

IRSA - CONGRESSO MUNDIAL DE SOCIOLOGIA RURAL (01/10/2025 A
20/01/2026) - IRSA 34 - DIVERSE TRANSITIONS OF FARMING AND
PEASANTRIES

**BEHAVIORAL CHANGE AND TECHNOLOGICAL ADOPTION: HOW DIGITAL
AGRICULTURAL SYSTEMS ARE RESHAPING PEST MANAGEMENT IN THE
U.S. POTATO INDUSTRY**

Edem Avemegah (edem.avemegah@wsu.edu)

Jessica Goldberger (jgoldberger@wsu.edu)

Derek Franklin (derekf1@iastate.edu)

Katie Dentzman (dentzman@iastate.edu)

The evolving landscape of pest management in the U.S. potato industry, driven by potential regulation of neonicotinoids, will require growers to depend more on real-time information to make informed decisions about insect pest control. Neonicotinoids, a class of systemic insecticides, play a crucial role in managing various pests in U.S. potato farming. Their introduction marked a breakthrough in pest control, due to their ease of use, affordability, and versatility, making them a key component of modern insect management. However, concerns about their environmental impacts, such as harm to pollinators, including honeybees and bumblebees, and contamination of water and soil, as well as the development of

insect resistance, have led to increased criticism. Consequently, these insecticides are under greater scrutiny from regulators, food and nursery retailers, and environmental advocates. Our study, which includes in-depth interviews, focus groups, and surveys with growers, agronomists, pest control advisors, extension specialists, and entomologists, explores the potential of a decision-aid system as a sustainable supplement to traditional pest control. By applying theories of behavioral adaptation and technology adoption, our research elucidates the social and psychological factors that influence changes in potato pest management practices. Our findings indicate that growers, agronomists, extension personnel, and entomologists see the usefulness of a decision-aid system for managing key insect pests in the absence of neonicotinoids. Results from our survey of Washington State (USA) growers indicate that social-psychological factors, such as attitudes, subjective norms, and perceived behavioral control, are positively associated with the intention to use a decision-aid system in the future. This work aims to enhance understanding of how agricultural stakeholders navigate the challenges posed by evolving environmental regulations while maintaining effective pest control in a complex, changing agricultural landscape.

Palavras-chave: digital agriculture; neonicotinoids; social psychological factors.