SCIENCE POLICY REPORT
Lee Van Wychen
WSWS Summer Board Meeting
August 7, 2019

1. **PLEASE REVIEW the Weed Bingo Descriptions**: Please review the seven WSWS-designated weed descriptions below for accuracy. These are considered "final", but if something is grossly inaccurate, please let me know ASAP. One-thousand games are scheduled to be **printed on Aug. 9**.

   Dalmatian toadflax (*Linaria dalmatica*) was introduced from the Mediterranean as an ornamental. Some thought its pretty yellow flowers resembled toads, hence the name. Listed as a noxious weed in many western states, it thrives in dry, exposed soils. It can produce 500,000 seeds per plant and has a tap root that can grow as deep as 10 feet.

   While **downy brome** (*Bromus tectorum*) is a familiar sight along roadsides in the eastern US, this native from Eurasia is one of the most problematic weeds in the western US and Canada where it is called "cheatgrass". In the Intermountain West, cheatgrass greatly increases the spread of wildfires by serving as a fuel source in sage brush habitats.

   Italian ryegrass (*Lolium perenne L. ssp. multiflorum*), also called annual ryegrass, is quite similar to perennial ryegrass except it is an annual or biennial, depending on climate and/or length of growing season. Ryegrasses cross-pollinate freely so many varieties have developed. Some varieties are grown for forage or as a cover crop while others escape cultivation and become problematic weeds along roadsides and in fields.

   This "tumbleweed" has been known to stop a train! **Kochia** (*Bassia scoparia*) is a major problem in the Great Plains and is well adapted to drought and salty soils. Individual plants produce varying numbers of seed (up to 30,000) that are short lived (<2 years) and spread by tumbling. Kochia is both self-pollinated and cross-pollinated, which leads to high genetic diversity.

   This deep-rooted perennial, invasive weed has dominated prairies and pastures in the US Great Plains. **Leafy spurge** (*Euphorbia esula*) contains a toxic white milky sap that is poisonous to some animals and can cause blistering and skin irritation. A multistate campaign to "purge spurge" was initiated in the 1990s using area-wide integrated pest management techniques.

   Saltcedar (*Tamarix ramosissima*), also known as tamarisk, is a deciduous tree that has taken over riparian ecosystems in many parts of the southwestern US. As its name "saltcedar" implies, it can tolerate salty soils. This plant bully extracts salts from groundwater and excretes them through leaves onto the soil, making the site less healthy for native plants and wildlife habitat.

   Yellow nutsedge (*Cyperus esculentus*) is a perennial monocot with a triangular stem. Its taxonomic name "*esculentus"* means edible, referring to the tubers it produces underground, which ancient Egyptians called "the snack food of the Gods." It is also considered one of the "world's worst weeds" because it has adapted to many crops and tillage systems.

2. **EPA Seeks Comments on Glyphosate Proposed Interim Registration Review Decision (PID)**: In the ongoing registration review of glyphosate, EPA issued a PID in May so that it can move forward with aspects of the registration review case that are complete and implement interim risk mitigation. In 2017, EPA published comprehensive ecological and human health risk assessments for glyphosate. No human health risks were identified. The agency determined that glyphosate is not carcinogenic to humans. Potential ecological risks were identified for terrestrial and aquatic plants, birds, and mammals, primarily from exposure to spray drift.

   Spray Drift Management
   In order to reduce off-site exposure to non-target wildlife, EPA is proposing the following spray drift mitigation language to be included on all glyphosate product labels for products applied by liquid spray application:
   - Applicators must not spray during temperature inversions.

- For aerial applications, do not apply when wind speeds exceed 15 mph at the application site. If the wind speed is greater than 10 mph, the boom length must be 65% or less of the wingspan for fixed wing aircraft and 75% or less of the rotor blade diameter for helicopters. Otherwise, the boom length must be 75% or less of the wingspan for fixed-wing aircraft and 90% or less of the rotor diameter for helicopters.
- For aerial applications, the release height must be no higher than 10 feet from the top of the crop canopy or ground, unless a greater application height is required for pilot safety.
- For ground boom applications, apply with the release height no more than 4 feet above the ground or crop canopy.
- For ground and aerial applications, select nozzle and pressure that deliver "fine" or coarser droplets as indicated in nozzle manufacturers catalogues and in accordance with American Society of Agricultural & Biological Engineers Standard 572.1.

Clarification on Rotational Crop Timing

Many glyphosate labels lack instructions for crop rotation. The EPA is proposing to clarify that treated fields may be rotated to a labeled crop at any time. For fields being rotated to a nonlabeled crop, any glyphosate application must be made a minimum of 30 days prior to planting.

Non-target Organism Advisory Statement

While EPA did not identify risks to individual bees from glyphosate applications at rates below 5.7 lb ae/A, risks to terrestrial invertebrates at higher application rates are uncertain. Thus, EPA is proposing a non-target organism advisory statement to alert users of potential impact to non-target organisms: ‘`*This product is toxic to plants and may adversely impact the forage and habitat of non-target organisms, including pollinators, in areas adjacent to the treated site. Protect the forage and habitat of non-target organisms by following label directions intended to minimize spray drift.*”

Proposed Statements for Glyphosate Aquatic Use

In the PID for glyphosate, EPA is proposing to update the environmental hazards statements for aquatic use products to be consistent with modern standards and to be in line with newer pesticide labels. In addition, EPA is proposing an additional statement under "directions for use" for aquatic use labels to instruct users to apply in strips to help avoid oxygen depletion when emerged weed infestations cover the total surface area of an irnpounded water body (see table below). These statements already appear on some newer labels and the agency is proposing to apply these statements to all glyphosate labels.

Proposed Statements for Glyphosate for Aquatic Use

Product Type	**Proposed Statement**
Environmental hazards: for labels with terrestrial uses only	"Do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark. Do not contaminate water when cleaning equipment or disposing of equipment wash waters and rinsate."
Environmental hazards: for labels with aquatic uses only	“Killing aquatic weeds can result in depletion or loss of oxygen in the water due to decomposition of dead plant material. This oxygen loss can cause fish suffocation. Consult with your State agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is required. Do not contaminate water when cleaning equipment or disposing of equipment wash waters and rinsate."
Environmental hazards: for labels with both aquatic and terrestrial uses	"Killing aquatic weeds can result in depletion or loss of oxygen in the water due to decomposition of dead plant material. This oxygen loss can cause fish suffocation. Consult with your State agency with primary responsibility for regulating pesticides before applying to public waters to determine if a permit is required. For terrestrial uses, do not apply directly to water, to areas where surface water is present or to intertidal areas below the mean high-water mark (*Optional text, if applicable*: except when applying this product by air over the forest canopy). Do not contaminate water when cleaning equipment or disposing of equipment wash waters and rinsate."
Directions for use for aquatic uses	"When emerged weed infestations cover the total surface area of an impounded waterbody, apply this product to the emerged vegetation in strips to help avoid oxygen depletion in the water due to decaying vegetation. Oxygen depletion in the water can result in increased fish mortality."

EPA is also proposing weed resistance management labeling consistent with their guidelines they finalized in August 2017 as well as certain labeling clean-up/consistency efforts to bring all glyphosate labels up to modern standards. The PID and associated documents are posted at https://www.regulations.gov/document?D=EPA-HQ-OPP-2009-0361-2340. Comments are due **Sept. 3, 2019**. I'll be circulating draft comments for the National and Regional Weed Science Societies to sign off on in the next couple of weeks.

WSSA Comments on APHIS Proposed Rule Deregulating Some GM Crop Traits: USDA APHIS requested comments on their proposed rule titled "Movement of Certain Genetically Engineered Organisms" that would revise their regulations regarding the importation, interstate movement, and environmental release of certain genetically engineered organisms in response to advances in genetic engineering and their understanding of the plant pest risk posed by them, thereby reducing regulatory burden for developers of organisms that are unlikely to pose plant pest risks. The proposed rule is posted at https://www.regulations.gov/docket?D=APHIS-2018-0034. Comments were due **Aug. 6, 2019**. WSSA submitted the following comments:

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

Re: "**Docket ID: APHIS-2018-0034, Movement of Certain Genetically Engineered Organisms**"

The Weed Science Society of America (WSSA) appreciates the opportunity to provide comments to USDA on its June 6, 2019 Proposed Rule regarding the movement of certain genetically engineered (GE) organisms. WSSA was founded in 1956 as a non-profit professional society that fosters an awareness of weeds and their impact on our environment. Our members include national and international weed scientists in academia, government, and industry who provide science-based information to the public and government policymakers while promoting research, education, and outreach activities.

WSSA commends APHIS for its efforts to improve the regulatory system for agricultural biotechnology and for recognizing the long history of scientific evidence and safety associated with agricultural biotechnology and plant breeding. WSSA is supportive of science-based regulations for genetically engineered crops, and we congratulate APHIS on its proposed revision to CFR 7 Part 340, which rightly focuses on the plant pest risks posed by the GE organisms as opposed to the methods used to develop them. WSSA also appreciates the position APHIS has taken on products of newer breeding techniques like genome editing, and its recognition of the similarity of products derived from these techniques to products produced using conventional plant breeding.

The proposed rule contains a number of improvements over the Agency's January 2017 proposal to revise Part 340. Specifically, WSSA recommended that APHIS avoid incorporating noxious weed risk assessments into 7 C.F.R. Part 340, which are duplicative of assessments conducted under 7 C.F.R. Part 360. Accordingly, WSSA is pleased to see that APHIS, in its most recent proposal, amended its approach with respect to its noxious weed authority to prevent unnecessary regulatory duplication. WSSA is also pleased to see that APHIS's most recent proposal clarifies the regulatory status of a product before it undergoes the newly proposed regulatory status review process and the move away from event-by-event regulation.

Confirmation Process under Proposed Section 340.1(d)
In addition to providing specific exemption criteria, APHIS has proposed Section 340.1(d), under which a developer could voluntarily seek confirmation from APHIS that a GE plant fits one of the categories identified in proposed Section 340.1(b) or is a product with a plant-trait-mechanism of action combination that APHIS has already evaluated and determined poses no plant pest risk, under proposed Section 340.1(c).

WSSA encourages APHIS to include in the final rule a process by which a developer is required to notify the Agency of a GE plant which the developer has determined meets one of the proposed exemptions before that GE plant enters the market. WSSA hopes that APHIS will implement guidance that achieves transparency without limiting innovation in potential new weed management options.

WSSA also recommends that USDA and other agencies enter into a Memorandum of Understanding recognizing the notification process at USDA. A mandatory notification process and website posting will have the additional benefit of providing public notice and transparency about new products intended for placement on the market.

Synchronous Decisions with the EPA on Herbicide Resistant GE Plants

WSSA 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. WSSA agrees with APHIS that the primary issue of concern with asynchronous approvals between the USDA and EPA has not been the illegal use of herbicides during the field testing of herbicide-resistant crops by developers, but instead it's the illegal use of a herbicide by growers on a herbicide-tolerant crop cultivar that has been deregulated by APHIS and is commercially available before the commercial availability of the herbicide designed for those crops.

WSSA strongly encourages APHIS to work with the EPA to explore solutions to better coordinate the commercial availability of seed for herbicide-resistant crops concomitant with the registration of herbicides intended to be used on those crops. In light of the challenges associated with the asynchronous regulatory actions on the part of APHIS and EPA, WSSA 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.

WSSA appreciates the opportunity to provide comments on APHIS' proposed rule and welcomes the opportunity to partner with APHIS in assessing GE plants for potential weediness that may pose a potential plant pest risk to the environment.

Sincerely,

3. **Kansas City Announced as New Home for USDA NIFA & ERS:** On June 13, USDA Secretary Sonny Perdue announced that USDA will relocate the Economic Research Service (ERS) and National Institute of Food and Agriculture (NIFA) to the Kansas City Region. USDA conducted a Cost Benefit Analysis and conservative estimates show a savings of nearly $300 million nominally over a 15-year lease term on employment costs and rent or about $20 million per year. In addition, state and local governments offered relocation incentives packages totaling more than $26 million.

   Out of NIFA's 315 positions, 294 will relocate while 21 will stay in DC. Of the 329 ERS positions, 253 will relocate while 76 will stay in DC. Every employee who wants to continue working will have an opportunity to do so. Employees will be offered relocation assistance and will receive the same base pay as before, and the locality pay for the new location. Initial reports indicate that up to two-thirds of the NIFA and ERS employees may decline their reassignments or retire. Employees could begin reporting to the Kansas City location the week of July 22 and will have until Sept. 30 to do so. The department expects relocation numbers may "fluctuate" until the Sept. 30 cutoff, according to a statement provided by USDA. "These anticipated ranges were taken into account in the department's long-term strategy, which includes both efforts to ensure separating employees have the resources they need as well as efforts to implement an aggressive hiring strategy to maintain the continuity of ERS and NIFA's work."

4. **IR-4 Will Move from Rutgers to NC State:** On July 10, the IR-4 Project Management Committee (PMC) considered a Memorandum of Agreement (MOA) drafted by North Carolina State University's College of Agriculture

and Life Sciences (NC State). This MOA presented an opportunity for IR-4 Headquarters to relocate its operations from the long-term host institution, New Jersey Agricultural Experiment Station/Rutgers University, to NC State. After significant discussion, the PMC unanimously agreed to advance the agreement to Rutgers legal counsel for concurrence. The PMC based its decision on the 10-year commitment by NC State to host IR-4 Headquarters as well as the vision of the leadership of the NC State's College of Agriculture and Life Sciences on the many ways that IR-4 fits into the strategic direction of the college. While New Jersey Agricultural Experimental Station continues to value the IR-4 Project, Rutgers could not make a long-term commitment to continue as the host institution. The relocation, once approved by Rutgers, will transition over the next two years, with scheduled completion by September 30, 2021. The long transition will allow IR-4 Headquarters to remain operational with minimal interruptions and lessen the impact of the move on current employees at IR-4 Headquarters. Rutgers administrators are committed to working closely with NC State to ensure a smooth transition.

5. **Congress and White House Agree on 2-Yr Budget Deal**: Congressional and White House leadership reached a budget deal that will lift budget caps that were set to take effect this fall and raise the debt ceiling until July 2021. It provides nearly equal increases for defense and domestic programs, raising federal spending by a total of $320 billion. And while the compromise only contains $77 billion in offsets, which is far less than the $150 billion initially sought by the Trump administration, House Majority Leader Pelosi has agreed to not include any "poison pill" riders in upcoming funding bills. Without a budget deal, defense spending would have been cut by $71 billion and nondefense spending – which includes most research funding programs – would have been cut by $55 billion in FY 2020 alone.

6. **Public Lands and Water Management Bill Becomes Law:** This spring, the "John D. Dingell, Jr. Conservation, Management, and Recreation Act of 2019" became law (P.L. 116-9). It's the first major public lands and water management bill passed since 2009 and contains over 100 pieces of legislation that are laid out in nine titles. In Title VII, "Wildlife Habitat and Conservation", the new law amends the Fish and Wildlife Coordination Act to protect federal "water, oceans, coasts, and wildlife from invasive species". The new law defines a number of terms, including "invasive species" and directs the head of each federal Agency (specifically Army Corp of Engineers, Agriculture and Interior) to plan and carry out activities on land directly managed by the Agency to protect water and wildlife by controlling and managing invasive species: (1) to inhibit or reduce the populations of invasive species; and (2) to effectuate restoration or reclamation efforts.

   While the new law does not authorize any additional appropriations, it directs the Agency heads to allocate their existing invasive species funding in the following manner:
   - **use not less than 75 percent for on-the-ground control and management of invasive species**, which may include: (1) the purchase of necessary products, equipment, or services to conduct that control and management; (2) the use of integrated pest management options, including options that use pesticides; (3) the use of biological control agents; (4) the use of revegetation or cultural restoration methods; (5) the use of monitoring and detection activities for invasive species, including equipment, detection dogs, and mechanical devices; (6) the use of appropriate methods to remove invasive species from a vehicle or vessel capable of conveyance; or (7) the use of other effective mechanical or manual control methods.
   - **use not more than 15 percent for investigations, development activities, and outreach and public awareness** efforts to address invasive species control and management needs.
   - **not more than 10 percent may be used for administrative costs** incurred to carry out those programs, including costs relating to oversight and management of the programs, recordkeeping, and implementation of a strategic plan

7. **Capitol Hill Seminar on Weed Gene Drives**: On June 10, Dr. Patrick Tranel presented a seminar on Capitol Hill titled "Gene Drives to Combat our Worst Weeds". The seminar was part of the National Coalition for Food & Agricultural Research (NCFAR) Lunch-n-Learn Seminar Series. Dr. Tranel has been at the forefront of using molecular and genomic tools to study weeds, and his research findings have informed how weeds evolve resistance to herbicides and strategies that can be used to mitigate that process. The advent of gene editing tools, such as CRISPR-Cas9, makes such genetic strategies more feasible. Gene drives can be used in weed management approaches to reduce seed dormancy or reverse herbicide resistance in weeds. For genetic control of weeds to become a reality, significant basic research is needed as well as efforts in training future scientists. (NOTE: Jim Brosnan will be coming to DC in October to give an NCFAR seminar on combating herbicide resistance in turf).

8. **2019 Weed Survey**: https://www.surveymonkey.com/r/2019weeds. Please take a moment to list your top 5 most common and troublesome weeds in the following broadleaf crops, fruits, and vegetables: 1) Alfalfa, 2) Canola, 3) Cotton, 4) Fruits & Nuts, 5) Peanuts, 6) Pulses- field pea, chickpea, lentil, etc., 7) Soybean, 8) Sugarbeet, 9) Vegetables- Cole crops, 10) Vegetables- Cucurbits, 11) Vegetables- Fruiting, 12) Vegetables- Other. **Deadline is Labor Day, 2019.**