September 2, 2016

Dr. Sidney Abel
Assistant Deputy Administrator
Biotechnology Regulatory Services
USDA – APHIS
4700 River Road, Unit 147
Riverdale, MD 20737-1238

Re: Docket Number: APHIS-2015-0096

Dear Dr. Abel,

On behalf of the Organic Trade Association (OTA), I thank you for this opportunity to provide written comment to the United States Department of Agriculture (USDA) Animal and Plant Health Inspection Services (APHIS) Biotechnology Regulatory Services (BRS) regarding *Scotts Co. and Monsanto Co.; Notice of Intent to Prepare and Environmental Impact Statement for Determination of Nonregulated Status of Glyphosate-Resistant Creeping Bentgrass*. It is our opinion that the deregulation of glyphosate-resistant creeping bentgrass (ASR368 or Roundup Ready® creeping bentgrass) would cause economic harm to organic producers as well as negative long-term consequences to organic agriculture.

OTA is the membership-based business association for organic agriculture and products in North America. It is the leading voice for the organic trade in the United States, representing over 85,000 organic businesses across 50 states. Its members include growers, shippers, processors, certifiers, farmers' associations, distributors, importers, exporters, consultants, retailers and others. OTA's Board of Directors is democratically elected by its members. OTA's mission is to promote and protect organic with a unifying voice that serves and engages its diverse members from farm to marketplace.

Prevalence of Creeping Bentgrass

In 2005, USDA APHIS BRS created a white paper entitled "Perspective on *Creeping Bentgrass, Agrostis stolonifera L*." This comprehensive research document states: "In the USA, creeping bentgrass is definitely mostly if not entirely naturalized, and probably arrived well before the 1750s…, introduced with seed or hay as forage for cattle, sheep and horses… Once popular for pasture in the USA, the species has been suggested for reseeding on some western grasslands… It is now naturalized in all the states and recorded (i.e. mapped present) in the majority of counties, except in the warmer southern portions of the states in the Southeast" (MacBryde, 2005).

The aforementioned distribution pattern for creeping bentgrass (*Agrostis stolonifera*), is consistent with current mapping records maintained by the University of Georgia – Center for Invasive Species and Ecosystem Health – Early Detection & Distribution Mapping System (EDDMapS). These map records show that creeping bentgrass is in every State, including Alaska and Hawaii with greater frequencies/densities in moderate to cold-temperate regions of the United States (e.g. Pacific, West, Southwest, Midwest, and Northeast) (EDDMapS, 2016, MacBryde, 2005).

Organic Criteria

The USDA organic standards (7 CFR 205) prohibit the use of genetically -modified/engineered (GMO) inputs; including, GMO creeping bentgrass (ASR368 and Roundup Ready® creeping bentgrass). Chemical herbicides (e.g. *Imazapyr*) are also prohibited in organic agriculture production and are, therefore, not an option for managing

ASR368 or Roundup Ready® creeping bentgrass, as proposed in the petition for deregulation. Organic land and crops that come into contact with a prohibited substance can lose organic certification status. It takes at least three years to retransition land back into organic production (§205.202). Livestock that receive or consume a prohibited substance, such as GMO forages, can also lose their organic certification. Unlike land, a decertified organic animal cannot return to organic production (§205.236).

Organic ruminant livestock legally must receive at least 30 percent of their dry matter intake from grazed forages rooted in pastures. Livestock graze daily throughout the grazing season which is at least 120 days during the annual growing season. Organic perennial grasses are essential forages within pasture systems. It is highly likely that native and naturalized creeping bentgrass are already established within organic pastures in certain regions of the United States. GMO creeping bentgrass is known to hybridize with similar species that are native and naturalized. If deregulated, GMO creeping bentgrass would likely establish within organic pastures. Each of these pastures would need to be removed from the organic program until they are cleared by the organic certifier which, may take years. This loss of pasture may prevent the organic herd from receiving sufficient dry matter intake from grazing, which would also put organic certification of the livestock and the operation at risk. Economic harm and long-term consequences to organic agriculture would follow.

Deregulation of GMO Creeping Bentgrass

In 2003, glyphosate-resistant creeping bentgrass (GTCB or ASR368) escaped from field trials in Jefferson County, Oregon (USDA MOA, 2015; Sabatella and Twelker, 2012). Volunteer and/or escaped ASR368 were also found in Malheur County, Oregon and Canyon Country, Idaho (MOA, 2015). The release was stated to have been caused by a severe weather event. After more than 10 years of management efforts, this GMO perennial grass is still present in the aforementioned counties (USDA MOA, 2015).

On September 2, 2015, a Memorandum of Agreement (MOA) between USDA APHIS BRS and Scotts Company established a 10-year plan to manage, not eradicate, regulated ASR368. This plan established a three-year period for Scotts Company to work with growers and irrigation managers to prevent the spread of regulated ASR368 (USDA MOA, 2015). This MOA would become irrelevant if ASR368 is deregulated because regulated ASR368 will no longer exist. Scotts Company and Monsanto Company would no longer have legal obligation to prevent the spread of GMO creeping bentgrass.

Buffer Zones and Genetic Drift

Organic producers, that have property that adjoins non-organically managed land, must have buffer zones and distinct boundaries in place to capture prohibited substances that may be applied to adjoining property. These distinct and defined areas must be of sufficient size to prevent the organic land and crops from unintended application of, or contact with, prohibited substances (§205.2; §205.202). The organic standards do not establish a specific distance or size of a buffer zone in feet or yards; however, a common rule of thumb used by the organic industry is suggested at 20 feet to 100 feet between property lines.

Organic producers are required, to the best of their ability, to establish a sufficient isolation distance to prevent the contamination of their organic crops by GMO pollen, genetic drift and unintentional applications of prohibited substances (USDA NOP Handbook, 2012). Organic producers will often delay planting to help ensure their organic crops do not pollinate when neighboring GMO crops of the same species are pollinating. This doesn't guarantee that cross-pollination hasn't occurred; however, the producer is able to minimize concerns with the use of these cultivation practices.

Customary practices used by organic producers to control unintended applications of prohibited substances and cross pollination with GMO crops will not work with GMO creeping bentgrass. Creeping bentgrass establishes without cultivation and is vigorous. This GMO perennial grass sheds pollen and seeds, and spreads its stolons in sync with natural and naturalized non-GMO creeping bentgrass. It would not be possible to contain GMO creeping bentgrass, if deregulated, as cross-pollination and hybridization is inevitable.

Habitat and Dispersal

Creeping bentgrass (*Agrostis stolonifera*) is likely to grow in wetlands, marshes, damp arable land, pastures and meadows, grasslands, ditch banks and stream-sides, open woodlands, riparian areas and along roadsides (MacBryde, 2005). It is able to establish in dunes, salt marshes, chalk cliffs, and in bare and biodiverse habitats (MacBryde, 2005). Additionally, "*Agrostis stolonifera L.* is a robust, fast-growing perennial, which is biologically and ecologically very variable, phenotypically plastic (adjusting locally) and evolutionarily adaptive, with vegetative spread and reproduction by stolons (horizontal aboveground stems or runners) [that may break free and populate elsewhere], wind-pollinated flowers, and tiny (0.07 mg) seeds (i.e. caryopses) dispersed by wind, water and animals [by digestive transfer and external carry]" (MacBryde, 2005).

Pollination and Hybridization

A 2007 report, developed via collaboration between the USDA-ARS National Forage and Seed Production and Research Center, The USDA Forest Service Pacific Northwest Region and Oregon State University, evaluated the dispersal of viable pollen of GMO creeping bentgrass. This report states: "The issue of pollen-mediated gene flow has become increasingly important in recent years with proposed and actual introduction of genetically modified crop plants into agriculture… A major concern is movement of transgenes from the genetically modified (GMO) crop into cultivated or native plants of the same or closely - related species…The potential for such gene flow is especially great in grasses, because of their wind-dispersed pollen and the wide distribution and adaptation of many grass species" (Pfender et. al., 2007).

Creeping bentgrass (*Agrostis spp.*) has been extensively researched via studies and experimentation. One experiment demonstrated that fertilization and hybridization between *Agrostis spp.* was observed at approximately 984 feet from the source plants (MacBryde, 2005, Pfender et. al., 2007). "In another experiment, untransformed *Agrostis spp*. plants, naturally occurring or intentionally placed as sentinels, produced transgenic seed [GMO seed] after being exposed up to 14 to 21 km [~8.7 to 13 miles] from a 162-ha source of GMO creeping bentgrass (*A. stolonifera*) in Oregon…" with these greater distances likely being caused by thermal vortexes (dirt devils) (Pfender et. al., 2007). During this experiment, "pollen dispersal and gene flow were found to occur mostly within about 1.25 miles and extended up to 13 miles" (MacBryde, 2005).

The USDA-ARS National Forage and Seed Production and Research Center, The USDA Forest Service Pacific Northwest Region and Oregon State University conclude that it would be "exceedingly unlikely to achieve genetic isolation for a field planting of a creeping bentgrass crop unless inter-field distances of at least several kilometers are maintained. At closer distances, pollen competition at the receiving field could reduce gene transfer to a lower level…But if a zero-tolerance criterion is used, as may be the case for transgenes in some situations, even low-probability events demonstrated by this research to be possible at distances up to 15 km [~9.3 miles] must be considered" (Pfender et. al., 2007)

Conclusion

Natural and naturalized creeping bentgrass species have been established, without cultivation, for hundreds of years in the United States. Creeping bentgrass (*Agrostis stolonifera*) is located in the majority of counties within the temperate and cold-temperature regions of the United States (McBryde, 2005). Evidence shows that GMO

creeping bentgrass (ASR368 and Roundup Ready® creeping bentgrass) is able to hybridize with natural and naturalized *Agrostis spp*. This occurred with the escape of ASR368 from field trials in Jefferson County, Oregon and the subsequent identification of ASR368 in two other counties located over 200 miles away.

The deregulation of GMO creeping bentgrass would lead to further cross-pollination and hybridization between this glyphosate-resistant perennial grass and natural/naturalized creeping bentgrass species. It is anticipated that this action would lead to the presence of GMO creeping bentgrass within organic fields, pastures, waterways, ditches, woodlands, riparian areas and adjoining roadways.

Eradication of GMO creeping bentgrass with chemical herbicides (e.g. *Imazapyr*), is not an option for the organic producer. Tilling is also not an option as this would spread the creeping bentgrass (Lowry, et. al., 2011). The use of propane burners may assist with eradication in spot areas though insufficient for larger scale outbreaks. This, however, doesn't eliminate the potential loss of organic certifications and the negative economic impacts that this would have on the organic producer. We respectively request that USDA APHIS BRS deny the petition to deregulate glyphosate-resistant creeping bentgrass (ASR368 or Roundup Ready® creeping bentgrass).

Thank you for your careful considerations of these issues,

Sincerely

Laura Batcha
CEO and Executive Director
Organic Trade Association

Sources:

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