Drift issues, late application considerations, and soybean fungicides

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Drift issues, late application considerations, and soybean fungicides

Abstract
Offsite movement of pesticides by drift is an important consideration when making any pesticide application but can be an even greater concern when products are applied later in the growing season. There are several reasons for increased concern with later applications. One is that off-target movement of products from mid-season pesticide applications can affect non-target plants and other organisms more because they are actively growing. A common scenario illustrating this point is a postemergence-applied corn herbicide that drifts onto an emerged soybean crop versus a product that was soil-applied before soybeans were planted.

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Offsite movement of pesticides by drift is an important consideration when making any pesticide application but can be an even greater concern when products are applied later in the growing season. There are several reasons for increased concern with later applications. One is that off-target movement of products from mid-season pesticide applications can affect non-target plants and other organisms more because they are actively growing. A common scenario illustrating this point is a postemergence-applied corn herbicide that drifts onto an emerged soybean crop versus a product that was soil-applied before soybeans were planted. Other aspects affecting later pesticide applications are the physical conditions and environment at application. Boom heights are higher to accommodate crop growth, and thus spray applications may be more susceptible to physical movement by wind. Higher temperatures also affect spray applications, especially products susceptible to volatilization. Some products move off leaf surfaces more readily than soil so later applications, when there is considerable crop and weed growth, provide more opportunity for off-target movement.

Pesticide applications made later in the season have come into greater use during the past decade for several reasons. One reason is that advances in technology involving the development of herbicide-resistant crops (Roundup Ready®, LibertyLink®, etc.) have shifted herbicide-use patterns from early season, soil-applied treatments to more mid-season postemergence applications. Another reason is the occurrence of pests that have either not been problems in Iowa before, for example soybean aphid and now possibly soybean rust, or have had populations or their range increase in recent years, such as western bean cutworm. Some pests may now be treated, not because they necessarily cause significant problems to the crop, but because they play a role as vectors of diseases that can then damage the crop. The bean leaf beetle that transmits bean pod mottle virus is one example.

So with summer spraying more common, and with the possibility of Asian soybean rust arriving in the upper Midwest or significant soybean aphid populations, off-target pesticide movement is a warranted concern. Soybean fungicide treatments evoke special interest and concern because they require fine droplets and large carrier volumes to ensure thorough plant coverage. Some fungicides are also toxic to apples and grapes so extra care needs to be exercised to avoid drift onto neighboring orchards or vineyards. The Iowa Department of Agriculture and Land Stewardship (IDALS) Web site has a map showing the locations of apple orchards and vineyards in the state at www.agriculture.state.ia.us. Click on “Orchards/Vineyard GIS/IMS Map” located in the left-hand column.

Most applicators are not familiar with soybean fungicides or their restrictions. Several of the fungicide products do not have full labels but have been granted Section 18 labels for soybean rust control in Iowa. A Section 18 label is a special label that temporarily expands the crops and areas where a product can be legally applied, and may have stricter requirements for use. Most of the Section 18 products labeled for soybean rust control include specific warnings about avoiding offsite movement. Many products have statements such as “DO NOT apply when weather conditions favor drift from treated areas to nontarget aquatic habitats” or “DO NOT spray when conditions favor drift beyond area intended for application.” Often aquatic organisms are especially sensitive to off-target contact with pesticides, thus care should be taken to avoid contaminating surface-water areas.

Pesticides used in agriculture are great tools when they are used correctly. All pesticide label directions should be carefully read and followed. Remember that a Section 18 label is issued under an emergency exemption for a limited time and care should be taken to ensure label directions are followed. When using a Section 18 labeled product, the applicator must have a copy of the Section 18 label in their possession. A collection of the Section 18 labels is available from the IDALS Pesticide Bureau at www.agriculture.state.ia.us/labelsSec18quarantine.htm.

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