Pushing soybean yields may earn a farmer and his CCA bragging rights, but the cost of chasing high yields might not pay.

In a three-year study spanning 15 sites across Ontario, CCA Horst Bohner, soybean specialist with the Ontario Ministry of Agriculture and Food, tested a series of inputs to maximize the economics and yield response in soybeans. This study was conducted in conjunction with agronomist David Hooker at the University of Guelph.

Going for broke on yield, Bohner says, does just that: While throwing multiple inputs at a soybean crop can significantly improve performance, the yield boost is rarely enough to cover the high cost of inputs.

The “kitchen sink” treatment in the 2011–2013 study, titled “Intensive Management to Increase Soybean Yield and Seed Quality,” consisted of Cruiser Maxx seed treatment, HiCoat inoculant, Quilt foliar fungicide, a higher seeding rate (250,000 seeds/ac), 50 lb/ac of nitrogen in the form of extra slow-release nitrogen (ESN) and ammonium sulfate, 3 gal/ac of 2–20–18 liquid applied in furrow, 6 L of slow-release nitrogen (SRN), and 2 L of 3–16–16 foliar fertilizer. The soybean variety also had 200 Crop Heat Units (CHUs), longer than recommended for the given area.

In the control, planting a longer-maturing soybean variety alone increased yield by an average of 2.1 bu/ac. But the “kitchen sink” approach of intensive soybean management added another 4.9 bu/ac on average over the three years.

The cost of adding those extra bushels under intense management, though, totaled $140/ac—far surpassing the economic return even at record-high soybean prices.

Fertilizer

The most costly treatment with the lowest return-on-investment was nitrogen (N) fertilizer, Bohner points out.

“Forget it all together,” Bohner says about adding N to soybeans. “Soybeans fix their own nitrogen, so don’t worry about that.”

By Tanner Ehmke
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Chasing yield

Does intensive management of soybean pay?