Lower Seeding Rates of Soybean Can Be Combined with Pre-Emergence Herbicide

The current issue of Weed Science presents a study of whether or not soybean seeding rates can be used as part of an integrated component of herbicide resistance management.

(PRWEB) December 17, 2014 -- Weed Science—The cost of soybean seed has increased more than 225% since the introduction of glyphosate resistant varieties in 1996. This increase in price has caused growers to reduce the rate of seeding in fields. However, the lower crop seeding rate can lead to a more open canopy for weeds and increased competition with the crop.

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Field studies were conducted in Wisconsin in 2012 and 2013 to determine the most effective seeding rates when used with or without pre-emergence (PRE) herbicides. Soybeans were planted using five seeding rates ranging from 148,200 to 469,300 seeds per hectare. Half of the plots were treated with a residual PRE herbicide. The plots were then sprayed post-emergence (POST) at the V4 stage of soybean growth using one of two herbicide programs. One program contained glyphosate plus conventional herbicides and the other consisted of only conventional herbicides.

With the reduced seeding rate, fields had fewer soybean plants and a slower-to-develop crop canopy, providing weeds a greater opportunity to establish and thrive in the field. Canopy development, an important component of integrated weed management, relies on the growth of the crop to curb the establishment and growth of weeds.

The results of the study demonstrated that a lower seeding rate achieved beneficial crop yields and economic returns when combined with a PRE herbicide. The use of broad spectrum PRE herbicides reduced total weed density and biomass by 93% and 95%, respectively, in the two years of the study.

With the current increase in seed costs and the potential for this in the future, producers can offset this cost with proper seeding rates used in conjunction with a PRE herbicide. This will also help reduce the likelihood of herbicide resistant weeds because the total number of weeds exposed to POST herbicides will be greatly reduced.


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About Weed Science
Weed Science is a journal of the Weed Science Society of America, a non-profit professional society that promotes research, education, and extension outreach activities related to weeds; provides science-based information to the public and policy makers; and fosters awareness of weeds and their impacts on managed and natural ecosystems. For more information, visit http://www.wssa.net/.
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