

IPM Education for Pesticide Applicators Logic Model

Situation, need	Inputs	Outputs	Outcomes-Impacts		
<p>1. Arizona is geographically large with diverse agriculture, natural and recreation areas, tribal lands & urban environments with ongoing IPM needs (e.g., noxious & invasive weeds, pesticide resistance) & pesticide use</p> <p>2. Over 900 agricultural applicators, 50 aerial applicators, 200 pest control advisors and 7,200 pest control professionals (applicators) for structural and non-agricultural settings in Arizona are in need of ongoing IPM education to maintain licenses and ensure personal and public safety</p> <p>3. Continuous reductions in funding of AZ Pesticide Safety Education Program (PSEP) and UA Cooperative Extension Service have resulted in minimal resources to address pesticide safety education and IPM information needs for applicators and other professionals</p> <p>4. New (PSEP Improvement & Modernization Initiative grant) and existing resources (PSEP, industry gifts) can be leveraged to support a new Assistant in Extension (AiE) educator to help meet these needs while funding through EIP will specifically support IPM-specific training for applicators</p> <p>5. The Arizona Pest Management Center (APMC) collaborates effectively with state lead agency (Arizona Dept. of Ag, ADA) to eliminate duplication of effort and ensure effective implementation and evaluation of programs statewide</p> <p>6. Reciprocal training of applicators in IPM (through EIP) and pest managers in pesticide safety (through PSEP) will improve communication and practices and reduce personal, economic and environmental risks, IPM Roadmap goals</p>	<p>1. Our time and expertise: AiE for pesticide education (tbh, 0.33 FTE from EIP); Pesticide Education Leadership Team (chairs of Veg IPM, Agronomic Crops IPM and School IPM Teams, weed expert / County representation, IPM Assessment expert and ADA PSEP educator) to direct priorities of AiE</p> <p>2. Members of all other priority area teams to support IPM education for applicators in PSEP or EIP-targeted venues</p> <p>3. IPM Assessment Leadership Team, pesticide use database and crop pest losses surveys to support evaluation</p> <p>4. Travel expenses</p> <p>5. Leveraged resources to support AiE</p> <p>6. Resources to hold meetings, demonstrations, trainings, including spray demonstration table</p>	<p>Participation: We reach licensed and to-be-licensed pesticide applicators and pest management professionals, landscapers, rangeland managers, municipalities, school personnel, tribal members, state and federal employees who apply pesticides</p> <p>Activities:</p> <p>1. Ongoing needs assessment and program planning; representation of all priority areas (Agronomic, Specialty Crops, School IPM) plus IPM Assessment and ADA PSEP educator & County Extension participation ensures we broadly address IPM education needs of applicators</p> <p>2. AiE to develop and disseminate technical resources, training materials at meetings, online, via mobile technologies, in collaboration with team members. Products will focus on relationship between IPM and pesticide safety and will target all types of applicators in English and Spanish</p> <p>3. AiE & other APMC/EIP-funded staff to deliver IPM training at Extension meetings, workshops, field days in collaboration with leadership teams.</p> <p>4. Specialists and County Agent members of our diverse leadership teams will present IPM information to pesticide applicators at dedicated pesticide safety trainings (initial and re-certification trainings) coordinated by new AiE and in conjunction with state lead agency.</p> <p>5. Measure adoption and outcomes of training for evaluation (see outcomes) and improvement of programs (e.g., effective teaching methods for diverse audiences – tribal, ESL, etc.)</p>	Short	Medium	Long
			<p>1. Improved awareness and understanding of IPM and its relationship to pesticide safety among applicators</p> <p>2. Increased technical knowledge of spray equipment and methods to improve efficiency of IPM programs and pesticide safety</p> <p>3. Increased understanding of personal, environmental and economic risks associated with pesticide use as part of an IPM program</p> <p>Possible Measures Document change in knowledge with surveys and audience response systems deployed at meetings and field days</p>	<p>1. Improved IPM knowledge among applicators will result in more effective control tactics and economic savings to growers</p> <p>2. Improved pesticide safety knowledge among pest managers will inform product selection and improve environmental outcomes</p> <p>3. Increased adoption and implementation of IPM and resistance management tactics</p> <p>4. Improved use, timing, and precision placement of IPM technologies</p> <p>5. Reduced dependence on higher risk pesticides and practices</p> <p>Possible Measures Document changed behaviors with surveys and audience response systems deployed at meetings and field days; and via crop pest losses surveys; APMC Pesticide Use Database can measure changes in pesticide practices</p>	<p>1. Reduction of pesticide residues and environmental risks</p> <p>2. Reduced risk to health and safety of pesticide applicators and the public</p> <p>3. Improved yield and economic returns for growers</p> <p>4. Reduced pest pressures and crop losses due to pests</p> <p>Possible Measures Changes in agricultural pesticide use documented on Crop Pest Losses Surveys and with APMC Pesticide Use Database; ecotoxicological risk measurement through ipmPRiME collaboration with OSU</p>

How our Logic Model supports Outcomes and Impacts of the CPPM Logic Model:

- We currently only reach a small percentage of applicators, and mainly in initial certification trainings, with IPM information. Now, we will explicitly incorporate IPM information into initial certification trainings, as well as more Pesticide Safety – related IPM information at our broader Extension venues where many private applicators (growers) and commercial applicators receive CEUs to maintain their credentials. Therefore, we will engage a broader audience than in the past including members of new stakeholder communities, with specific IPM training to encourage adoption of sustainable IPM practices that will enhance economic, human health and environmental outcomes, reducing risk consistent with CPPM and IPM Roadmap goals
- We encourage these new stakeholders to use IPM, by providing more advance understanding of IPM best management practices and how they relate to safe and sustainable pesticide use
- We will increase knowledge and implementation of new IPM tools and tactics (e.g., selective insecticides) in integrated strategies for IPM
- We will facilitate production of audience appropriate training materials including traditional, web-based, mobile, in English and Spanish
- We leverage resources and reduce duplication of effort among programs (e.g., EIP and PSEP), our emphasis area teams (agronomic crops, specialty crops, school IPM) and agencies (UA Cooperative Extension and state lead agency ADA) to maximize outcomes while minimizing program inputs; this is consistent with the goal of promoting the implementation of IPM by facilitating coordination across disciplines and programs
- More sustainable IPM practices are adopted
- Cost-benefit ratios of adopting IPM are improved
- Human health, economic and environmental risks are reduced