



2023-2024 Winter Tree Leaf Mulching Evaluation: OJ Noer Turfgrass Research Facility – Madison, WI

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OBJECTIVE

To evaluate different tree leaf mulching techniques and leaf depths for their effect on snow mold development and winter survival on lawn height turfgrass.

MATERIALS AND METHODS

This evaluation was conducted at the OJ Noer Turfgrass Research and Education Facility in Madison, WI on a Kentucky bluegrass (*Poa pratensis*) and perennial ryegrass (*Lolium perenne*) sward maintained at a height of 2.5 inches. Individual plots measured 5 ft x 5 ft and were arranged in a randomized complete block design with four replications. Tree leaves were collected and added to their respective plots on 15 Nov 2023, and subsequently covered with a leaf netting to keep treatments in place over winter. The netting and leaves were removed on 12 Mar 2024 and winter damage, turf quality, and turf color were evaluated the same day. Winter damage was visually rated as percent area affected, turfgrass quality was visually rated on a 1-9 scale with 6 being acceptable, and chlorophyll content (turfgrass color) was rated using a FieldScout CM 1000 Chlorophyll Meter from Spectrum Technologies, Inc. (Aurora, IL). Treatment means were analyzed using Fisher's LSD method and are presented in Table 1.

RESULTS AND DISCUSSION

Plots were damaged by a combination of disease (gray snow mold caused by *Typhula incarnata*) and smothering damage that we grouped into a rating called 'Winter Damage'. Treatments 1, 2, and 4 had the lowest levels of damage and were of acceptable turf quality. Both 5-cm treatments had the best turf color, with the nontreated treatment having slightly reduced turf color. Treatments that received 10 cm of either mulched or unmulched leaves were the worst performing treatments. In addition to high levels of damage, the turf plants were smothered, and individual plants were chlorotic and etiolated in treatments 3 and 5. These treatments also had the worst turf quality and color ratings.

Table 1: Mean snow mold severity, turf quality, and turf color were assessed on 12 Mar 2024 at the OJ Noer Research Facility in Madison, WI.

	Treatment	Rate	Winter Damage ^a	Turf Quality ^b	Turf Color ^c
1	Non-treated control		0.0c	6.0a	124.5ab
2	Mulched Leaves	5 cm depth	7.5c	6.3a	148.5a
3	Mulched Leaves	10 cm depth	77.5a	2.8c	104.3b
4	Unmulched Leaves	5 cm depth	1.3c	6.8a	157.0a
5	Unmulched Leaves	10 cm depth	41.3b	4.3b	99.3b
		LSD P=.05	13.65	0.95	35.1

All applications were applied on 15 Nov 2023

^aWinter damaged area assessed on 12 Mar 2024. Winter damage is a combination of snow mold and smothering damage.

^bQuality was visually assessed where 1 = dead, 6 = acceptable, 9 = dark green.

^cColor was assessed using a FieldScout CM1000 Chlorophyll Meter from Spectrum Technologies, Inc.