

## BLIGHT SENSITIVITY OF POTATO CULTIVARS

As part of on-going work on the agronomy and field performance of new potato cultivars, the U of S in 2010 unfortunately had an opportunity to assess the relative Late Blight sensitivity of both the top growth and the tubers of many of the potato cultivars commonly grown in Saskatchewan. Although this is just a snap shot, single event observation, it is nonetheless of interest.

### Trial background

- 16 cultivars tested in replicated field trials
- Trials planted in mid-May using certified seed from reputable suppliers. Standard crop management practices employed.
- First blight spray (Dithane) applied prior to row closure, followed at 2 week intervals with alternating Bravo or Dithane.
- 15" of rainfall + 1 irrigation

### Blight arrives in Saskatoon area Aug 2. Rain/fog on 11 of next 14 days which was ideal for spread of blight

- Acrobat or Bravo applied every 5 days following arrival of blight
- Foliage evaluated for Blight reaction Aug 16 (2 weeks after blight arrival)
- Tops flailed, and then top killed with Reglone + Bravo
- Crop harvested Sept 7 and rated for tuber damage by blight

### Results

Based on **damage to the foliage** at 2 weeks after arrival of the Late Blight, the cultivars could be divided into three clear cut categories (See Figs. 1 and 2)

**Wimps** – all leaves dead and vines extensively infected within 2 weeks of the arrival of the blight

Most to least sensitive ----- **SHEPODY, MODOC, NORLAND, PEREGRINE**

**Moderate** – leaves damaged but spread within canopy is slow and vines are largely intact after 2 weeks of attack

Most to least sensitive ----- **OPEARL, PACIFIC RUSSET, YUKON GOLD, ALPHA, GEMSTAR, BURBANK, NORKOTAH**

**Tough** – just a few leaf lesions, limited spread within the canopy and no involvement of the vines.

Most to least sensitive - **YUKON GEM, ALPINE, CLASSIC, MILVA**

*In many cases we saw tough varieties with virtually no infection growing right alongside rows of sensitive cultivars that had been reduced to stumps by the disease.*

**Tuber damage** – the tubers showed clear signs of Blight damage at the time of lifting. The tubers were rated as % of the tubers damaged by blight

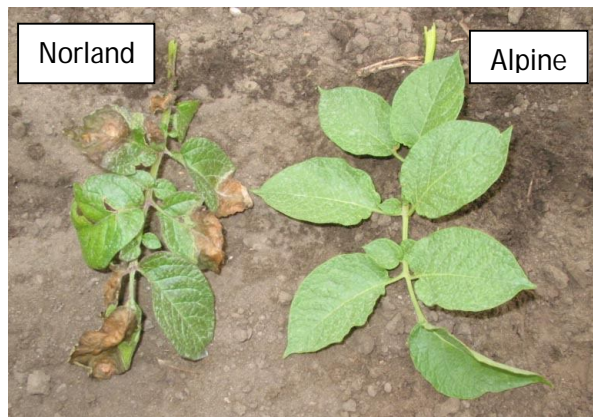
- 10-50 % damaged      Shepody
- 1-5 % damaged      Peregrine, Pacific Russet, Yukon Gold, Norland
- Less 1%              all other cultivars tested

It is interesting to note ...

- a) the apparent extreme sensitivity of Shepody to tuber damage. This effect was consistent across the trial replicates and at two test sites. Shepody may be prone to tuber infection as it sets large thin-skinned tubers high in the hill.
- b) while Norland and Peregrine appear to be equally susceptible to damage to the foliage, Norland appears to have more resistant tubers – perhaps reflecting the earlier maturity (thicker skin) of the Norlands.
- c) while Pacific Russet (a SSPGA line) showed moderately resistant foliage, the tubers appeared to be prone to blight damage – this may again be related to the large tuber size and shallow set leading to exposure of the tubers to blight spores washing into the soil. Even after grade out to blight damage, the Pacific Russets were clearly the highest yielding of the Russet lines tested.
- d) the foliage of the new red-skinned cultivar Modoc appeared highly sensitive to blight damage which limited the yield potential of this line in 2010. However, Modoc showed the least tuber damage by blight of any of the red-skinned types tested.



**Figure 1. Canopy vigour four weeks after arrival of Late Blight.**



**Figure 2. Leaf damage for Norland and Alpine Russet three weeks after arrival of Late Blight.**