Late-Season Herbicides Potentially Decrease Canola Yields

Canola continues to be a highly desired crop due to its health and agronomic benefits, primarily weed management. Control of grassy weeds can be achieved with timely herbicide applications; however, environmental conditions can delay these applications until flowering. Unfortunately, little information is available on the impacts of later herbicide applications on canola productivity.

In an article recently published in *Agrosystems, Geosciences & Environment*, researchers highlight the results of a multi-year field study evaluating glyphosate, clethodim, and quizalofop-P-ethyl applied at bolting, early flower, and mid-flower.

Research findings demonstrated that the application of herbicides during the early reproductive stages resulted in significantly lower yields (averaging 24% decrease) compared with the non-treated control. Lowest yield and highest pod abortion followed glyphosate applications. However, pod abortion also was noted following herbicide applications that did not influence yields, suggesting that it was not the only component contributing to lower yields.

Successful weed control is vital to the success of canola and is the primary reason why it was introduced into the southern Great Plains. Timely herbicide applications are critical to not only manage weeds, but also lower the risk of crop injury. Should a later application be needed, the use of the safest herbicides available should be utilized.

Heat-Generating Nuclear Waste in Salt

As the United States continues to search for a geological repository that can accept the nation’s high-level nuclear waste, deep salt formations have emerged as a top candidate for safe, long-term disposal. High-level nuclear waste, often capable of generating significant heat, includes spent nuclear fuel from civilian reactors.

In the 2019 issue of the *Vadose Zone Journal*, researchers from Los Alamos National Laboratory report on data from a nine-month operational test of a full-scale heated nuclear waste canister mock-up in the Waste Isolation Pilot Plant facility. This test is the first field-scale thermal test undertaken in salt in the United States since the late 1980s.

The team found that the thermal behavior of the mined salt used to cover the heated canister could be represented well in numerical simulations using existing salt property models. Further, simulations show that the canister covered with dry mined salt behaves like a chimney. Flowing air pulls moisture away from the canister and out the top of the salt pile.

Experiments such as these are part of a broader effort by the U.S. Department of Energy to create safe disposal options for the nation’s high level nuclear waste.


doi:10.2134/csa2019.64.0411

doi:10.2134/csa2019.64.0410

Thermocouples being installed for operational testing of a full-scale heated nuclear waste canister mock-up in the Waste Isolation Pilot Plant facility. This test of the “in-drift” disposal concept is the first field-scale thermal test undertaken in salt in the U.S. since the late 1980s. Photo by Brian Dozier, Los Alamos National Laboratory.