



THE PULSE AGRONOMY NETWORK
PARTNERSHIP WITH INDUSTRY

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What's in the PAN –

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PAN User Survey

The PAN Committee is meeting this week and we would appreciate it if you would take a couple minutes to complete an online survey. Your feedback will help provide direction on content and delivery of PAN for 2006 and beyond.

Thank you for your time and consideration,

Earl Greenhough - PAN Editor

PAN Survey link - <http://www.surveymonkey.com/s.asp?u=303891399165>

What to look for after growing a pulse crop

Brandon Green - Corporate Agronomist, Enviro-Test Laboratories

Soil nitrogen (N) levels are usually higher after growing a pulse crop. Although the pulse crop will have used available soil N during crop growth, leakage of root exudates high in N and the later decay of pulse crop residue, again high in N, will provide some N for the next crop. How much, depends on the pulse crop being well nodulated, the amount of pulse residue, and moisture and heat after harvest, and time.

Cereal and oilseed crop residue usually returns half the N in that residue back to the soil in four years. Soil microbes break down the crop residue but because these residues are low in N, N is taken from the soil or fertilizer so this process can occur. Pulse crop residue, by comparison, is already high in N, so the breakdown of the residue is faster and half the N in pulse crop residue is returned to the soil for the next year. Soil moisture and temperature during the fall and spring will determine how fast the pulse crop residue is broken down and the N released.

If the pulse crop is harvested earlier, there is more time for residue breakdown before freeze up. Where soil is moist and warm, breakdown occurs more rapidly. Cultivated pulse residue breaks down more rapidly than when residue is left on the soil surface. As a result, wait as long as possible before taking soil samples on pulse residue. Be careful of next year's crop selection and nitrogen fertilizer rates. If you've grown a big pulse crop and you're in a wetter, warmer soil situation and particularly if there's lots of time from harvest to freeze up and/or the pulse residue was cultivated, there can be a fair amount

of N come available during stem elongation of the subsequent cereal crop and that can lead to lodging. By contrast, if time is shorter, the soil drier or cooler, the N can come available late in the next growing season which then goes to protein production in the cereal. That's fine for wheat and feed barley but could prevent malt barley from achieving malt status.

The average amount of N released from pulse residue is as follows. Note, it can be higher or lower according to the factors discussed previously.

Pulse	lb/ac N released per 100 lb/ac pulse yield	Minimum yield of pulse crop used
Chickpea	0.25	2000
Fababean	0.5	1500
Field bean	0.25	800
Field pea	0.5	2000
Lentil	0.4	1000
Soybean	0.4	2000

Therefore, a 2000 lb/ac (33 bu/ac) field pea crop would produce $(2000 / 100 \times 0.5) = 10$ lb/ac of N while a 3000 lb/ac (50 bu/ac) field pea crop would produce $(3000 / 100 \times 0.5) = 15$ lb/ac of N. So while this is not a lot of N, it does help a lot with high N fertilizer prices. By contrast, 15 or even 10 lb/ac of extra N coming available during stem elongation or protein production can harm an already well-fertilized crop.

By submitting samples and indicating the type of pulse crop previously grown and yield data, N recommendations will be provided. This is an important step in managing nitrogen in a dynamic crop rotation.
