



HARVEST WEED SEED CONTROL IN SOYBEANS FACT SHEET

This is one in a series of fact sheets from the Mississippi Soybean Promotion Board and the soybean checkoff. Each sheet presents a brief overview of a topic important to Mississippi soybean production. More information on each topic can be accessed through the link at the bottom of the sheet. To see other fact sheets, click [here](#).

It is accepted dogma that relying totally on herbicides for weed control in crops will hasten the development of herbicide-resistant (HR) weeds and will render the remaining efficacious herbicides ineffective. This dilemma is being addressed by developing and using alternative non-chemical weed control practices to aid in or supplement the control of HR weeds and/or HR weed escapes by herbicides.

Harvest weed seed control (HWSC) systems target seeds of escaped weeds that are present at harvest in order to minimize new inputs into the soil weed seedbank. This alternative weed control system has accrued importance in the fight against HR weeds. These systems target the weed seed-bearing chaff/residue material that comes out the back of the harvester.

Current HWSC systems include chaff carts, narrow windrow burning, direct baling, and the integrated Harrington Seed Destructor (iHSD—operates on the premise that weed seed that is mixed with the chaff exiting the rear of the combine can be physically altered so they are no longer viable). All are designed to reduce populations of problematic weeds by destroying seeds of those weeds that have retained their seed at crop harvest. The effectiveness of these systems will depend on the retention of a significant portion of seed by targeted weed species at crop maturity and/or at crop harvest.

Burning residue that is concentrated into intentionally constructed narrow windrows behind the harvester vs. burning standing stubble residue results in higher burn temperatures that are longer-lasting and that will result in greater destruction of weed seeds. Research results show that complete control of weed seeds expelled from the combine can be achieved by burning narrow windrows of soybean residue. This will significantly reduce the amount of seed that will be available to replenish the soil weed seedbank.

Research results from using the iHSD support its potential as a useful tool that can be used to minimize the input of viable weed seed into the soil weed seedbank in Midsouth soybean production systems. Improvements in iHSD design and operation are occurring, and are resulting in lower costs for the unit and its installation.

HWSC practices should be considered to supplement herbicide control of weeds so that retention of viable seed of problem weeds such as HR Palmer amaranth on a field site is minimized. This is especially important if and when a crop production site becomes uniformly contaminated with HR weeds that persist through crop maturity and that produce seeds.

A preponderance of results from research indicates that using the at-present unconventional HWSC systems to supplement herbicide weed control can result in reduced populations of weeds. This is especially important in fields that are contaminated with populations of HR weeds.

Click [here](#) for a detailed discussion of this topic.

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