By JOSH FLINT

PENNYCRESS is by no means a top performer when it comes to alternative-biofuels plants. However, it has one attribute few other biofuel-producing plants can claim; it’s a winter annual. In much of the state, pennycress could be grown after corn in a traditional corn-soybean rotation. Because it matures faster than wheat, there’s also a larger window for “double cropping” soybeans afterward.

“I call it the OK crop, because it’s OK in all the categories,” says Terry Isbell, a research chemist with the USDA Agricultural Research Service in Peoria. “Its No. 1 attribute is it fits the rotation.”

George Kegode, an alternative crop systems specialist with Northwest Missouri State University, is excited about the potential of pennycress to drop in to current crop systems.

“The beauty of it is pennycress won’t grow during the summer,” Kegode notes. “This crop already has a fit. We just need to make it appealing to farmers.”

The optimal planting window for pennycress starts in early September. It can be planted in October, but later-planted pennycress will not germinate until the spring. As a result, the oil content will decline.

Penny cress seeds are processed for their oil. The oil is a drop-in feedstock for biodiesel facilities. Isbell says the free fatty-acid content is typically low, so no pretreatment is needed.

The oil can also be used to manufacture hydrotreated renewable jet fuel, something United Airlines is quite interested in. “It’s a plug-in replacement,” Isbell explains. Not to mention, United would receive a nice credit for switching over to a renewable fuel. Plus, the company wouldn’t incur penalties for displacing another crop.

Participants got a first-hand look at the up-and-comer at Western Illinois University’s pennycress plots, which are managed by Winthrop Phippen. He’s been conducting a variety of research trials, including breeding exotic varieties and nitrogen applications.

One of Phippen’s most practical experiments is being paid for by the Illinois Soybean Association. Before endorsing the crop, ISA commissioned Phippen to ascertain whether pennycress can cause a yield drag on the subsequent soybean crop.

Last growing season, Phippen cut the pennycress and let the plant and seeds fall on the ground. The following soybean crop saw a 3-bushel yield advantage over the control group. There was no difference in oil content or grain quality.

Phippen is continuing his research on the effect of pennycress on the following soybean crop. There are rumors the plant could be a host for soybean cyst nematode. He hopes to have the answer soon.

Other ongoing research includes looking at the byproducts that are left after the seeds are pressed for oil. Illinois State University is working on feeding trials with the seed meal. Preliminary results indicate it could be suitable for incorporation of up to 10% in a beef cattle feed ration.

Pennycress seed facts
- 95% self-pollinated, no insect activity needed
- Requires a cold period to flower
- Typically has a garlicky scent
- Harvest time is end of May/beginning of June
- Optimal planting is Sept. 1 through mid-October
- Deer will occasionally bed down in the crop

PENNYCRESS BREEDER: WIU’s Winthrop Phippen is the only pennycress breeder in the U.S. He is looking to fine-tune attributes to make the crop a candidate for double cropping between corn and soybeans.