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***This article was provided to us based on our interest in worm castings and golf courses. The URL is not known to us. However, the information provided is excellent for general knowledge of others experience with worm casting in general. Although the article references a specific brand name of worm castings, that is more of a marketing issue than a scientific issue. Hopefully, this article will assist you in considering and evaluating the use of worm castings as a viable assistant to your current programs. The article is supported by many positive experiences by others looking for sustainable programs with a friendly and beneficial impact on the environment.***

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**19 November 2003**

**Written By Rusty Fuller, Superintendent**

**Dalhousie Golf Club**

**Cape Girardeau, MO**

Worm castings have been used as a fertilizer for many years. In 1986 the public began

Looking for an alternative to chemical and synthetic fertilizers. It was not long before

most organic growers had used the worm castings and began talking about them to

garden clubs. Gardeners and friends. In 1991 Larry Martin, of Vermitechnology

Unlimited of Florida started documenting research on worm castings and its effects on

plant growth. **By the turn of the century, he had perfected and patented the**

**formulation and production for pure worm castings. The consistently high**

**range of Biodiversity is a mark of excellence in the quality of this**

**product.** Since then commercial growers in all types of horticulture and agriculture

has starting using worm castings. Sales of the pure Agrowinn Organic Worm-

Castings™ have doubled and now tripled each year. In 2001 at the GCSAA

convention in Orlando, Florida I met Larry on my Environmental Seminar at Disney

Wild Life Refuge. He showed me the results of plant growth using the Agrowinn

Organic Worm-Castings™ with before and after photos.

Upon my return to the Dalhousie Golf Club, an upscale Nicklaus Designed Course in

Cape Girardeau in MO, we began an aggressive program with the purchase of 10 tons

of the pure Agrowinn Organic Worm-Castings™. We are finishing our 2nd year of a 3

year program and seeing amazing results. We have so far used 70 tons of Agrowinn

Organic Worm-Castings™ all over.

**Golf Digest ranks the Dalhousie Course in the top ten best new private**

**clubs for 2003.**

Superintendent Rusty Fuller, MS in Horticulture at University of Missouri has 14 years

of transition zone experience. He had spent 6 years at Bellerive C.C. and Boone

Valley Golf Club. Both have hosted PGA events before construction of the Dalhousie

Golf Club.

**Rusty has used the casting in New Construction, Rough, Fairways, Tees,**

**Greens, Bunker Faces, in Divot Mix and on Ornamental Landscape**

**Plants.** In 2002 the first year of grow-in situation at Dalhousie Golf Club, we had

45 days of above 90's and 60 days without rain.

The treated areas were able to hang on through the stress. The second year we had a

great turf year. One of the biggest achievements with the Agrowinn Organic Worm-

Castings™ was deep root structure with multiple feeder roots. The turf was able to

handle stress in the heat of the summer. With the pure worm castings we were able to

achieve a low mowing height of .084". We were able to keep fast greens, which were

attributed to the large root mass. **The roots on greens were never above 10” .**

**Our Bentgrass Tees and Tall Fescue/Bluegrass Rough all had similar**

**results in rooting and showed great drought and disease resistance.**

These phenomenal results are attributed to the pure Agrowinn Organic Worm-

Castings™ used at the Dalhousie Golf Club.

**Dave McIntosh**, Agronomist and Consultant based in Tequesta, FL

has first hand information about the positive results of the pure Agrowinn Organic

Worm-Castings™ used on the Dalhousie course. He is a consultant for some top golf

courses in the US & Mexico.

**Roughs and Fairways:**

The pure Agrowinn Organic Worm-Castings™ were applied to the rough and fairway

with a TyCrop Spreader with spinners.

1st. year applied 1 ton Agrowinn Organic Worm-Castings™ per acre

2nd year applied 3/4 ton Agrowinn Organic Worm-Castings™ per acre

3rd year will apply 1/2 ton Agrowinn Organic Worm-Castings™ per acre annually.

High stress areas were sprayed with the Agrowinn Organic Worm-Castings™ liquid

extract on an as needed basis.

**Greens and Tees:**

The pure Agrowinn Organic Worm-Castings™ 20% by weight mixed with sand

topdressing and applied to the **Princeville Tees** and **G-2 Greens** during

aerification. It was applied to all greens and tees in the Spring and Fall. This

application is very important because it is immediately available to plants and provides

them a long term nutrient sources that completely breaks down. **We have checked**

**repeatedly and found NO layering**. The greens and tees were sprayed weekly

with the Pure Worm Castings Liquid Extract. This liquid extract is produced quite easily

on site by the Dalhousie Maintenance Staff.

**Bunkers Faces:**

The pure Agrowinn Organic Worm-Castings™ were applied to **Bunker Faces at the**

**rate of 1 ton per acre**. Bunker Faces **aerified and worm castings worked**

**into holes**. The liquid extract was then sprayed on the faces. **The man-hours**

**saved on watering and replacing sod was in the thousands of dollars**.

**Divot Mix:**

A **20% pure Agrowinn Organic Worm-Castings™ by weight mixed with the**

**sand/seed** mix was put into each divot. With the addition of pure worm castings there

is dramatic increase in seed germination in a shorter time frame. This has helped us to

take care of

**5 acres of Princeville Tees**.

**Ornamental Plants:**

Dramatic results with pure Agrowinn Organic Worm-Castings™ verses synthetic

fertilizer results in larger, stronger plants with more brilliant color that after the first hard

frost lived six weeks longer than the synthetic fertilized plants.

**New Construction:**

We used **10% Black Castings TM mixed into the sand on each 7.000 sq. ft.**

**practice green**. Pure Agrowinn Organic Worm-Castings™ were used on 1/2 acre of

sand capped Tee's mixed at the same rate as the Greens (20% by weight). A light

application on the surface before laying sod will accelerate root growth and rapid

closing of the seams.

In July liberal amounts of the castings were added to weak areas of the course that

has Zoysia grass. We saw green up and growth in a couple of days. The cool season

turf showed amazing resiliency in July and August. **We have a limited supply of**

**water and the plants with their vast root structure were still able to go**

**with 1/2 the water of the normal 500,000-gallon/day irrigation rate**.

During this same period I noticed the plants deep color and a decrease in disease

problems due to healthier plants. This deep color is contributed to the soluble iron in

the Agrowinn Organic Worm-Castings™. This Summer I did not worry about my turf

grass because of the best root system that I have ever seen on turf grass plants. **This**

**also allowed me to mow lower**.

**The biggest asset of the Agrowinn Organic Worm-Castings™** is that is

environmentally friendly and can dramatically cut down the use of oil based and

synthetic fertilizers and pesticides. The worm castings do not end up in the ground

water, ponds, lakes and streams.

**The EPA monitored wetlands at the Dalhousie Golf Club is using**

**Agrowinn Organic Worm-Castings™ to grow all the plants and trees**.

PS: It has been approved by the Iowa State DNR to be used by the homeowners

surrounding the Clear Lake State Park in Clear Lake, IA.

**In two years of work with pure Agrowinn Organic Worm-Castings™, we**

**have seen amazing results. We are excited and look forward to next ye at**

**to see how much easier it will be to maintain this course as one of the**

**very best in**

**the US and do it at a cost savings.**

**Here are some of the results that we have seen thus far:**

\* A reduction in water use

\* A reduction in pesticide use

\* A reduction in man hours/labor

\* Better Turf quality

\* Better putting surfaces - lower mowing heights

\* No Thatch problem with G2 Bentgrass noted at this time

\* Helped reduce Phosphate \* in our water

\* Reduced Nitrogen use significantly

**Overall we saw big decrease on the money spent on fertilizer, Pesticides**

**in particular Fungicides, man-ours & water.**

**Proven Results !**

Dalhousie Golf Club, MO was voted in the top ten for private clubs In the United States

in 2003’s Golf Digest. Rusty Fuller is superintendent of the club and has beer using

Pure Black Castings since 2001 and has this to say about the product:

**Ease of Use:**

Agrowinn Organic Worm-Castings™ is remarkably easy to use. It may be applied at

any time and does not require use of protective gear. After application our product

requires no waiting period before golf play can begin. It is readily visible after

application and breaks down completely and easily.

**Environmentally Friendly:**

The biggest asset of Agrowinn Organic Worm-Castings™ is that it is environmentally

friendly and can dramatically cut down on the use of oil based and synthetic fertilizers

and pesticides. The worm castings do not end up in the ground water, ponds, lakes

and streams.

It has even been approved by the Iowa State Department of Natural Resources to be

used by the home owners surrounding Lake State Park in Iowa.

In addition, the EPA monitored wetlands at Dalhousie Golf Club in Cape Girardeau will

grow all the plants and trees there with Agrowinn Organic Worm-Castings™.