Soils and Crops - Saskatoon
March 16\textsuperscript{th}, 2016
Scott Hartley P.Ag.
Flea beetles

- Primary FB species:
  - crucifer – black (CFB)
  - striped (SFB)
- Species composition varies on region in province.
- SFB tend to be active earlier in the spring and into hibernation earlier in the fall compared to CFB
- Difficult to predict infestations in fall
Relative abundance of crucifer, striped and hop flea beetles emerging from canola at AAFC-Saskatoon in 2004-2015

Early seeded (left)         Late seeded (right)
Flea beetle counts on sticky cards in CL canola (2015)

Spring population
(14-21 DAS)

Summer population
- SFB (August 1-15)
- CFB (August 15-30)
All products performed best in drier conditions and higher temperatures
Neonicotinoids are more effective on crucifer flea beetles than striped flea beetles
There were no statistical improvement with higher rates of neonicotinoids on most years
Only with very wet conditions or very high flea beetles populations higher rates of neonicotinoids and mixtures will be advantageous.
Yellow sticky cards for monitoring flea beetle populations in commercial fields
Pea Leaf Weevil
Pea leaf weevil

- Seed treatment provides most consistent yield response
- 30% of plants with damage to clam leaf is ET for foliar spray
Cabbage Seedpod Weevil
Cabbage Seedpod Weevil
2015 Survey

Weevils per 25 sweeps

- 0
- 1 - 3
- 4 - 9
- 10 - 30
- 31 - 90
- > 90
Grasshoppers

- Low risk for most areas in 2015
- Spring and extended fall favourable development and egg-laying

- Melanoplus bivittatus (Two-striped) remains most dominant species in Saskatchewan
Wheat Midge 2015

- Moist conditions leading up to 2015 favoured wheat midge
- Dry conditions in the spring were not ideal for wheat midge development.
- > 25 mm of precipitation required prior to end of May for midge development or delayed, erratic, possibly extended emergence
Wheat Midge Management

- Conventional spring wheat requires regular monitoring when crop is in a susceptible stage
- Susceptible stage – From when the wheat head becomes visible until the crop flowering (anthesis)
- Susceptibility drops dramatically at the onset of anthesis due to natural resistance from the build-up of ferulic acid
2015 – MTW on approximately 1/3 of prairie wheat acres

2016 – available in CWRS, CWES, CPSR classes.

One CWAD (durum) VB is expected to be widely available with another durum VB with limited release.

VB options available with both midge and fusarium head blight tolerance

http://www.midgetolerantwheat.ca

Refer to Saskatchewan Seed Guide
Bertha Armyworm
Bertha armyworm

- 2013 - Last year of outbreak
- No reports of spraying for bertha armyworm in 2015
Faba bean
- One generation per season north of 50 degrees Lat.
- Control effective but re-invasion problematic
- Seed early

Lygus bugs

Lygus lineolaris (tarnished plant bug)

Lygus borealis – adult and nymph
- Populations vary from year to year
- Can over-winter as eggs
- Most infestations result from “blown-in” populations (like diamondback moths)
- During growing season, give birth to live young – populations can “explode” under ideal (warm, moist) conditions
- Natural predators can keep populations at “acceptable” or non-economic levels
Aphids - life cycle in Cereals (2015)

English grain aphids

Credit - T. Wist - 2015
Green Lacewing

- Egg
- Larva
- Adult

Aphid predators
Ladybird beetle

Pupae and larvae
Syrphidae – fly larva / maggot (aphid predators)
Swede midge in Sask.

- Monitoring for swede midge since 2007
- Included canola and susceptible (brassica) vegetable crops
- First significant infestations in canola the NE in 2012-13
- AAFC research and surveys to determine distribution, biology (prairies), economic threshold, management options?
• Swede midge damage to canola (Ontario) – damage to growing point
• “bouquet” of pods
Petals ‘glued’ together

Saskatchewan symptoms:
- florets affected
- Most severe damage in field margins
Swede midge larvae (canola flower)
Swede midge

• Multiple over-lapping generations
  • 4 in Ontario
  • 2 or 3 in Saskatchewan?
Swede midge biological control

Swede midge parasites in Saskatchewan

Species #1

Gastrancistrus sp. (Pteromalidae)

Credit: Lars Andreassen (AAFC)
Species #2

- Platygastrid wasp – *Inostemma* sp.?
- identity, biology, host specificity unknown
- presence of parasitoids encouraging
• Visual survey and pheromone traps
• 114 trap sites from B.C. Peace to near Steinbach, Manitoba.
• 5 pheromone sites positive
Prairie Pest Monitoring Network

http://www.saskatchewan.ca/
(for maps and insect information)

www.publications.gc.ca
- “Field Crop and Forage Pests and their Natural Enemies in Western Canada”