



MCG BioComposites Creates
Environmentally Friendly Plant
Markers Using Green Dot's Terratek®



MCG BioComposites LLC began operations in 2007. Early on the company worked hard to market their biocomposite resin to various organization' OEMs. There was significant resistance because all they could show them were the resin pellets. After brainstorming, the solution was simple. Create a product made from the biocomposite resin to show an example of how the material could be used in tangible application, in addition to providing a data sheet detailing the physical characteristics, qualities and mold flow analysis of the resin.



The owners of MCG contacted a friend at a local community college that had a mold building program, including plastic injection molding. The tool he was currently using at the community college was a mold for a plant marker that had been designed by a student. Using the plant marker mold and the biocomposite resin, MCG created a plant marker without having to change the tooling and only making minimal changes to the processing parameters. Some of the processing changes included a lower melting temperature so as to not burn the biobased materials blended into the plastics.

They had accomplished three important things:

- They didn't have to change the tooling at all to accommodate a biocomposite compared to traditional plastics.
- They detailed the minimal changes to the processing parameters to accommodate the biobased materials.
- They were able to make a reduced-carbon-footprint product in addition to reducing the energy required to create the product.

After showing their new BioMarkers to people in the plastic injection molding community, distributors became interested in selling the plant marker.

Green Dot's involvement

Several years after the plant marker's initial conception, Green Dot Bioplastics entered the picture. The marker's original biocomposite used a wood filler, but MCG and Green Dot worked together to create a number of new customized proprietary blends utilizing Green Dot's Terratek® formulas. For their BioMarkers, MCG switched from the old wood filler biocomposite and started using the custom blend from Green Dot, a mixture of corn cob fibers and recycled polypropylene.

With the success of the plant markers, MCG started to explore how to improve the BioMarkers and offer a variety of options. Changes in design now mean there are multiple height and faceplate size options in addition to various aesthetic choices. Most importantly, MCG just released a biodegradable version. MCG also received its US Patent on December 9, 2014 and Registered Trademark of MCG BioMarkers in 2016.



The biodegradable BioMarker

The biodegradable plant marker uses a customized blend of Green Dot's Terratek BD. This blend still uses the corn cob fibers, but replaced the polypropylene with a biodegradable plastic derived from renewable resources.

Both, the original plant marker and the biodegradable plant marker are manufactured by plastic injection molding specialists at Vantec, Inc. The molders were delighted by the ease in which both biocomposites could be processed. The biodegradable composite retains the same processing procedures for plastic injection molding as the composite used for the original plant marker, which is remarkably similar to any other plastic processing for injection molding.

Speaking to the similarities between processing the biocomposites compared to traditional plastics, James Wood, Senior Process Engineer for Vantec, Inc. said, **“As far as processing goes, they’re really not that much different. The biggest difference is you do not want to let them degrade to heat in the barrel of an injection molding machine. We didn’t see a lot of difference as far as using extra pressure or speed or anything like that. It was really pretty easy to process.”**

Ideas for creating a biodegradable plant marker came about after a discussion with a university professor at a community college in Iowa. The professor said the original BioMarker was too durable, it lasted too long. After a traditional plant marker's use is done, it gets thrown out and added to the landfill as trash. Instead, why not create a plant marker that doesn't contribute to the landfill, just biodegrading over time?

After presenting the idea and holding discussions with multiple university horticultural departments and master gardeners, the demand for such a product was established. The new biodegradable marker performs just as well as the original, if not a little better.

“The marker performs just as good as the original. In fact, it’s actually even stiffer than using the reclaimed polypropylene,” said Sam McCord, CEO and founder of MCG Biocomposites. **“Between the design we have and materials we were using, it’s very robust. If you are breaking it, you’re doing something wrong.”**



Biodegradable BioMarker

When finished with the BioMarker, you can simply add it to any compost and over time, it will return to the soil.

MCG BioComposites kept their minds open at all times for opportunities. From a challenging beginning, there was nothing in the foreseeable future to suggest the production of a biocomposite plant marker. But through unique happenstances, the opportunity was presented and MCG wasn’t afraid to take on the challenge. With some help from Green Dot’s expertise in bioplastics, MCG is making superior, environmentally friendly plant markers.

If you’re interested in procuring the plant markers for yourself or your business, visit [MCG’s website](#) for a list of retailers or for direct ordering information.



Request a product development consultation

Let's have a conversation about your product, timeline and goals.

[click here to get started](#)

or visit

offers.greendotbioplastics.com/bioplastic-product-consultation



226 Broadway
PO Box #142
Cottonwood Falls, Kansas
66845 USA

Email: info@greendotbioplastics.com
Phone: 620-273-8919