March 2016: survey to Midwest soybean farmers to understand perceptions & management of glyphosate resistant weeds (GRW). Glyphosate (RoundUp) is a herbicide frequently used in conjunction with seeds genetically modified (GM) to tolerate it (RoundUp Ready soybeans, corn).

Soybean production historically more reliant on glyphosate than corn production, thus soybean fields experiencing higher rates of resistance. Problem of GRW increasing. In 2012, 32 million (42%) US soybean fields were affected; farmers losing ~$22 per acre.

CONCLUSIONS

Midwest Soybean Farmers’ Perceptions and Management of Glyphosate Weed Resistance

Student: Emily Southard  Mentor: Carmen Bain - Sociology

INTRODUCTION

- March 2016: survey to Midwest soybean farmers to understand perceptions & management of glyphosate resistant weeds (GRW).
- Glyphosate (RoundUp) is a herbicide frequently used in conjunction with seeds genetically modified (GM) to tolerate it (RoundUp Ready soybeans, corn).
- Soybean production historically more reliant on glyphosate than corn production, thus soybean fields experiencing higher rates of resistance.
- Problem of GRW increasing. In 2012, 32 million (42%) US soybean fields were affected; farmers losing ~$22 per acre.

U.S. Soybean Production, Glyphosate Use, and Glyphosate Resistance

Graph showing soybean production, glyphosate use, and glyphosate resistance.

METHODS

- Mail & internet survey administered to 2,400 soybean growers in Iowa, Illinois, & Indiana, the 1st, 2nd & 5th largest soy producing states respectively.
- Response rate: 31%; N = 725.

FINDINGS

- 67% respondents had GRW.
- 96% concerned about GRW; 91% GRW "serious problem within agriculture."
- Who did respondents consider "most responsible" for glyphosate development? Farmers (95%); pesticide manufacturers (89%); seed companies (73%).

CONCLUSIONS

- Glyphosate weed resistance poses a serious challenge to Midwest soybean production. How farmers manage it will have important environmental, economic, & social consequences.
- Dissonance exists between respondents’ near unanimous belief that farmers should adopt “diversity in weed management” (98%) & desire for new herbicide & herbicide tolerant GM seed combinations. Statement about integrated crop production that included “less reliant on herbicides” elicited far less support than statement without mention of herbicides. We believe this is due to increased labor demands & risk associated with integrated weed management (IMW) & hesitance to decrease reliance on herbicide based weed management.
- Farmers concerned about environmental & human health consequences of herbicide use.
- Public & private support necessary to help farmers adopt IMW practices that can prevent herbicide resistance from occurring with other herbicides and help farmers address environmental and health concerns related to herbicide use.