June 19, 2017

Docket ID: **APHIS-2015-0057**

USDA APHIS PPD
Regulatory Analysis and Development
Station 3A–03.8
4700 River Road Unit 118
Riverdale, MD 20737–1238

Subject: "**Importation, Interstate Movement, and Environmental Release of Certain Genetically Engineered Organisms**"

The Weed Science Society of America (WSSA) and its affiliates, the Aquatic Plant Management Society, the Northeastern Weed Science Society, the North Central Weed Science Society, the Southern Weed Science Society, and the Western Society of Weed Science represent over 3000 weed scientists from around the world. Members include academic, governmental, and private industry research scientists, university extension professionals, educators, graduate students, and federal, state, county, and private land managers. Our scientific societies welcome the opportunity to comment on APHIS's proposed rule regarding the importation, interstate movement, and environmental release of certain genetically engineered organisms. We appreciate the Agency's comprehensive work and transparent process in proposing these revisions.

KEY IMPROVEMENTS IN THE PROPOSED RULE

The National and Regional Weed Science Societies support many aspects of APHIS's proposed rule. We agree with the underlying tenets of the proposal and APHIS's efforts

to refine its scope of regulation to be better aligned with science-based plant pest and noxious weed risk.

The National and Regional Weed Science Societies agree with APHIS's recognition that some applications of gene editing result in plant varieties that are essentially equivalent to those developed through traditional breeding methods. Under the proposed rule, plant varieties that could have arisen from conventional breeding methods would not be considered "genetically engineered organisms" and thus would be excluded from APHIS's regulatory review.

Likewise, the National and Regional Weed Science Societies agree with APHIS's proposal that GE organisms should no longer be regulated articles solely because of the donor, vector, or vector agent used in the genetic engineering process. The use of plant pests in these ways either as donors, vectors, or vector agents has a long history of safe use and does not result in disease or injury to the recipient organism.

Based on its proposed revisions to 7 CFR Part 340, we agree with APHIS's determinations of "Not Regulated" or "Proposed Not Regulated" for the herbicide resistance traits in APHIS's "Regulatory Status Under Proposed 340" table.

Certain media reports have fostered a public misconception that GE crops have created "superweeds", a slang term we reject as false and misleading. The transfer of herbicide resistance traits from GE crops to weeds has been rare. There have been no reports of gene transfer in the more than 160 million acres of herbicide-resistant corn, cotton and soybean planted annually. Corn, cotton, and soybeans are not weeds, have no weedy relatives with which they readily inter-breed in North America and do not pose a risk to transfer novel traits to weeds. Even in crops like sugarbeet, sunflower, wheat and canola, which have sexually compatible weedy relatives in their production areas where gene flow has occurred, the resulting plants are not weedier than their parent plants. http://wssa.net/wp-content/uploads/WSSA-Fact-Sheet-on-Superweeds_16-Sep-2014.pdf

SHORTCOMINGS IN THE PROPOSED RULE

The National and Regional Weed Science Societies feel that there are shortcomings in APHIS's proposed rule that are substantial enough that the Agency should consider re-proposing the rule to adequately address them. Our main concern arises with the use of a Weed Risk Assessment (WRA) model as the only assessment method for identifying "weediness" in GE crops and whether that organism could pose a noxious weed risk.

While WRAs are important decision support tools commonly used throughout the world to "help prevent the entry of weeds and invasive plants into new areas" (Koop et al. 2012), they are primarily used as a pre-entry screen for plants considered to be invasive

weeds. Smith et al. (2015) used two common WRA models to evaluate the invasion risk of 16 candidate bioenergy crops and to compare their WRA scores to 14 agronomic crops and 10 invasive species with an agronomic origin. Smith et al. (2015) results indicated that these models were not able to accurately address broad, intraspecific variation and that species introduced for agronomic purposes pose special limitations to WRAs, such as *Sorghum bicolor*, which is both a crop and a weed. The results of Smith et al. (2015) support the idea that field testing is needed following WRA screening to evaluate the potential 'weediness' of certain introduced crops, especially robust bioenergy crops.

APHIS has developed a new WRA system for the purpose of assessing the noxious weed risk of GE organisms. For their WRA system, a non-GE (baseline) WRA of a plant taxon is prepared first, to serve as a basis for comparative assessment of weed risk between a GE plant and its non-GE counterpart. While the 16 example WRAs appear logical and are well documented, we were not able to determine how the proposed WRA scoring was performed for impact potential and the potential for establishment and spread relative to those of other commonly used WRAs. We commend APHIS for separating the risk assessors and the risk managers to help eliminate potential bias. However, it should be noted that expert users may disagree on important scoring traits (Lewis and Porter 2014) that potentially yield different results (Cousens 2008; Pheloung et al. 1999). Additional model validation steps are needed to help reduce uncertainty.

We would also note that WRAs have not focused at the subspecies/cultivar level. For example, there are 100 named cultivars of *Miscanthus sinensis* Anderss., but all WRAs have been run at the species level (Crosti et al. 2010; Gordon et al. 2008; Nishida et al. 2009). We agree that when sufficient information exists, WRAs can be conducted at the subspecies level (e.g., Barney et al. 2015, Barney and DiTomaso 2008), but this becomes complicated in the case of agronomic and horticultural crops that may have hundreds of cultivars and domesticated traits.

The National and Regional Weed Science Societies affirm that WRAs are important biosecurity tools, particularly as the first tier of a multi-tiered risk assessment. However, the evaluation of crops presents challenges that WRAs were not designed to handle (Barney 2014; Barney et al. 2015; Smith et al. 2015). Thus, additional risk elements, available field data, and model refinements should be considered (Barney et al. 2016; Cousens 2008; Smith et al. 2015).

Under the proposed regulations, APHIS states that "*field test information would not be a generally applicable requirement for requests for a regulatory status determination, and would only be requested rarely, and on an as-needed basis*". We recommend that APHIS provide more clarity and examples for when field data would improve the WRA. Certain introduced plant traits are more likely to introduce 'weediness' into a species such as those that enable a species to go from an annual to perennial or those that increase nutrient use efficiency compared to its competitors. We welcome the opportunity to

partner with APHIS in identifying specific, risk-based criteria for assessing GE crops for potential 'weediness'

SYNCHRONOUS RELEASE by APHIS and HERBICIDE REGISTRATION by EPA

The National and Regional Weed Science Societies appreciates APHIS's awareness that the asynchronous timing of the deregulation of a herbicide-resistant crop cultivar and the associated herbicide registration has led to some scenarios where growers are tempted to illegally apply unregistered herbicide formulations.

The current regulations in 7 CFR part 340 state if a herbicide-resistant crop does not pose a risk as a plant pest or noxious weed, it should be released. There are situations where the release of a herbicide-resistant crop, even without its specific EPA registered herbicide can be beneficial to growers. One example is the release of 2,4-D-resistant cotton in major wheat growing areas such as Kansas, Oklahoma, and Texas. Cotton is extremely sensitive to 2,4-D where the herbicide is commonly applied for broadleaf weed control in wheat. In 2016, the majority of the Kansas cotton crop was damaged by 2,4-D.

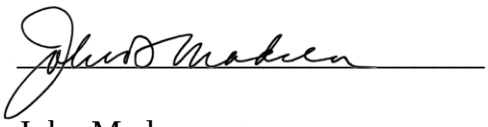
In light of the challenges associated with the asynchronous regulatory actions on the part of APHIS and EPA, the National and Regional Weed Science Societies will continue to support robust Extension outreach and education programs that promote herbicide stewardship for growers and applicators. We will also continue to work with APHIS and EPA to provide the best science-based information available to help ensure a safe and affordable food supply while protecting the environment.

CONCLUSION

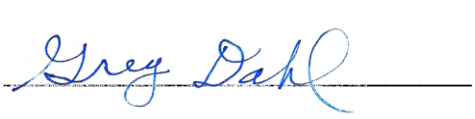
The National and Regional Weed Science Societies appreciate the opportunity to provide comments on APHIS' proposed rule regarding the importation, interstate movement, and environmental release of certain genetically engineered organisms. While we compliment the Agency on the many positive aspects of the proposal, we encourage APHIS to re-propose a rule that minimizes regulatory uncertainty related to WRA's. The National and Regional Weed Science Societies welcome the opportunity to partner with APHIS in identifying specific, risk-based criteria for assessing GE crops for potential 'weediness'. Finally, we recommend that APHIS not incorporate the noxious weed authority in 7 CFR Part 360 into 7 CFR Part 340 used to regulate GE crops. Instead, APHIS should continue to use its noxious weed regulations in 7 CFR Part 360 to regulate risks related to noxious weeds.

Sincerely,

Janis McFarland
President
Weed Science Society of America



John Madsen
President
Aquatic Plant Management Society



Greg Dahl
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North Central Weed Science Society

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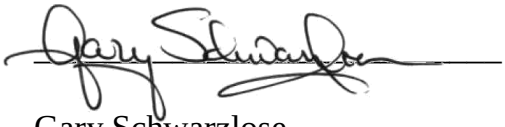

Gary Schwarzlose
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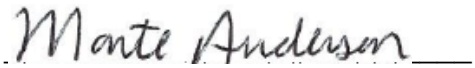

Monte Anderson
President
Western Society of Weed Science

cc: House Committee on Agriculture
Senate Committee on Agriculture, Nutrition & Forestry
Dr. Sheryl Kunickis, USDA Office of Pest Management Policy

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