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Vigorous Weeds and Lethargic Regulations: A Wicked Problem for Farmers

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June 24, 2016

***farmdoc daily* (6):120**

Recommended citation format: Schlessinger, L., and A. B. Endres. "Vigorous Weeds and Lethargic Regulations: A Wicked Problem for Farmers." *farmdoc daily* (6):120, Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign, June 24, 2016.

Permalink: http://farmdocdaily.illinois.edu/2016/06/vigorous-weeds-and-lethargic-regulations.html

There is a troubling discrepancy between the large number of harmful invasive plant species and the number of invasive plant species that are actually regulated.[1] At the federal level, the USDA's Animal and Plant Health Inspection service (APHIS) includes 112 plant species on the Federal Noxious Weed List.[2] Scientific estimates, however, put the actual number of introduced invasive species at around 5,000.[3] It is estimated that annual costs attributed to invasive plant species in the U.S. approach $25 billion.

At the state level, Illinois has two weed laws that attempt to regulate the spread of invasive weeds species within the state's ecosystems; the Illinois Noxious Weed Law,[4] overseen by the Illinois Department of Agriculture, and the Illinois Exotic Weed Act,[5] which is a conservation act enforced by the Illinois Department of Natural Resources. While both statutes attempt to control invasive weed species in the state, the Acts can be differentiated by how the legislature defined noxious and exotic. The Noxious Weed Act defines noxious weeds as "any plant which is determined by the Director…to be injurious to public health, crops, livestock, land or other property."[6] Under the Noxious Weed Act, any weed found on the list must be controlled and eradicated at the cost of the landowner, with a clear focus on protecting agricultural productivity.[7]

In addition to costs associated with harm to agricultural lands, invasive plant species displace and threaten native plants, changing the biodiversity and ecology of the state.[8] This is why the Illinois Exotic Weed Act

[1] Lauren D. Quinn et al, *Navigating the "Noxious" and "Invasive" Regulatory Landscapes: Suggestions for Improved Regulation*, 63 BioSci. 124 (2013).
[2] *Id*.; http://plants.usda.gov/java/noxious
[3] James L. Ellis, David N. Zaya, and Tim Rye. 2016. Invasive plants across Illinois: Status and trends from a statewide monitoring program. Keynote presented at Illinois Invasive Species Symposium, May 26, Champaign, Illinois.
[4] 505 ILCS 100 (2016).
[5] 525 ILCS 10 (2016).
[6] 505 ILCS 100/2(5) (2016).
[7] 505 ILCS 100/10 (2016).
[8] Lauren D. Quinn *supra* note 1; James L. Ellis *supra* note 3.

focuses on conservation, and defines exotic weeds as, "plants not native to North America, which, when planted either spread vegetatively or naturalize and degrade natural communities, reduce the value of fish and wildlife habitat, or threaten an Illinois endangered or threatened species."[9] Under the Illinois Exotic Weed list, it is illegal for anyone to buy, sell, or distribute plants on the list without a permit issued by the Illinois Department of Natural Resources.[10] The penalty for violating the act is a Class B misdemeanor.[11] There is no requirement to affirmatively remove or eradicate exotic weeds, however, if exotic weeds are sold in Illinois without a permit, the Illinois Department of Natural Resources may confiscate and destroy the plants.[12]

Past research has demonstrated that state noxious weed lists include only 19.6% of the species considered to be invasive.[13] A research team at the Illinois Natural History Survey has been investigating invasive species in an ongoing longitudinal study for the past 19 years.[14] In Illinois, there are 970 documented invasive plant species; however the researchers were only able to detect 229 species at test sites across the state.[15] It is important to emphasize that only 26 documented invasive species are regulated by the Exotic Weeds Act and 10 by the Noxious Weed Act.[16]

The encroaching spread of Palmer Amaranth (*Amaranthus palmeri*), which is absent from any Noxious or Exotic weed list in Illinois (and several other states),[17] serves as an example of problematic regulations that fail to address what they were designed to protect. Palmer is native to the southwest U.S. and northern Mexico, but has been steadily spreading into other areas, causing significant problems for cotton and soybean producers in the southeast, and can currently be found in Illinois, Indiana, Ohio, Michigan, and Pennsylvania.[18] Palmer amaranth has evolved a resistance to multiple herbicides, adapts and spreads quickly to new locations, and can grow 2 to 3 inches per day.[19] Once a plant is taller than four inches, which can occur less than 10 days after emergence, the yield losses attributed to Palmer amaranth are 78% for soybean fields and 91% for corn fields.[20]

Invasive weeds like Palmer amaranth or other weeds escaping regulation at the federal or state level have the potential to devastate agricultural production and native ecosystems. Farmers well know that regulation is not the only answer. But in the face of herbicide resistant weeds such as Palmer and the growing list of other species, it is important to explore alternative management practices and the potential for cooperative arrangements with community stakeholders to protect their land. For more information on alternative weed management practices, please see our previous article, *New Approaches to Weed Management: Public-Private Partnerships*.

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[9] 525 ILCS 10/2 (2016).
[10] 525 ILCS 10/4 (2016).
[11] 525 ILCS 10/5 (2016).
[12] *Id*.
[13] Lauren D. Quinn *supra* note 1 at 125.
[14] James L. Ellis *supra* note 3.
[15] *Id*.
[16] *Id*.; https://plants.usda.gov/java/noxious?rptType=State&statefips=17
[17] Palmer Amaranth is currently regulated as a noxious weed on Minnesota (http://www.mda.state.mn.us/plants/pestmanagement/weedcontrol/noxiouslist.aspx) and Ohio's (http://codes.ohio.gov/oac/901%3A5-37) Noxious Weed List, but is not regulated in Illinois (https://plants.usda.gov/java/noxious?rptType=State&statefips=17), Indiana (https://plants.usda.gov/java/noxious?rptType=State&statefips=18) or Wisconsin (http://dnr.wi.gov/topic/Invasives/speciesNR40list.asp?filterBy=Category&filterVal=Plants&addFilter=Classification).
[18] A. Bryan Endres & Lisa R. Schlessinger, Legal Solutions to Wicked Problems in Agriculture: Public-Private Cooperative Weed Management Structures as a Sustainable Approach to Herbicide Resistance. 3 TEXAS A&M LAW REVIEW (forthcoming 2016).
[19] *Id*.; Travis Legleiter & Bill Johnson, *Palmer Amaranth Biology, Identification, and Management*, PURDUE EXTENSION, https://www.extension.purdue.edu/extmedia/WS/WS-51-W.pdf (last visited June 22, 2016).
[20] Rhonda Brooks, *Palmer Amaranth Pigweed Creeps Farther into the Midwest*, AgWeb, http://www.agweb.com/article/palmer_amaranth_pigweed_creeps_farther_into_the_midwest_naa_rhonda_brooks/ (last visited June 22, 2016).