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Using pesticide stewardship to minimize off-target exposures
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Fundamental concepts of pesticide stewardship are of increasing importance to support the future of Iowa agriculture. Pesticide applicators are depended upon to integrate these concepts into current crop production practices that face numerous challenges including resistance in pest populations, changes in technology, shifting land use management practices, and the rising costs of production. The complexity of agricultural production and instant access to information empowered by modern technologies are placing increasing importance on efficiency of decision-making practices and communication of on-site assessment.

Even with advancements in modern crop production practices there is need to continually improve precision with on-target applications. Many different factors can affect the amount of off-site pesticide movement that occurs. For example, problems associated with spray drift may be minimized by paying close attention to spray droplet size, nozzle selection, wind direction, wind speed, humidity, and selection of low volatile formations or use of drift control additives. Site assessment can also be valuable to identify property and sensitive areas located downwind that may require setting a buffer from the application area.

New initiatives and tools include sensitive site directories that can provide voluntary information exchange between growers, apiarists, and applicators. In addition, the United States Environmental Protection Agency has recently engaged a new voluntary Pesticide Drift Reduction Technology (DRT) program to help minimize pesticide drift problems. Other practices in training and educational workshops involve integrated pest management (IPM), resistance management, scouting, economic and/or aesthetic thresholds, pesticide selection practices, reduced risk alternatives, conservation practices, and best management practices (BMPs).

Off-target movement in the form of spray drift, vapor drift, or particle drift can damage or contaminate sensitive areas, introducing risks to people, animals, crops, ornamentals, and beneficial insects. It may be impossible to eliminate all risks of pesticide movement away from application sites, but it is possible to reduce it significantly. Pesticide stewardship can provide a guiding set of concepts for mitigating risk of off-target movement of pesticides.