

Testimony statement provided March 9, 2023 to the
Agriculture Finance and Policy Committee MINNESOTA HOUSE OF REPRESENTATIVES
regarding 93rd LEGISLATIVE BILLS HF1317 and HF2472

Introduction: My name is Dr. Judy Wu-Smart and I'm an associate professor and bee specialist at the University of Nebraska-Lincoln. I want to first thank Rep. Rick Hansen and the committee for this opportunity to testify for HF1317 and HF2472 and I'm acting in my own personal capacity and not as a representative of the university. I testified the past two years regarding the bee losses we were experiencing due to systemic pesticide pollution caused by a facility practicing treated-seed disposal through ethanol processing that produced solid and liquid byproduct wastes highly contaminated with pesticide residues as shown in the images included.

Main areas of concern: Systemic pesticides, including neonicotinoid insecticides and many fungicide products, are widely available for agricultural and urban uses and while they have been shown to be less toxic to mammals they are also known to cause a suite of ecological harm. My colleagues on the AltEn Health Study Team (<https://www.unmc.edu/publichealth/research/alten/index.html>) have found detectable levels of neonicotinoids and fungicides in surface and ground water samples, in frog tadpoles, and in the eggs of red-wing black birds that live near the facility or near farms where the contaminated byproducts were land-applied as soil conditioners. Even worst is the detection of elevated pesticide levels in the air outside and inside of the homes near the ethanol plant even though facility has been closed for 2 years (since Feb 2021). We are now at a point where we are trying to determine what all this data means.

There are no safe benchmarks established for exposure to multiple compounds in the air, water, and food. These types of pesticides move readily through water systems, and into soil and plants where wildlife become exposed but residue levels are not monitored. They are not considered to cause cancer or known to bioaccumulate in tissue like other hazardous substances, therefore there are no clear endpoints to delineate what are "safe" levels of exposure. The levels of neonicotinoids found in residential homes (clothianidin detected in air as high as 59 mg/m³ and imidacloprid detected in dust swipes at 407 ng/g) are unfortunately within levels that laboratory studies on rabbits and rats show symptoms and physiological changes (above LOAEL levels). Some symptoms listed are minor (i.e. weight changes) and would not constitute immediate concern, however, other studies indicate potential impacts on reproductive functions (during pregnancy and on fertility of sperm) and on the health of developing children (autism and neurological impairments). Given the range in severity and types of symptoms associated with neonicotinoid/fungicide exposure, coming to some consensus on how we are defining "harm" and what levels would be considered harmful would be very helpful for communicating results and providing the public with the appropriate context. Nebraska state officials and EPA has *NOT* been able to bring us clarity on this even after 3 years. Think about that for a moment. Imagine what you would do if you were told the air you breathe inside your home has detectable levels of pesticides, but you were provide any information on what that may mean to your family's health nor what to do about it. I'm here today discussing this topic because while what is happening in Nebraska is certainly an extreme example with unprecedented contamination loads, it echoes real concerns people have about the many unknowns surrounding these compounds.

It also highlights the many challenges to widespread systemic pesticide pollution (from a research and regulatory perspective) especially after a disaster has occurred and with little data help us understand what went into the plant nor the long-term impacts of their improper treated seed disposal practices. This is an ongoing issue that EPA suggests will take many years to clean up.

Pesticide overloading from multiple sources and chemical types, as it is in the case in NE, can cause "too much complexity and uncertainty to rule out potential adverse harm to the environmental and humans" which is how EPA responded to our situation through email exchanges with our state agency officials (Sept

& Jan 2021). Unfortunately, this is not strictly a Nebraska problem. Recent studies show neonicotinoids are commonly detected in humans (urine samples), wildlife, and in many of the fruits and vegetables we consume which are also the same plants most in need of pollinator services by bees.

The lack of regulatory oversight and federal exemption on “treated articles” has caused confusion and concerns for state officials and local communities. HF1317 and HF2472 seeks to provide more clarity and resolve some of the uncertainties that continue to challenge our efforts. Bees are bioindicators of our environment and can help guide us to become better stewards of our land. Many may not care about losing a few bugs, but widespread loss of insects hinders ecological services (including pollination, pest control, and nutrient cycling) critical for sustaining natural resources. It also reduces vital food web support for other wildlife and critters.

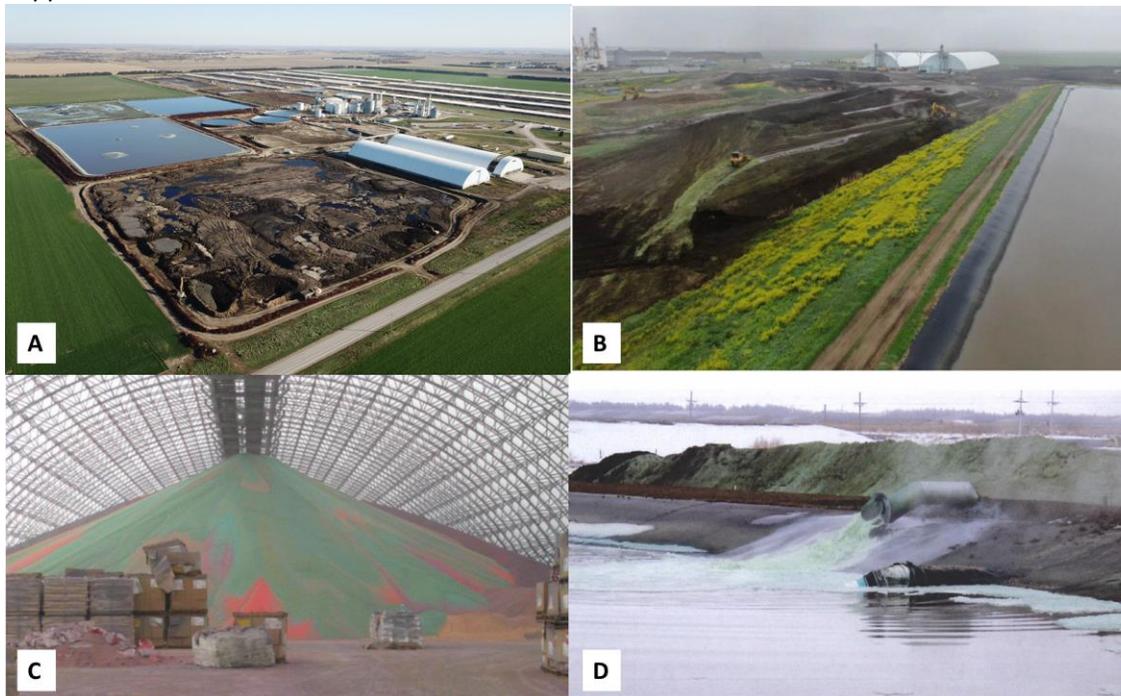


Photo A: Drone image (taken by Dr. J. Schalles, Creighton University) in Nov 2021 shows pesticide-laden wetcake piles located near several waste lagoons with visible pieces of the damaged protective liners floating up indicating leaching of pesticides into the ground below. **Photo B:** Drone image (from NDEE May 2021 report) shows large areas of blooming flowers that have likely taken up harmful levels of systemic pesticides and may be lethal to visiting pollinators. **Photo C:** Image inside white hoop structures (taken from NDA 2019 report) storing a large pile of discarded surplus and pesticide treated crop seeds which was received from seed companies. The colorant added to seeds indicates the presence of pesticides on seed coats. **Photo D:** Image of lagoon from NDEE Feb 2021 report which estimated 100,000 gallons of pesticide-laden effluent was produced per day. This pesticide-laden effluent along with wetcake waste was applied to farms as soil conditioners from 2018-2019 without farmer’s knowledge of pesticides because of the unclear language and classification surrounding treated articles.

Pesticide overloading and the lack of knowledge regarding the use, movement, spread, persistence, and toxicity of systemic pesticides are real concerns with One Health consequences and these bills (HF1317, HF2472) help to address these knowledge gaps and concerns. I thank the committee for the opportunity to testify and I welcome any questions.

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References:

AltEn Health Study Team website (hosted by the University of Nebraska-Medical Center) (<https://www.unmc.edu/publichealth/research/alten/index.html>) for details of research updates, townhall presentations, and other articles on AltEn.

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