz + Turfcide 400 8 fl oz + Daconil Ultrex 5 oz) showed up as more chlorotic, which resulted in lower turfgrass quality, compared to the other treatments (Table 3 and Figure 7).

Table 1. Evaluation of Bayer fungicides to control pink snow mold at the WSU Turfgrass and Agronomy Research Center. Pullman, WA. Rated 29 Feb 2008.

Treatment	Rate (fl oz or oz/M)	Disease* (% area infected)	Turfgrass quality** (1-9)
Reserve (Tebuconazole + Chlorothalonil)	7.6 fl oz	0.0	7.3 a***
Tartan (Trifloxystrobin + Triadimefon) + Chipco 26GT (Iprodione)	2 fl oz 4 fl oz	0.0	6.7 ab
Tartan (Trifloxystrobin + Triadimefon)	2 fl oz	0.0	6.3 bc
Tartan (Trifloxystrobin + Triadimefon) + Daconil Ultrex (Chlorothalonil)	2 fl oz 5 oz	0.0	6.3 bc
Lynx (Tebuconazole) + Chipco 26GT (Iprodione)	1.5 fl oz 4 fl oz	0.0	6.0 bcd
Lynx (Tebuconazole) + Daconil Ultrex (Chlorothalonil)	1.5 fl oz 5 oz	0.0	5.7 cd
Instrata (Propiconazole + Flutioxonil + Chlorothalonil)	9 fl oz	0.0	5.3 d
Chipco 26GT (Iprodione) + Turficide 400 (PCNB) + Daconil Ultrex (Chlorothalonil)	4 fl oz 8 fl oz 5 oz	0.0	4.0 d
CHECK	0	1.0	6.3 bc
Lynx (Tebuconazole) + Compass (Trifloxystrobin) +	1.5 fl oz 0.25 oz	1.7	5.3 d

* Percent area infected with snow mold (pink and/or gray)

**Turfgrass quality rate 1-9, with 9 = excellent.

*** Values within a column followed by the same letter are not significantly different. LSD $P=0.05$.

Figure 1. Bayer snow mold trial at the WSU Turfgrass and Agronomy Research Center. Pullman, WA. Rated 29 Feb 08.



Table 2. Evaluation of Bayer fungicides to control snow mold at Chewelah Golf and Country Club. Chewelah, WA. Rated 23 Apr 2008.

Treatment	Rate (fl oz or oz/M)	Disease* (% area infected)	Turfgrass quality** (rated 1-9)
Lynx (Tebuconazole) + Compass (Trifloxystrobin) + Daconil Ultrex (Chlorothalonil)	1.5 fl oz 0.25 oz 5 oz	0.0 b***	5.2 ab
Tartan (Trifloxystrobin + Triadimefon) + Turficide 400 (PCNB)	2 fl oz 6 fl oz	0.7 b	3.8 bcde
Instrata (Propiconazole + Flutioxonil + Chlorothalonil)	9 fl oz	1.3 b	3.3 cdef
Reserve (Tebuconazole + Chlorothalonil)	7.6 fl oz	1.7 b	5.3 a
Lynx (Tebuconazole) + Chipco 26GT (Iprodione) + Daconil Ultrex (Chlorothalonil)	1.5 fl oz 4 fl oz 5 oz	1.7 b	5.0 ab
Tartan (Trifloxystrobin + Triadimefon) + Daconil Ultrex (Chlorothalonil)	2 fl oz 5 oz	2.0 b	4.7 abc
Reserve (Tebuconazole + Chlorothalonil) Chipco 26GT (Iprodione) +	7.6 fl oz 4 fl oz	2.7 b	4.3 abcd
Reserve (Tebuconazole + Chlorothalonil) Compass (Trifloxystrobin)	3.8 fl oz 0.25 oz	2.7 b	3.2 def
Chipco 26GT (Iprodione) + Turficide 400 (PCNB) + Daconil Ultrex (Chlorothalonil)	4 fl oz 8 fl oz 5 oz	3.7 b	2.0 f
CHECK	0	27.3 a	2.7 ef

* Percent area infected with snow mold (pink and/or gray)

**Turfgrass quality rate 1-9, with 9 = excellent.

*** Values within a column followed by the same letter are not significantly different. LSD $P=0.05$.

Figure 2. Bayer snow mold trial at Chewelah Golf and Country Club. Chewelah, WA.
Rated 23 Apr 08.

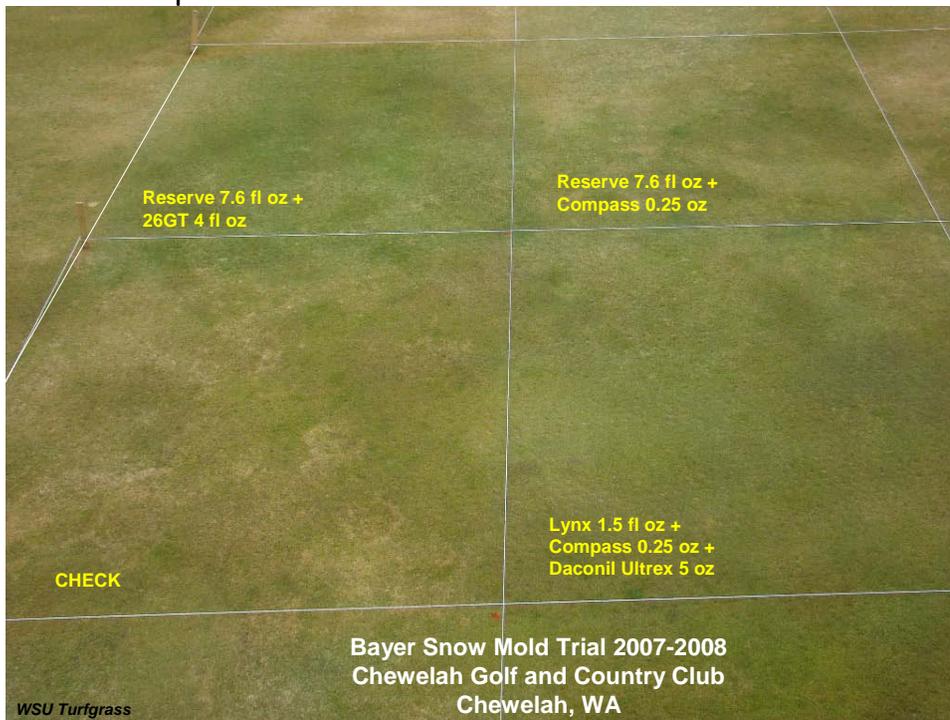


Figure 3. Bayer snow mold trial at Chewelah Golf and Country Club. Chewelah, WA.
Rated 23 Apr 08.

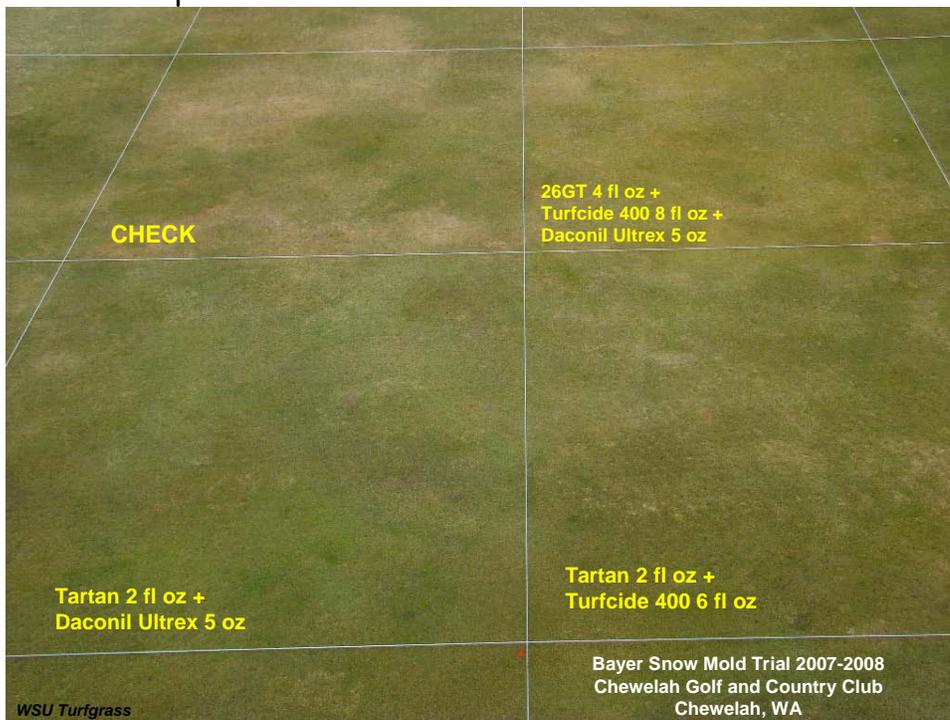


Figure 4. Bayer snow mold trial at Chewelah Golf and Country Club. Chewelah, WA.
Rated 23 Apr 08.

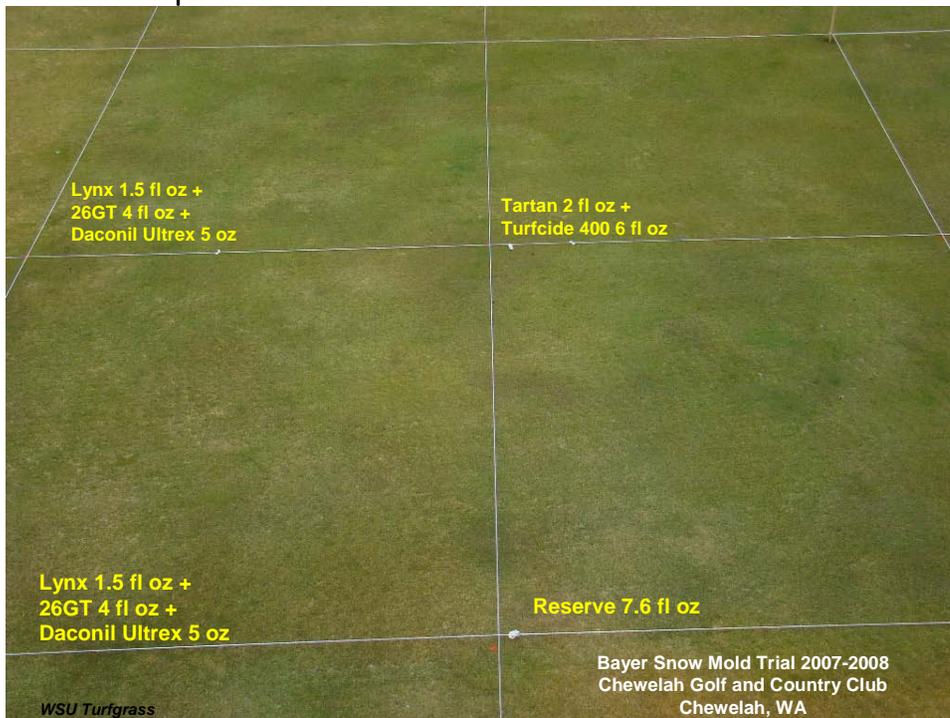


Figure 5. Bayer snow mold trial at Chewelah Golf and Country Club. Chewelah, WA.
Rated 23 Apr 08.

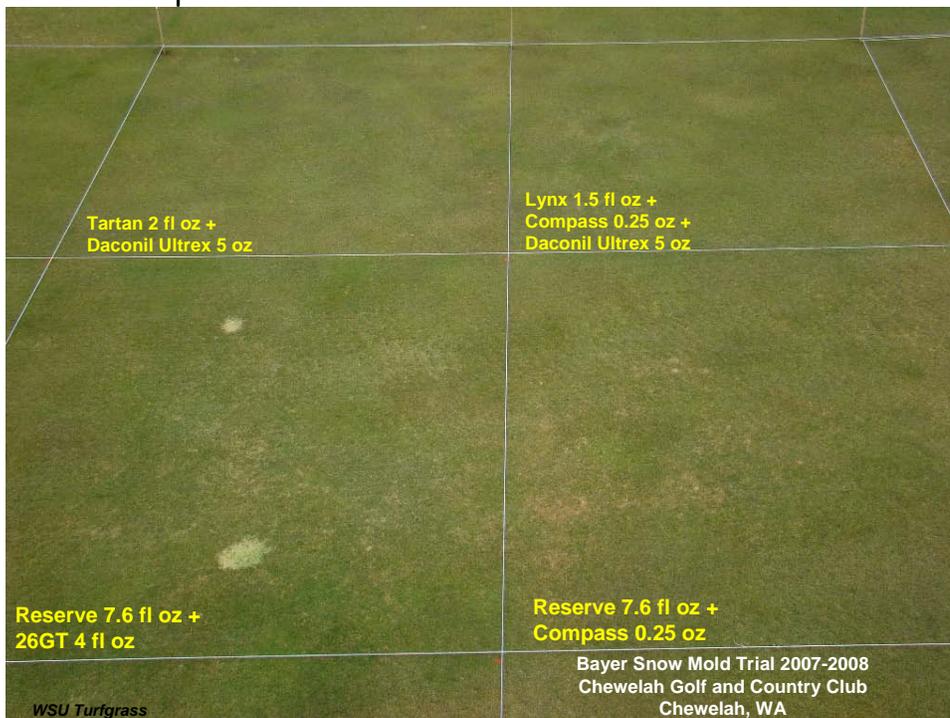


Figure 6. Bayer snow mold trial at Chewelah Golf and Country Club. Chewelah, WA.
Rated 23 Apr 08.



Table 3. Evaluation of Bayer fungicides to control snow mold at Whitetail Golf Club. McCall, ID. Rated 13 May 2008.

Treatment	Rate (fl oz or oz/M)	Disease* (% area infected)	Turfgrass quality** (rated 1-9)
CHECK	0	0	6.7 a***
Lynx (Tebuconazole) + Compass (Trifloxystrobin) + Daconil Ultrex (Chlorothalonil)	1.5 fl oz 0.25 oz 5 oz	0	6.7 a
Tartan (Trifloxystrobin + Triadimefon) + Daconil Ultrex (Chlorothalonil)	2 fl oz 5 oz	0	6.7 a
Lynx (Tebuconazole) + Chipco 26GT (Iprodione) + Daconil Ultrex (Chlorothalonil)	1.5 fl oz 4 fl oz 5 oz	0	6.7 a
Reserve (Tebuconazole + Chlorothalonil)	7.6 fl oz	0	6.7 a
Reserve (Tebuconazole + Chlorothalonil) Chipco 26GT (Iprodione) +	7.6 fl oz 4 fl oz	0	6.7 a
Reserve (Tebuconazole + Chlorothalonil) Compass (Trifloxystrobin)	3.8 fl oz 0.25 oz	0	6.7 a
Instrata (Propiconazole + Flutioxonil + Chlorothalonil)	9 fl oz	0	6.7 a
Tartan (Trifloxystrobin + Triadimefon) + Turfcide 400 (PCNB)	2 fl oz 6 fl oz	0	4.7 b
Chipco 26GT (Iprodione) + Turfcide 400 (PCNB) + Daconil Ultrex (Chlorothalonil)	4 fl oz 8 fl oz 5 oz	0	4.3 b

* Percent area infected with snow mold (pink and/or gray)

**Turfgrass quality rate 1-9, with 9 = excellent.

*** Values within a column followed by the same letter are not significantly different. LSD $P=0.05$.

Figure 7. Bayer snow mold trial at Whitetail Golf Club. McCall, ID. 2008.

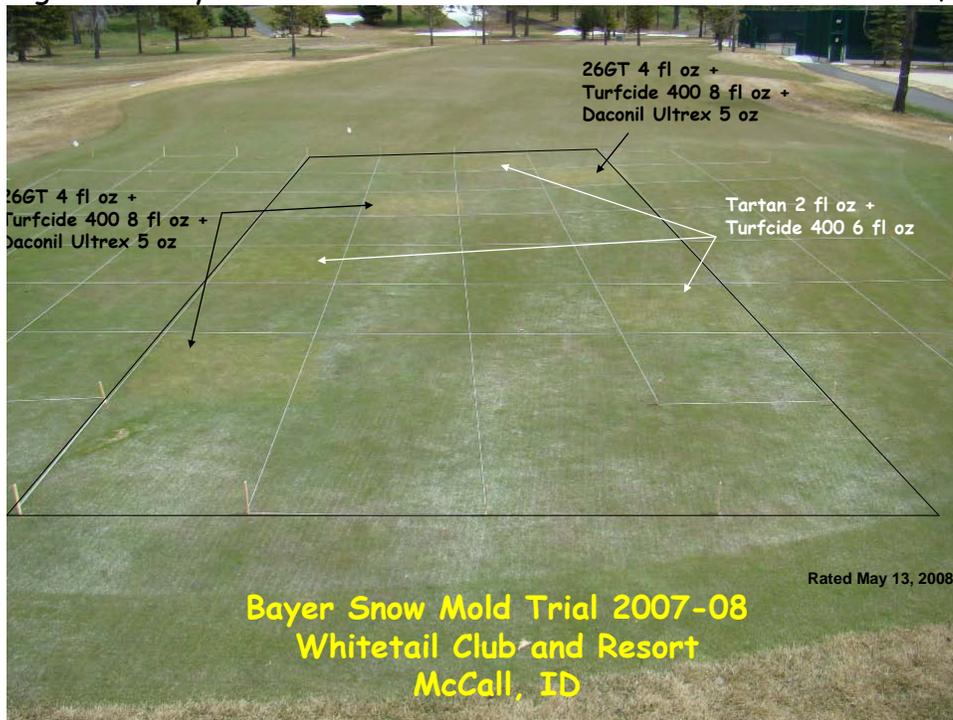


Figure 8. Core aeration of research area 1 day prior to application of Bayer snow mold fungicides at Whitetail Golf Club. McCall, ID. Picture taken Oct 25, 2007.

