Sustane is typical for composted products. Composting results in mineralization of some of the organic N originally present.

TABLE 4. Season average color responses of turgrasses to bioorganic and synthetic organic fertilizers.

Location	Type of fertilizer	Number tested	Color rating KB	B
Iowa	Bioorganic	4	7.6	6.2
	Synthetic	3	8.4	5.8
Michigan	Bioorganic	4	8.4	5.8
	Synthetic	2	8.3	6.7
Wisconsin	Bioorganic	5	7.3	7.3
	Synthetic	3	7.6	7.1

KB = Kentucky bluegrass B = Bentgrass

How turfgrass has been found to respond color-wise to bioorganic fertilizers in general is indicated in Table 4. These data show that on a full season basis, bioorganics are capable of producing color responses comparable to those achieved with synthetic organic fertilizers. In general, there are no consistent advantages to using either of these types of fertilizer as far as turfgrass color is concerned. Thus, choice of which type to use should be based on other considerations such as personal preference and cost. Bioorganic fertilizers are not low cost fertilizers. A recent check in local lawn and garden centers revealed that home owners are paying as much as $5.00 per pound of nutrient when they use bioorganic fertilizers. Even lawn care services find it difficult to offer a bioorganic fertilization program for the same cost as for programs based on synthetic fertilizers. On a large scale, one has to factor in additional labor costs arising from the use of the relatively low analysis bioorganic fertilizers.

The argument has been presented that the relatively high purchase price of bioorganic fertilizers is at least partially offset by unique secondary benefits. One of the most intriguing side benefits is that of turfgrass disease suppression. My compilation of what various researchers have found regarding disease suppression appears in Table 5.

What these data tell me is that disease suppression can arise from application bioorganic fertilizers. However, percent times when there has been significant disease suppression are not high enough to look upon bioorganic fertilizers as substitutes for fungicides. They do have some potential for reducing fungicide need in disease control programs, but do not have the degree of reliability necessary to replace fungicides in a disease prevention program. This could change as further research succeeds in identifying the conditions under which disease suppression can be more consistently achieved with bioorganic fertilizers.

Another potential side benefit that may occur when bioorganic fertilizers are used is thatch reduction. My experience and that of colleagues at Michigan State University is that earthworms seem to be the key factor here. When bioorganic fertilizers have been applied to soils naturally populated with earthworms, earthworm activity often increases and there is an associated reduction in thatch. This is particularly true when daily irrigation is practiced.

In summary, bioorganic fertilizers make a lot of sense from the standpoint of recycling of plant and animal wastes. Excellent quality turf can be obtained through their use. But at the same time, bioorganic fertilizers are not miracle or cure-all products nor are they environmentally safer than synthetic fertilizers.

TABLE 5. Results of studies on turfgrass disease suppression by bioorganic fertilizers.

Disease	No. of Studies	No. of Trtmts.	Trtmts. w/ Suppression	Percent Effective
Gray snow mold	1	10	2	20
Dollar spot	4	31	4	13
Brown patch	4	32	11	34
Summer patch	5	146	46	32
Necrotic ringspot	5	71	42	59
Red thread	1	12	1	8

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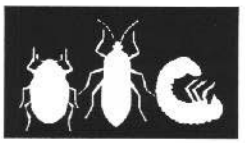

Survey of White Grubs Needs Your Help

By Charles F. Koval, Extension Entomologist; Daniel K. Young, Associate Professor; Kerry Katovich, Project Assistant—Department of Entomology, UW-Madison

EDITOR'S NOTE: Kerry Katovich is a graduate student at the University of Wisconsin-Madison in the Department of Entomology. A native of Wautoma, Kerry earned a B.S. degree from the UW-Madison. His areas of interest are insect biogeography and larval taxonomy, especially as they relate to beetles. He plans to develop a white grub key to the species found in Wisconsin, along with details on habitat preferences such as soil type or host plants. Let's help him out, if the opportunity presents itself.

White grubs, which are the larval stages of several species of May beetles and June beetles, are becoming increasingly important as pests of many types of agricultural, horticultural, and forest crops and landscape plants. They cause damage by feeding on the roots of plants. As with many types of soil insects, they can be difficult to control, especially on perennial crops.

We have recently undertaken a study of the white grubs of Wisconsin. Our objective is to determine if there are predictable relationships between white grub species and various environmental factors. For example, we wish to determine if the different white grub species are associated with specific plant (crop), types or particular soil conditions.

To make this a representative and meaningful survey, we need your help. If you discover a white grub infestation, we would appreciate having you contact us, noting the following information:

Your name, address and phone number. State and county where larvae were observed. Specific address where larvae were observed. (Township, range, and section, if known). Approximate depth in soil larvae were found. Brief description of vegetation—include crop and dominant weeds, if present.

In addition to the information, it would be very helpful (but not required), if you could send us some live larvae. Line the interior of a small, sturdy box with a few thicknesses of newspaper. Place the white grubs in the box and cover with the soil they came from. (IMPORTANT: Use only the soil from the grub habitat, as we will be analyzing this to determine soil type.) We would like to receive as many as a dozen of each size (usually, you will find 1-3 distinct size groupings). You may also find pupae and adult beetles in the soil; these can be included also. PLEASE DO NOT include adult beetles that have already emerged from the soil.

Send samples to: Mr. Kerry Katovich, Department of Entomology, 444 Russell Labs, 1630 Linden Dr., University of Wisconsin, Madison, WI 53706 or call:
Mr. Kerry Katovich, Office: (608) 262-2078, Fax: (608) 262-3322, E-mail:
DYOUNG@ CALSHP.CALS.WISC.EDU

To ensure that the larvae do not die in transit, we recommend sending them by overnight mail or UPS.

We have very limited funds for this project, and therefore we will be unable to travel to many field sites. Therefore, all samples we receive by mail will greatly increase the value of this survey. Any assistance will be greatly appreciated.