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Lawn Maintenance with Organic-Based Fertilizers

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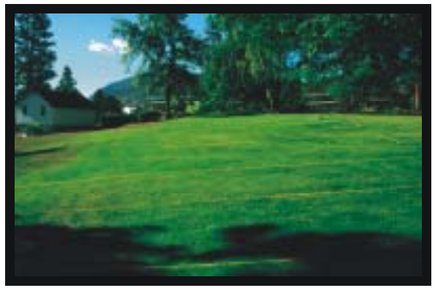


Trial set-up in 2001
Each plot is 50 m^2

Landscape managers wish to develop commercial lawn care programs that incorporate the use of environmentally-friendly products. This approach is supported by the Canadian government in the October 2000 "Action Plan for Urban Use Pesticides", which included a strategy for "environmentally-sound decisions on lawn care" .

This presentation is a summary of our work with lawn fertilizers, including "RainGrow 4-2-3", a liquid product made from certified organic composted chicken manure and manufactured in Oliver, B.C.

Field trials were established in 2000 and 2001 within public park areas of Penticton and Summerland, B.C. The set-up was a controlled, replicated block design.

Treatments included an unfertilized control, the synthetic lawn fertilizer "PlantProd 35-5-10", the organic fertilizer "RainGrow 4-2-3", and a solid formulation of composted chicken manure "Compost 2-5-2". All fertilizers were applied to provide 1 kg of actual nitrogen per 100 m^2 over the season.

October 2001:
Raingrow on Left
Untreated on right

Results

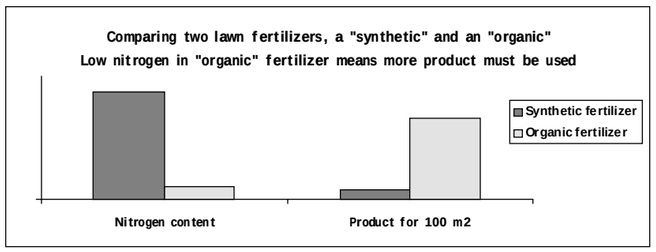
✓ The lawn was visually rated for turf density, weed cover, and grass colour on a scale of 1 (poor) to 9 (best). Grass clippings were collected monthly and analyzed for nutrient content.

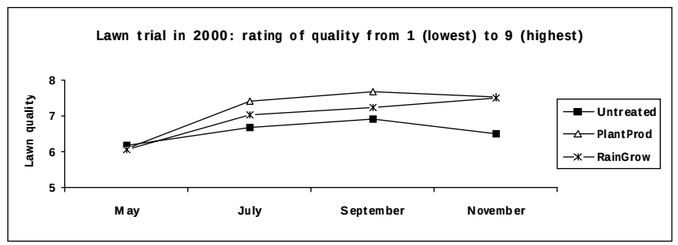
✓ At the start of each season, turf quality was uniform for all treatments. After one month, turf quality improved in fertilized areas. Summer irrigation and mowing also helped the lawn quality.

✓ In 2000, the organic fertilizer "RainGrow" resulted in lawn quality that was better than unfertilized areas and as good as a synthetic fertilizer. Results were statistically significant.

✓ In 2001, compost combined withRainGrow resulted in a steady improvement of turf quality over the season. The addition of a solid compost especially helped areas under water stress.

✓ The trials highlighted two limitations of organic fertilizers:
1) The impact of an organic-based fertilizer is slower than a synthetic fertilizer and more typical of a slow-release fertilizer.
2) Organic fertilizers have low nutrient analysis and must be applied in large amounts to obtain the target nitrogen rate.





Conclusion

From this data, the best program for commercial companies wishing to offer "organic lawn fertilization" should be the following:

1- In April or May, one application of solid compost at 0.75 to 1 kg of actual nitrogen per 100 m^2 (or 1.5 to 2 pounds of N per 1,000 ft^2);

2- In June, late August and October, three or four applications of a liquid fertilizer such as "RainGrow 4-2-3" at 0.25 kg of actual nitrogen per 100 m^2 (or 0.5 lb of N per 1,000 ft^2).

Core aeration is a good practice to manage weeds.

A "Natural" Lawn Care Program

Mow high and mow often.
Set mowing heights up to 5 to 7.5 centimeters (2 to 3 inches high). Mow often to remove less of the grass blade at each cut.
Leave the clippings on the lawn to decompose into free fertilizer.

Water thoroughly but infrequently.
To encourage stronger roots, apply 2.5 centimeters of water per week during July and August. Water as needed in spring and fall.
Look for malfunctioning sprinkler heads or poor sprinkler coverage.

Fertilize moderately in May and October.
Use a "natural organic" product or a "slow release fertilizer".
Or, fertilize 4 times in May, June, late August and late October.
Apply 1 to 2 kg of actual nitrogen per 100 m^2 of lawn (or 2-4 lbs per 1,000 ft^2).
Nitrogen is the first number on the fertilizer bag.

Over-seed with a grass mixture.
Avoid areas of open soil where weed seeds can germinate.
Mixtures of grass seeds are readily available and inexpensive.
Spread over the existing lawn, or mix with 1/4 inch of compost.

Aerate compacted soils in spring or fall.
Many weeds, such as dandelion, grow very well in compacted soils.
Regular aeration is the final touch of a professional program.
Aerate by removing soil cores and leaving them on the soil surface.

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