

Working out the bugs from full-season no-till beans

GEORGETOWN, Del. — There's considerable interest among Delaware farmers in full-season no-till soybeans. But though the system shows promise, researchers and extension personnel at the University of Delaware say there are still plenty of bugs to be worked out yet. Until then, they're not advocating wide-scale adoption of this practice.

"We have worked out some of the problems, though," says extension crops specialist Frank Webb, "and I think some of our better farmers may want to try it out on a few acres."

Weed control is one of the biggest problems with full-season no-till soybeans because available residual herbicides aren't as effective as those available for no-till corn. For this reason, seedbed selection is very important. The thicker the mulch cover, says Webb, the better the system will work. As with no-till corn, the cover is needed to conserve soil moisture, reduce soil temperature,

and control erosion. It's also critical for weed control.

If the soil surface is effectively covered with a mulch of some sort, weed seed germination is greatly reduced and you're less dependent on the effectiveness of herbicides, he says.

A good double crop residue from either barley or wheat followed by no-till soybeans seems to control weeds well.

Living covers from fall-established small grains or legumes have also proven very successful in some of his studies at the university's Georgetown Substation.

None of Webb's work with no-till full-season beans suggests that they require a special fertility program. But the phosphorus and potash will have to be broadcast on the soil surface.

As with conventional soybeans, liming should be done to maintain a profile pH in the neighborhood of 6.0 on light, sandy soils. In heavier

silt loam soils the pH might go to 6.5, he says.

Surface pH isn't as critical under soybeans for herbicide activity as it is for corn.

Little work has been done on variety selection for no-till full-season beans. So far, the standard, better-performing varieties under conventional tillage seem to do best.

Though he hasn't noticed any additional insect problems under this system, he does say that late-season foliage and pod feeders are likely to be as much of a problem under no-tillage as they are under conventional cultivation. But again, little work has been done on this aspect of no-till full-season production.

Getting back to weed control, Webb has found that a combination of Paraquat plus 2, 4-D applied 10 days to two weeks before planting gives satisfactory results.

Don't forget to use a surfactant with the Paraquat, he says.

If a bit more burn-down activity is needed right after planting, a little more Paraquat can be applied along with residual materials like Lorox for broadleaf weed control, plus one of the grass killers like Dual, Lasso, or Surflan.

A more expensive but very effective practice involves spraying once, just after planting, with Roundup (at 1.5 to two quarts per acre) along with Lorox and one of the grass materials mentioned above.

Row spacing is another critical part of full-season no-tillage bean production, says Webb. His work at the Georgetown Substation indicates that rows wider than 20 inches aren't satisfactory for this system.

"We must have 20-inch row planting or narrower—the closer the better. If you have a no-till drill you can get your spacing down to six or seven inches," he says.

Close rows have the same yield advantage under no-till that they have under conventional tillage.

They also are a distinct ad-

vantage for weed control because the closer the rows, the quicker the canopy will shade the soil surface and the fewer weeds you'll have.

Effective weed control is critical to successful no-till soybean production, stresses Webb. Choose a branching type variety that will quickly make a good canopy, use close row spacing, and adjust your plant population accordingly. The narrower the row, the fewer beans per foot you need.

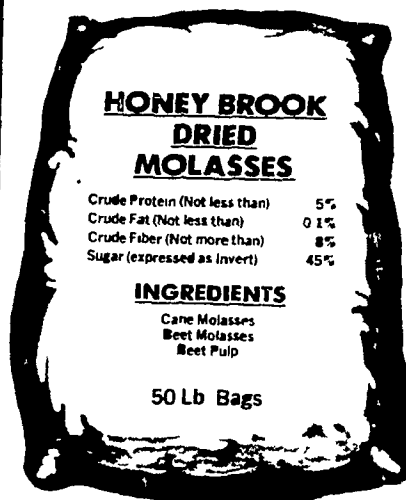
Combined with an effective chemical weed-control program, the results should be good, he says.

"Over the last few years our no-tillage beans have yielded as well as conventional soybeans in many instances, or a bit higher."

There are still problems to be worked out before Webb and other specialists at the University will feel confident in advising wholesale adoption of this cultural practice for soybeans. But he sees no reason why farmers who have the equipment and are good managers shouldn't experiment with the idea on a few acres.

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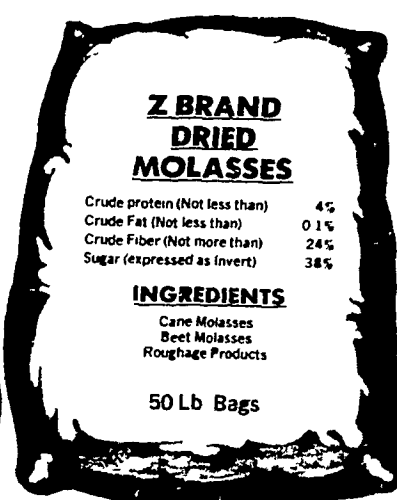
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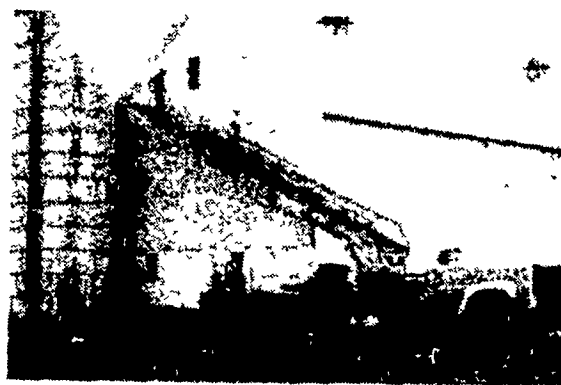


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