

Development of Tenacity 4SC for Weed Control Recommendations with Spray Adjuvants

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August 24, 2011

A study was conducted at the Bryden Canyon Golf Course in Lewiston, ID to determine if there were differences in broadleaf weed control in a turfgrass stand by using different spray adjuvants (In Place or Hasten) tank mixed with Tenacity 4SC. In addition, Foundation (Wilbur-Ellis, Co.) a herbicide with 4 active ingredients (Triclopyr, Sulfentrazone, 2,4-D, and Dicamba) was included to determine if additional broadleaf weed control could be achieved when tank mixed with Tenacity 4SC. The turfgrass stand was a primary rough located near #2 tee, which received irrigation to prevent stress. The turfgrass stand was predominately fineleaf fescue with some Kentucky bluegrass. A bicycle-wheeled CO₂ pressurized sprayer with 11002 flat fan nozzles applied the tank mixes at 25 GPA at 40 psi. Applications were made on 18 May 2011. Data taken 1, 2, 4, and 6 weeks after treatment (WAT) included: turfgrass phytotoxicity rated on a scale of 0-10, with 0 = no phytotoxicity and above 2 is considered unacceptable. Percentage of stand composed of dandelion or white clover was also determined at each rating date.

Tenacity alone or tank mixed with the adjuvants, In Place or Hasten, resulted in similar levels of turfgrass phytotoxicity throughout the study (Figure 1). By 2 WAT, these treatments resulted in high levels of phytotoxicity (Photos: Figures 10, 13, and 15), but showed no phytotoxicity by 4 WAT. It was obvious that the 5 fl oz/A rate of Tenacity alone is phytotoxic to the fineleaf fescue at 2 WAT, but when combined with Foundation or Foundation + In Place unacceptable phytotoxic effects did not appear (Photos: Figures 11 and 14).

Dandelion or white clover resulted in similar levels of control with Tenacity alone or combined with In Place or Hasten through 6 WAT (Figure 2 and 3). These treatments did provide acceptable dandelion control but did not provide effective control of white clover. It is interesting to note that by 6 WAT there appears to be an increase in dandelion and white clover in these treatments. However, when Tenacity was combined with Foundation or Foundation + In Place, both dandelion and white clover were controlled very well through 6 WAT. In addition, significant control of these weeds was apparent by 1 WAT (Photos: Figures 5 and 7).

Overall, combining In Place or Hasten with Tenacity at 5 fl oz/A, in this study, did not result in significant differences in turfgrass phytotoxicity or broadleaf weed control compared to

Tenacity at 5 fl oz/A alone. Moreover, these treatments did result in high levels of phytotoxicity at 2 WAT. In addition, they did provide good dandelion control, but did not provide good white clover control. However, when Tenacity was combined with Foundation or Foundation + In Place there was fast knock down (1 WAT) of both dandelion and white clover without any unacceptable phytotoxic effects to the fineleaf turfgrass stand at 1 or 2 WAT. These treatments provided over 80% control 2 WAT and approximately 95% control 6 WAT for each of these weeds.

Figures 4 through 21 are photos taken of each treatment 1, 2, and 6 WAT.

Figure 1. The effect of adjuvant and/or herbicide combinations with Tenacity on turfgrass phytotoxicity in a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.

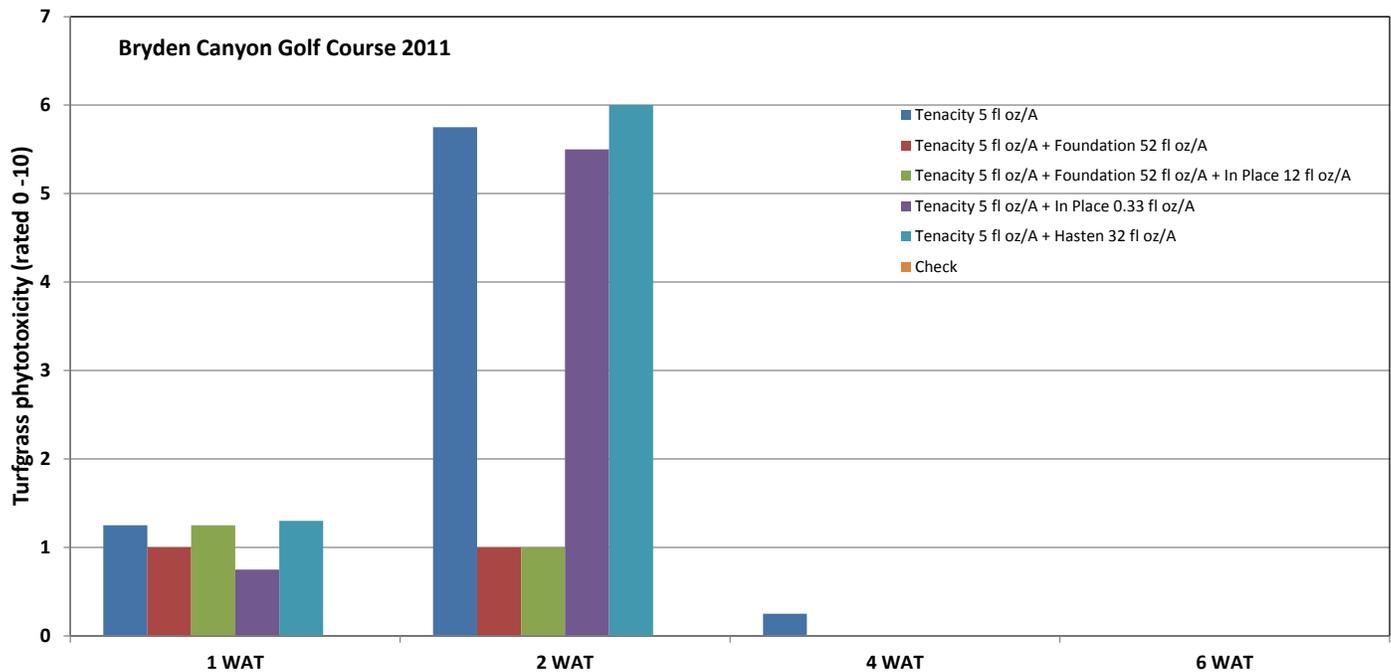


Figure 2. The effect of adjuvant and/or herbicide combinations with Tenacity on white clover control in a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.

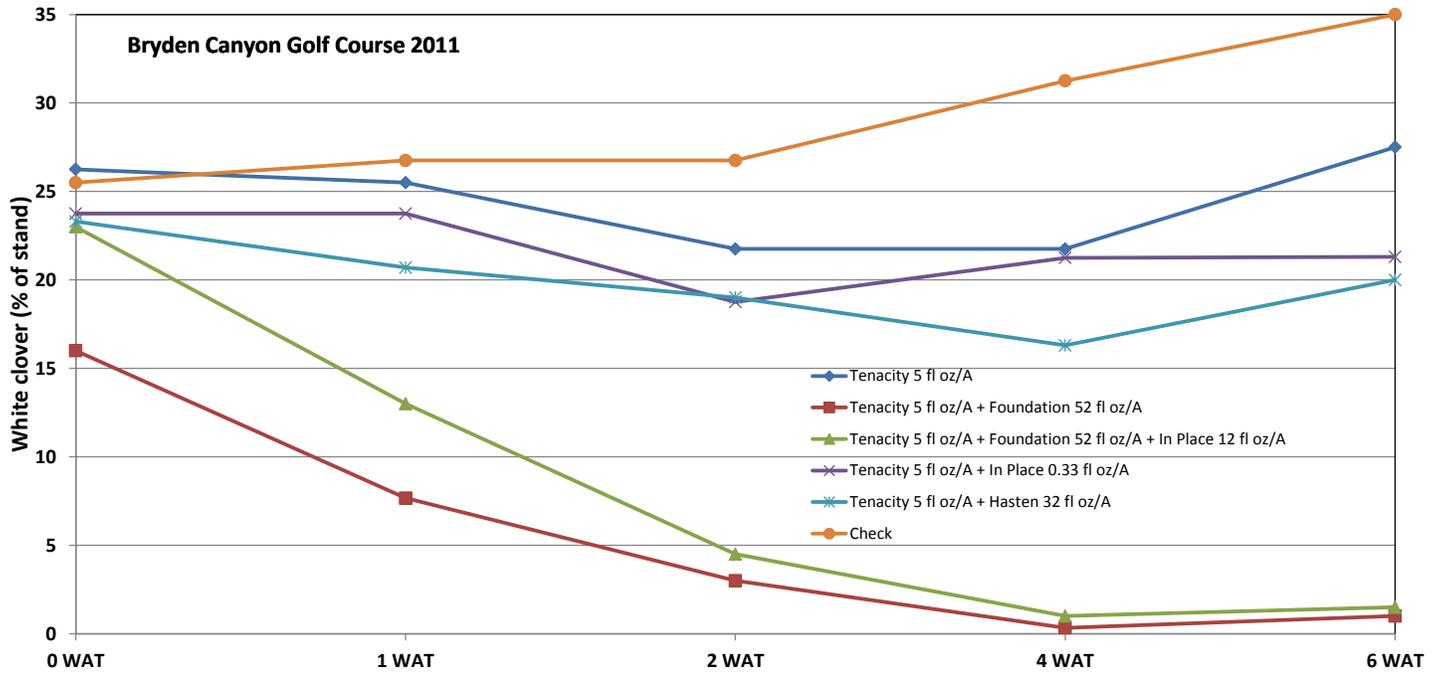


Figure 3. The effect of adjuvant and/or herbicide combinations with Tenacity on dandelion control in a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.

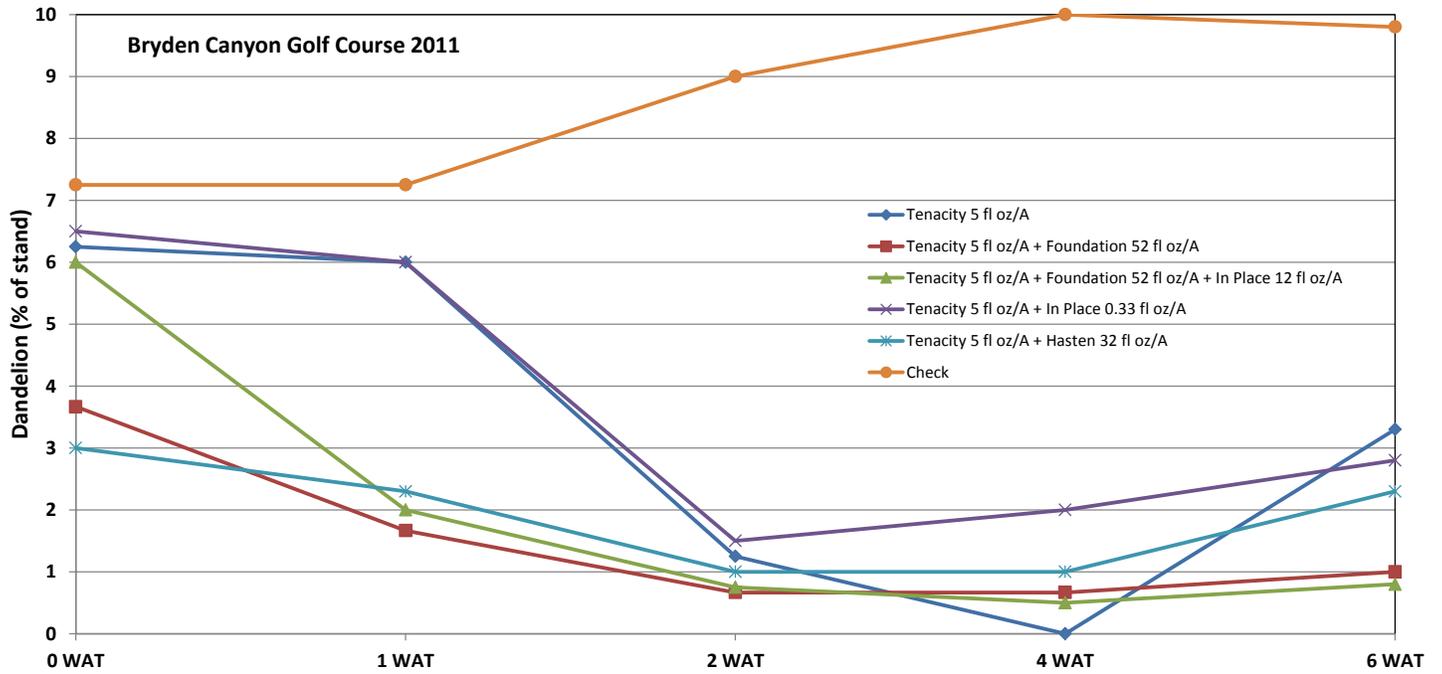


Figure 4. The effect 1 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 5. The effect 1 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 6. The effect 1 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



5/25/11
1 WAT

Tenacity 5 fl oz/A

Bryden Canyon Golf Course
Lewiston, ID

Figure 7. The effect 1 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 8. The effect 1 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



5/25/11
1 WAT

Tenacity 5 fl oz/A +
Hasten 32 fl oz/A

Bryden Canyon Golf Course
Lewiston, ID

Figure 9. The effect 1 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 10. The effect 2 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 11. The effect 2 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



6/1/11
2 WAT

Tenacity 5 fl oz/A +
Foundation 52 fl oz/A +
In Place 12 fl oz/A

Bryden Canyon Golf Course
Lewiston, ID

Figure 12. The effect 2 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 13. The effect 2 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 14. The effect 2 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 15. The effect 2 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 16. The effect 6 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 17. The effect 6 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 18. The effect 6 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 19. The effect 6 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 20. The effect 6 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



Figure 21. The effect 6 WAT of adjuvant and/or herbicide combinations with Tenacity applied to a fineleaf fescue/Kentucky bluegrass stand at Bryden Canyon Golf Course. Lewiston, ID.



6/28/11
6 WAT

Tenacity 5 fl oz/A +
Hasten 32 fl oz/A

Bryden Canyon Golf Course
Lewiston, ID