Effect of the crop canopy on spray coverage

Robert G. Hartzler
Iowa State University, hartzler@iastate.edu

Brent A. Pringnitz
Iowa State University, bpring@iastate.edu

Follow this and additional works at: http://lib.dr.iastate.edu/cropnews

Part of the Agricultural Science Commons, Agriculture Commons, Agronomy and Crop Sciences Commons, and the Weed Science Commons

Recommended Citation
http://lib.dr.iastate.edu/cropnews/2036

The Iowa State University Digital Repository provides access to Integrated Crop Management News for historical purposes only. Users are hereby notified that the content may be inaccurate, out of date, incomplete and/or may not meet the needs and requirements of the user. Users should make their own assessment of the information and whether it is suitable for their intended purpose. For current information on integrated crop management from Iowa State University Extension and Outreach, please visit https://crops.extension.iastate.edu/.
Effect of the crop canopy on spray coverage

Abstract
When a spray boom is set up properly, it applies the desired rate of product uniformly across the width of the boom at a specific distance below the nozzles. Uniform application can only be achieved if the boom is set at the proper height for the target. For postemergence herbicide applications, the target height is the average weed height.

Keywords
Agronomy

Disciplines
Agricultural Science | Agriculture | Agronomy and Crop Sciences | Weed Science

This article is available at Iowa State University Digital Repository: http://lib.dr.iastate.edu/cropnews/2036
Effect of the crop canopy on spray coverage

When a spray boom is set up properly, it applies the desired rate of product uniformly across the width of the boom at a specific distance below the nozzles. Uniform application can only be achieved if the boom is set at the proper height for the target. For postemergence herbicide applications, the target height is the average weed height.

Delays in application may result in the crop canopy being significantly taller than the intended target. Under these conditions, the crop not only interferes with distribution of the herbicide onto the weeds but also the crop may be exposed to excessive herbicide rates. The effect of a height differential between crop and target on the amount of herbicide intercepted by the crop is shown in the figure. For this situation, it is assumed that the target (weed canopy) is 4 inches above the soil surface and that the boom is set to operate 28 inches above the target. Crop rows that are directly beneath a nozzle receive the maximum dose, whereas rows positioned to the side of nozzles would be treated with less herbicide. In this example, 12-inch corn treated with 0.67 oz/acre of Accent could potentially receive 0.94 oz Accent/acre, whereas 16-inch corn could be treated with up to 1.17 oz/acre.

The potential for spray coverage problems increases as height differential between the target and crop canopy increases. The only real solution to the problem is to use drop nozzles where the nozzles are placed directly over the row middle. The use of drop nozzles increases weed control while reducing the risk of crop injury. Raising the boom height does little to alleviate problems with coverage but increases the potential for herbicide drift into adjacent fields.
This article originally appeared on page 102 of the IC-484(13) -- June 12, 2000 issue.

Source URL:
http://www.ipm.iastate.edu/ipm/icm//ipm/icm/2000/6-12-2000/canopyeffect.html

IOWA STATE UNIVERSITY
University Extension