



THE PULSE AGRONOMY NETWORK
PARTNERSHIP WITH INDUSTRY



PAN - All Pulse Bulletin #10 – August 10, 2009

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Swathing, Desiccating and Harvesting Pulses

- Dale Risula, Saskatchewan Provincial Specialist, Specialty Crops and
- Gordon Tuck – APG Commissioner – Vegreville, Alberta

With some swathers already in the pea fields, it seemed like a good time to review swathing, desiccation or pre-harvest weed control and harvesting tips.

Timing is everything when maintaining quality and yield in a pulse crop. The application timing for pre-harvest weed control or a desiccant coincides with the timing that a producer may decide to swath. There is a difference between the rapid dry down achieved by desiccation with Reglone™ and the benefits of perennial weed control provided by one of the glyphosate products on the market. The table below shows the suggested timing for application of Reglone™ and glyphosate, but always refer to the product label for complete product information.

According to Dale Risula, Saskatchewan Provincial Specialist, Specialty Crops, the choice of reglone or glyphosate should be made on the basis of what conditions are present and the future use of the harvested grain. Glyphosate will affect the quality of the germination of pulse crops and since glyphosate is translocated through the plant, you can expect it to take longer to perform its function, while Reglone tends to work faster than glyphosate because it is a contact chemical. Neither of these chemicals will speed up maturity of the crop, and they are not intended for this purpose.

Timing of Application	Reglone™	Glyphosate (***not all products are registered on all crops)
Peas	When the crop has reached maturity	Less than 30% seed moisture, majority (75-80%) of pods are brown
Lentils	When swathing would normally commence, lowermost pods are yellow-brown and rattle	Less than 30% seed moisture, lowermost pods (bottom 15%) are brown and seeds rattle
Chickpeas	Desi: when majority of plants are yellow, most pods are mature and seed colour has turned Kabuli: when majority of plants are ripe and dry. Seeds from the youngest pod you will be able to harvest should be detached and turning color.	Less than 30% seed moisture

Dry beans	When 80-90% natural defoliation has occurred	Less than 30% seed moisture, stems are green to brown, pods are mature (yellow to brown), 80 – 90% leaf drop (original leaves)
Fababeans	No desiccant registered	Less than 30% seed moisture
Soybeans	When 80-90% natural defoliation has occurred	Less than 30% seed moisture, stems are green to brown, pod tissue is dry and brown in appearance (80 – 90% leaf drop)

Swathing is also an option to encourage dry down, and may reduce the risk of rocks being put through the combine. Pea plants may have as much as 1/3 green coloration and still cure in the swath. According to a recent research report from the CDC at Saskatoon, lentils that were swathed retained their color better than those that were desiccated and straight-combined (Davey, 2007). With green peas, it is also important to preserve color. Bleaching occurs with high humidity, bright, hot sunshine, and warm temperatures coupled with rain showers, so swathing early and when the forecast is for dry weather is ideal, although it may not be so easy to achieve.

Some of the potential disadvantages of swathing include shattering losses if peas are swathed past the right stage and pea swaths being blown around, as there is little stubble left on anchor them. Be prepared to delay swathing immature areas, otherwise overall quality and quantity may be affected. For instance, yellow peas swathed too early may retain a green color if swathed before adequately mature. Swathing at night or early morning will help reduce shatter losses. Rolling may decrease the risk of pea swaths blowing away.

Lifters seem to be the biggest topic of discussion so far this year, should they be removed all together to cut closer to the ground or spaced closer together than normal (perhaps 9” instead of 12” or more) to ensure the entire crop is fed into the header? In general, the purpose of the lifters is to bring the crop up off the ground, to help feed the crop into the machine and to avoid dirt and even small rocks from coming into the header. There are many lifter options from the nylon flexible lifters to the rigid or skid lifters, usually made of steel. Proper setting of the lifters is essential, to minimize ground contact with the cutter bar and the lifters as well as to minimize pressure on the lifters (to avoid cultivating with the lifters). By ensuring that fine-tuning adjustments are made, the crop will feed into the combine better and provide a better quality sample.

In addition to lifters, pick up reels, flex headers and air reels are all options that will enhance the ability to harvest plants with pods that are low to the ground. Gordon Tuck says that if you empty your hopper before it's too full, there is less damage to the peas from the hopper fill auger and less wear on the combine's parts. Other adjustments that can be made include matching the reel speed to the ground speed in order to reduce shattering and setting the combine for a slow cylinder speed, fairly open concaves and a lot of wind to ensure a nice clean sample.

Risula agrees that keeping the sample free of green material and unwanted organic material is important for a good sample but also for storage. He notes that harvested pulses usually go through a sweating period just after being threshed and if this happens in storage, there is likely to be excessive heating which would cause damage to the stored grains. Aeration to reduce the moisture content to below 16% for storing peas is important and in hot weather using aeration may cool the grain down to about 10 or 15 degrees Celsius and help to avoid heating and quality losses.

References

Davey, B.F. 2007. Green seed coat colour retention in lentil (*Lens culinaris*). MSc thesis, University of Saskatchewan, Saskatoon, Canada.

Winter Seeded Pulses

While winter wheat and fall rye are well known fall seeded crops, recent research into winter pulse crops is showing some promise. Dr. Kevin McPhee (NDSU - Department of Plant Sciences) and Mark Olson (Provincial Pulse Industry Development Specialist) were interviewed regarding the Winter Pulse Crop research that is underway in Alberta. The interview can be viewed by following this link: <http://farm.tv/videos/originals/winter-pulse-crops/>

More information on winter pulses can be found at: [APB #7 - October 18/07 - Winter Pulse Research](#)

PMRA Update

The following table includes the project status on Minor Use Pesticide Projects as reported by the Pest Management Centre on May 29, 2009.

Crop	Pests(s) ¹	Active Ingredient	Product	Project Number	Project Status (Submission Status)
¹ Pests listed in this table are the pests requested at the D.3.1 and not necessarily the pests that will be registered or that were registered					
Bean, dry	Rust (<i>Uromyces appendiculatus</i> (syn. <i>U. phaseoli</i>)	myclobutanil	Nova 40W Fungicide	AAFC04-026	Reporting Phase
	Bacterial wilt (<i>Curtobacterium flaccumfaciens</i> subsp. <i>flaccumfaciens</i>) Halo blight (<i>Xanthomonas axonopodis</i> pv <i>phaseoli</i>) Bacterial brown spot (<i>P. syringae</i> pv. <i>syringae</i>)	copper compounds	Kocide 2000	AAFC05-017	Project complete (Accepted for Use)
	Mold, White (<i>Sclerotinia sclerotiorum</i>)	fluazinam	Allegro	AAFC07-043	Project Complete (Submitted to PMRA)
Bean, dry edible	Potato Leafhopper	imidacloprid	Gaucho 480 FL		Project complete (Accepted for Use)
	Labelled Weeds	imazamox bentazon	Basagran Forte Solo	AAFC06-004	Project Complete (Submitted to PMRA)
	Tarnished Plant Bug (TPB)	metaflumizone	Alverde	AAFC08-027	Data Generation
Bean, faba	Labelled Weeds	imazamox imazethapyr	Odyssey WDG Herbicide	AAFC03-023	Data Generation
	Labelled Weeds	glyphosate	Roundup Weathermax	AAFC06-057	Project complete (Accepted for Use)
Chickpea	Broadleaf Weeds (BLW)	sulfentrazone	Authority 480	AAFC04-028	Project complete (Accepted for Use)
	Labelled Weeds	glyphosate	Roundup Weathermax	AAFC06-005	Project complete (Accepted for Use)
Pea, dry	Rust (<i>Uromyces fabae</i> (syn. <i>U. viciae-fabae</i>))	myclobutanil	Nova 40W Fungicide	AAFC04-027	Project Withdrawn
	Downy mildew (<i>Peronospora</i> spp.)	pyraclostrobin	Headline EC Fungicide	AAFC09-003	Data Generation

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