

IPM Criteria Guidance Document - March 2015

The following criteria are a guide for evaluating a pesticide's usefulness in an IPM program. Efficacy is the primary criterion since the worst pesticide application is one that does not work. The other criteria do not necessarily apply to all pest situations. The specific criteria used and the relative weight of each criterion in the decision making process are dependent on the specific pest/crop combination. Pesticide usefulness in an IPM program should be evaluated in the context of label language to mitigate risk and relative to the risk of the practice or product currently in use.

Attribute	Affirmative Criteria	Intermediate Criteria	Negative Criteria
<b>Efficacy</b>			
Efficacy	Data from field trials under similar environmental/climatic conditions demonstrate good efficacy against target pest	Data demonstrating efficacy against target pest is from a different set of environmental/climatic conditions.	Data from field trials under similar environmental/climatic conditions demonstrate marginal or inconsistent efficacy
Efficacy level under different pest pressure	Product effective under high pest pressure	Product effective under moderate pest pressure	Product only effective under low pest pressure
<b>Economics</b>			
Price	Treatment costs lower than other registered products with equivalent efficacy	Treatment costs similar to other registered products with equivalent efficacy	Treatment costs higher than other registered products with equivalent efficacy
Value in overall management	Total number of applications needed to achieve economic control decreased	Total number of applications needed to achieve economic control remains constant	Total number of applications needed to achieve economic control increased
<b>Non-target Effects</b>			
Selectivity - Toxicity to pollinators (honey bees and native pollinators)	Non-toxic to pollinators	Relatively non-toxic to pollinators only if applied during periods when pollinators are not active	Toxic to pollinators
Selectivity - Toxicity to beneficial arthropods	Non-toxic to beneficial arthropods	Non-toxic to some beneficial arthropods; toxic to others.	Toxic to many beneficial arthropods; likely to result in secondary pest outbreaks
Selectivity - Toxicity to other beneficial organisms (for example, earthworms, mycorrhizal fungi)	Non-toxic to other beneficial organisms / low ipmPRIME* earthworm risk score	Non-toxic to some other beneficial organisms; toxic to others / medium ipmPRIME* earthworm risk score	Toxic to many other beneficial organisms / high ipmPRIME* earthworm risk score
Selectivity - toxicity to non-target organisms (algae, Daphnia etc)	Non-toxic to non-target organisms / low ipmPRIME* algae and Daphnia risk scores	Non-toxic to some non-target organisms; toxic to others / medium ipmPRIME* algae and Daphnia risk scores	Toxic to many non-target organisms / high ipmPRIME* algae and Daphnia risk scores
Post-application movement as vapor or within plant	Pesticide does not move in plant or movement within plant does not increase risk to pollinators, beneficial arthropods, other beneficial organisms, or non-target organisms	Pesticide movement within plant may increase risk to some pollinators, beneficial arthropods, other beneficial organisms, or non-target organisms	Pesticide movement within plant increases risk to pollinators, beneficial arthropods, other beneficial organisms, or non-target organisms
Compatible with cultural pest management practices (for example, resistant varieties, crop rotation, sanitation, vegetation management)	Use of pesticide is additive or synergistic with cultural pest management practices	Use of pesticide does not decrease effectiveness or impede implementation of cultural pest management practices	Use of pesticide is not compatible with or decreases the effectiveness of cultural pest management practices
<b>Resistance concerns</b>			
Mode of Action	pesticide has unique MOA for crop/pest combination	one or two other pesticides with the same MOA are available for crop/pest combination	several pesticides with same MOA are available for crop/pest combination
Resistance potential	When used according to label instructions, there is low risk of pests developing resistance to the pesticide	When used according to label instructions, there is moderate risk of pests developing resistance to the pesticide	When used according to label instructions, there is significant risk of pests developing resistance to the pesticide
Resistance management	Useful in controlling pests which commonly develop resistance to other pesticides	Potentially useful in controlling pests which occasionally develop resistance to other pesticides	Not likely to be useful in resistance management because of existing resistance to the a.i., cross resistance with a.i.s with same mode of action, or pest has never developed resistance previously
Number of crops, uses, applications enabled through this use pattern	Pest monophagous (one host) or not mobile	Pest either polyphagous (wide host range) or high mobility	Pest polyphagous (or wide host range) and high mobility

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<b>Environmental Fate</b>			
Off-site movement - Drift potential	Pesticide formulation or application method has little or no potential for drift (for example, granular formulations or chemigation through drip irrigation lines)	Pesticide application method has some potential for drift (for example boom sprayer applications)	Pesticide application method has potential for drift (for example aerial or airblast sprayer applications)
Off-site movement - Run-off potential	Pesticide or pesticide application method result in little or no potential for run-off to surface water	Pesticide or pesticide application method result in some potential for run-off to surface water	Pesticide or pesticide application method result in potential for run-off to surface water
Off-site movement - Leaching potential	Pesticide or pesticide application method result in little or no potential for leaching to water groundwater	Pesticide or pesticide application method result in some potential for leaching to water groundwater	Pesticide or pesticide application method result in potential for leaching to water groundwater
Persistence of parent and breakdown products	Relatively short-half life	Moderate half-life	Long half-life which increases risk of off-site movement or non-target exposure
<b>Other IPM factors</b>			
Worker risk	Signal word CAUTION / low ipmPRiME* inhalation risk	Signal word WARNING / medium ipmPRiME* inhalation risk	Signal word DANGER / high ipmPRiME* inhalation risk
Compatibility with pest monitoring or forecasting	Tight connection between pest population (or forecast) and economic damage threshold	Lack good data on connection between pest population (or forecast) and economic damage threshold	Applications must be made preventatively (and see below)
Preventative applications	Reduce need for additional pest management inputs later		Increase pest management or production inputs

\* ipmPRiME.org (ipm Pesticide Risk Mitigation Engine) or similar ecotoxicology database