

## 2018 Executive Summary

Dr. Rob Nurse (Robert.Nurse@agr.gc.ca)

The tomato variety H9074 was used in all trials.

### **Trial 1 – Weed Control and tolerance of processing tomatoes to pethoxamid.**

Pethoxamid a new herbicide and has a group 15 mode of action. Therefore, it's spectrum of weed control and mechanism will be similar to Dual II Magnum. This trial tested this herbicide at application timings of PPI, PRE transplant, and POST (14 days after transplant). Two doses were tested, a proposed label rate and a 2x or overlap rate. Tolerance of processing tomatoes was excellent to pethoxamid. At 7 and 14 days after application (DAA) there was some minor injury <15% when applied POST; however, this injury was transient and was not visible when rated at 28 DAA. The most prominent weeds in the trial were common lambsquarters, barnyardgrass and large crabgrass. Pethoxamid provided the best weed control when applied PPI or PRE for annual grasses, but was poor at all timings on lambsquarters (<60% PPI and PRE and no control POST). This reduction in weed control caused significant yield reductions (almost 75%) when pethoxamid was applied POST.

### **Trial 2 – Weed control and tolerance of processing tomatoes to POST tank-mixes with pethoxamid.**

In this trial pethoxamid was tank-mixed with Sandea, Prism, Pinnacle, Poast Ultra, Venture L or Sencor POST at the 6-8 leaf stage of the tomato. There was some marginal injury observed in some of the treatments that appeared to persist through to the 28DAT, but never exceeded 10%. The most common weed species in this trial were large crabgrass, and common lambsquarters. Control of all species was excellent (>90%) for all weed species across all treatments, except for POST applications of pethoxamid and/or Sandea POST where control was <75%. Marketable yields did not differ among treatments.

### **Trial 3 – Weed control and tolerance of processing tomato to POST tank-mixes with Sandea**

In this trial Sandea was tank-mixed with Sencor, Prism, or Pinnacle and applied POST on the tomatoes at the 6-8 lf stage. There were no injury concerns for any of the treatments tested. The most common broadleaved weeds in this trial were common lambsquarters. POST control of lambsquarters was poor with Sandea alone. Control was improved with all tank-mix partners, with Prism providing the lowest increase in control. Because of the poor lambsquarters control yields were reduced in treatments that contained only Sandea.

### **Trial 4. - Weed control and tolerance of processing tomato to POST tankmixes with Dual II Magnum.**

In this trial Dual II Magnum + Sencor was tank-mixed with Pinnacle, Prism, or Sandea POST at the 6-8 leaf stage of the tomato followed by another application of Dual II Magnum + Sencor at the flowering stage. There were no injury concerns in this trial resulting from any of the treatments that were applied. The most common weed species in this trial were common lambsquarters, and large crabgrass. Control of all species was excellent across all treatments; however, large crabgrass control did decrease to 70% by 56 DAT for the Sandea and Pinnacle treatments. Yields did not differ from the Weed-free control for any of the treatments tested.