

Cultural Management of Home Lawn Health: exploring and explaining the relationship between soil characteristics and fungal disease in turfgrass

Project Leader: Maggie Wolf, Asst. Prof. Extension Horticulture, Salt Lake County.

Collaborators: Karl Hauptfleisch, USU Extension Master Gardener Volunteer and Master Gardener Help Desk Personnel, Salt Lake County.

Cooperators: Home owners and landscape managers in Salt Lake County.

Situation:

Homeowners over-apply fungicides on lawns

Karl Hauptfleisch has worked in the Salt Lake County office of USU Extension for several years, answering phone and office visit questions about gardening and landscape problems. Lawn care is one of the topics most commonly asked about, and many of those are complaints about brown spots in the lawn. Many callers cite recommendations from local garden centers to apply fungicides as a remedy for lawn problems, but treatments have been ineffective for the callers.

Clients with turfgrass problems often submit soil samples for analysis

Karl suspects a relationship between high soil phosphorous levels and increased fungal disease incidence. Because clients who call or visit with lawn problem questions often send a soil sample to the USUAL for analysis, there is a possibility that this possible relationship can be checked.

Objective:

To help homeowners learn about cultural practices that help prevent fungal disease problems in lawns. In order to ascertain whether there may be a positive relationship between high phosphorous levels in soil and the incidence of fungal disease in turfgrass, Karl will follow up turfgrass problem questions with soil samples. The data he collects will be analyzed to test whether there is any correlation.

Procedure:

Collating data from previous soil tests and client questions

All soil test results for Salt Lake County clients have been collected and stored by Maggie Wolf, Horticulture Agent. Topics of clients' phone calls over the past several years have been noted and saved. Karl will review these reports, calling clients and asking further questions when necessary.

Re-testing soil at fungal-affected and control sites

To be sure that soil samples were taken appropriately and test results accurately reflect the soil characteristics at sites, Karl will travel to cooperator sites and re-sample the soil and sent to the USUAL for analysis. Samples of turf suspected of fungal infections will be sent to the USU Plant Pathology Diagnostic Lab. Test results will be collated and data tabulated in a format appropriate for analysis.

Data collection and collation during early spring

Karl will collect soil and turfgrass specimens during spring and early summer, 2008. Once test results are returned and data collected, a statistician will work on testing the data for statistical significance. A final report will be co-written by Karl Hauptfleisch and Maggie Wolf no later than October, 2008.

Data Analyses and Presentation of Results

Statistical analyses of data will be directed and/or performed by USU Extension faculty. Results will be shared with USU Extension, landscape professionals, and the general public through an online publication, printed Fact Sheet, and articles in trade magazines and mass media.

Evaluation

As part of the initial survey, Karl will record the amounts of fungicide recommended, purchased, and/or applied by targeted clients. Each cooperator will receive a copy of the results, along with recommendations for turfgrass best management practices. Cooperators will be invited to participate in a follow-up survey to gauge their changes in knowledge and willingness to change their cultural lawn care habits. The effectiveness of educating cooperators can be quantified in terms of how much fungicide they will now NOT apply, how much money they can save by NOT buying fungicide and by reducing the amounts of complete fertilizer they apply, and how much time they will save with their new best management practices.

Educational Products

Online publication (fact sheet) about soil fertility and turfgrass fungal diseases; this may be distributed through county Extension offices

Articles published in newspapers.

Articles published in trade magazines (UNLA's Trunkline, etc.)

Educational outreach

Results will be shared with homeowners, landscape managers and landscape professionals at various meetings and events. USU Extension Master Gardeners will help distribute printed Fact Sheets at informational booths, speaking events, and meetings. E-mail with summary and links to the new online publication will be sent to agricultural and/or groundskeeper contacts, such as the Utah Farm Bureau, the Sport Turf Manager's Association, state and county facilities managers, and environmental organizations for further dissemination of the results of this project.

Budget

Mileage reimbursement	\$200
Soil tests (30 @ \$14)	\$420
Plant Pathology Lab Diagnostic Fees (30@\$20)	\$600
Postage	\$45
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Total	\$1265