

# The Challenge of Weed Resistance to Herbicides in US Agriculture

UNITWIN Network Seminar

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# Introduction

- Herbicide resistant weeds have become a significant environmental, economic and social problem
- Overuse of glyphosate associated with Roundup Ready seeds
- IWM approaches are becoming necessary
- A common pool resource problem that requires a community solution

# Research Questions

- What is preventing farmers from adopting a more community oriented approach to weed management?
- What is preventing farmers from moving towards a more integrated weed management approach?

# Phase I Methods

- 12 focus groups
- February-May 2015
- Iowa (4), Minnesota (2), North Carolina (2) and Arkansas (2)
- Recruited by extension agents
- Focus on corn/soybean growers

# Preliminary Findings to be Tested in Subsequent Survey of Producers

- Two key components of contemporary ideology in US agriculture
  - **Techno-Optimism** → May limit farmers' suite of potential weed management solutions
  - **Reliance/Individualism** → May limit the ability of farming communities to communicate and work together.

# Techno-Optimism Quotes

- IA4: "Yeah, it depends on your...you say 'resistant' but is it resistant to all chemicals we've got available to us? Surely there's something in there that we can...it may be hard on beans or it may be hard on the crop, but we can take that weed out and then it's a matter of, OK, economically, does this make sense?"
- MN1: "In other words, trying to keep a company keeping new ideas coming, keeping new products moving in the pipeline...because, that's what eventually going to have to happen is...this is never going to go away. You're always going to have an issue with whatever herbicide comes out. So keeping new options coming is more important than really the agricultural practices and all that"

# Techno-Concern Quotes

- AR1: "Well, they're not called the silver bullet, but anyway, the next option we have. You can tell nobody's happy with it. It's not nothing to be happy about. We're all more or less wondering how bad it's going to be, not how good it's going to be"
- AR2: "It's certainly possible that they could come up with something, but we don't see it right now" "When one falls, another will rise. It always has." "I don't know if I'll trust another one" (laughter)
- NC1: "All of your chemicals seem to be so, you know, directed to a specific problem that I think that, you know, as you solve one problem, another one pops up. I don't know. I mean, I see problems being solved, but at the same time, new ones coming up all along. As far as a cure-all, I don't see that happening"

# Individualism Quotes

- IA2: "...if you get along with them well, (inaudible) soft nudge, I guess, or else it'd be the third-party route, maybe talking to your chemical man, say 'Hey, you know, down the road a bit, down this way, you want to take a drive to this, in the area'. (laughter) That's probably the route I'd take, (inaudible) extension office"
- AR2: "...but as far as, maybe, road ditches, turn rows, stuff like that, if I'm sharing that with a neighbor that's not doing anything, sometimes I'll cut the weeds on his turn row, or cut his ditch, or you know, his side of the ditch, but I may actually get over on his side, in the field, and you know, cut around as well. For the most part, I mean, we don't have that much...everybody's pretty much doing what...trying to do what they can"



# Individualism Concern Quotes

- NC1: “If I’m using a herbicide that I think is working fairly well, and if I see a neighbor that is having a problem, I’ll mention to them that, you know, this herbicide seems to be working pretty well. You know just to—if that’s going to help, you know...It’s best to be your brother’s keeper if you can. It depends on the person”
- IA3: “I’d like a means of knowing what other people are doing. I know what runs through my mind a lot is, ‘I wonder what they did? I wonder what that person did? I wonder what that guy did on his field, it looks good’. And, you know, your circle of friends is small compared to the many, but I do ask a lot of my friends, ‘What did you use? What did you use?’ And then compare it to what I’m doing. And it would be nice to have a bigger bank of that knowledge”

# Conclusions

- Techno-Optimism
  - ✓ A key idea expressed by all groups
  - ✓ Prevents conceptualization of IWM techniques
  - ✓ Techno-concern unrelated to techno-optimism – supports ‘treadmill of technology’ theory and previous findings
- Individualism
  - ✓ A key idea expressed by all groups – even more so than techno-optimism
  - ✓ Prevents direct farmer communication, sharing of knowledge
  - ✓ Increases potential for herbicide resistance spreading farm-to-farm
  - ✓ Desire for farmer knowledge banks at odds with strong individualism