

MALEIC HYDRAZIDE FOR POTATO QUALITY AND SPROUT CONTROL

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Maleic hydrazide (MH-30, Chemtura Royal MH-30 XTRA) has been available for potato sprout control for many years (previously Crompton Royal MH-30). This systemic product is applied to actively growing vines in the field during the bulking period and is subsequently translocated to the tubers. Utilizing MH-30 as a sole sprout control method or in combination with CIPC or another sprout inhibitor may be a useful option for the potato industry.

The University of Idaho has evaluated numerous methods and products for sprout control in storage. One study in particular focused on the use of maleic hydrazide. For this study, MH-30 was applied to Russet Burbank by back-pack sprayer, at two rates (1 gal/acre and 1.3 gal/acre in a 30 GPA dilution), four weeks prior to vine-kill (mid-August). Potatoes were harvested two weeks after vine-kill and yield, grade, size distribution, and specific gravity were determined for MH-30 treated and untreated plots. Plot identities were maintained and samples were split to include storage treatments (at 45°F) with and without an application of CIPC in November or a late application in February.

Sprouting characteristics of each treatment were evaluated throughout the storage season, and processing quality attributes (reducing sugar and sucrose content, fry color) were also monitored. For this report, only the 2005-06 storage data is reported, however multiple studies conducted over several years produced similar results. There were no significant differences in yield, grade, or specific gravity with MH-30 treatment compared to the untreated control. Size distribution was also not impacted by MH-30 treatment, however a trend ($p=0.10$) for shift in grade from US#2 to US#1 with an MH-30 treatment in the 6 to 10 ounce size range was seen in the 2006 growing season. This was noted in only one year of this multi-year study.

Evaluating the dormancy length of the treatments in storage showed the untreated control beginning to sprout in mid-March. MH-30 treated tubers remained sprout free for an additional 30 days. Sprout growth in MH-30 treated tubers was significantly retarded for the entire storage period compared to the untreated control (Fig.1). MH-30 treatments were not significantly different from treatments including CIPC until mid-July. Figure 2 shows a visual representation of what the potatoes looked like in July for the various treatments. No differences in reducing sugars were noted except an increase in sugars that was seen when sprouting was initiated.

MH-30 alone could be used for short storage periods without the use of CIPC. MD-30 could be combined with CIPC or other sprout suppressant product for varieties which have a short or medium dormancy length.

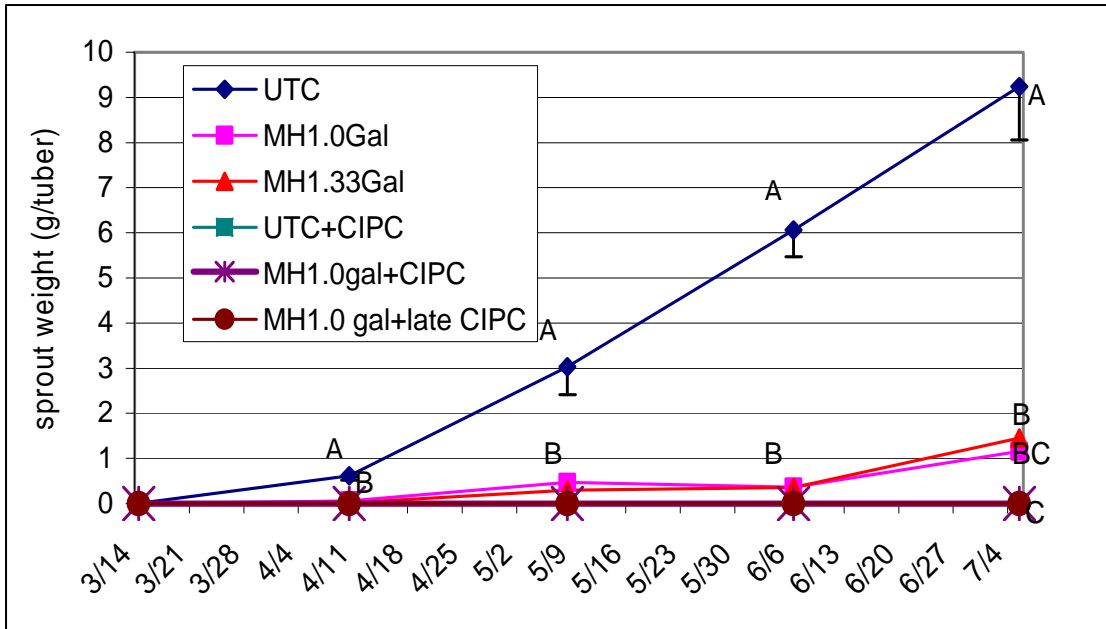


Fig. 1 Sprout weight for Russet Burbank potatoes either not treated, or treated with MH-30, CIPC, or a combination of CIPC and MH-30. Values at the same sampling date with the same letter are not significantly different at $p=0.05$.

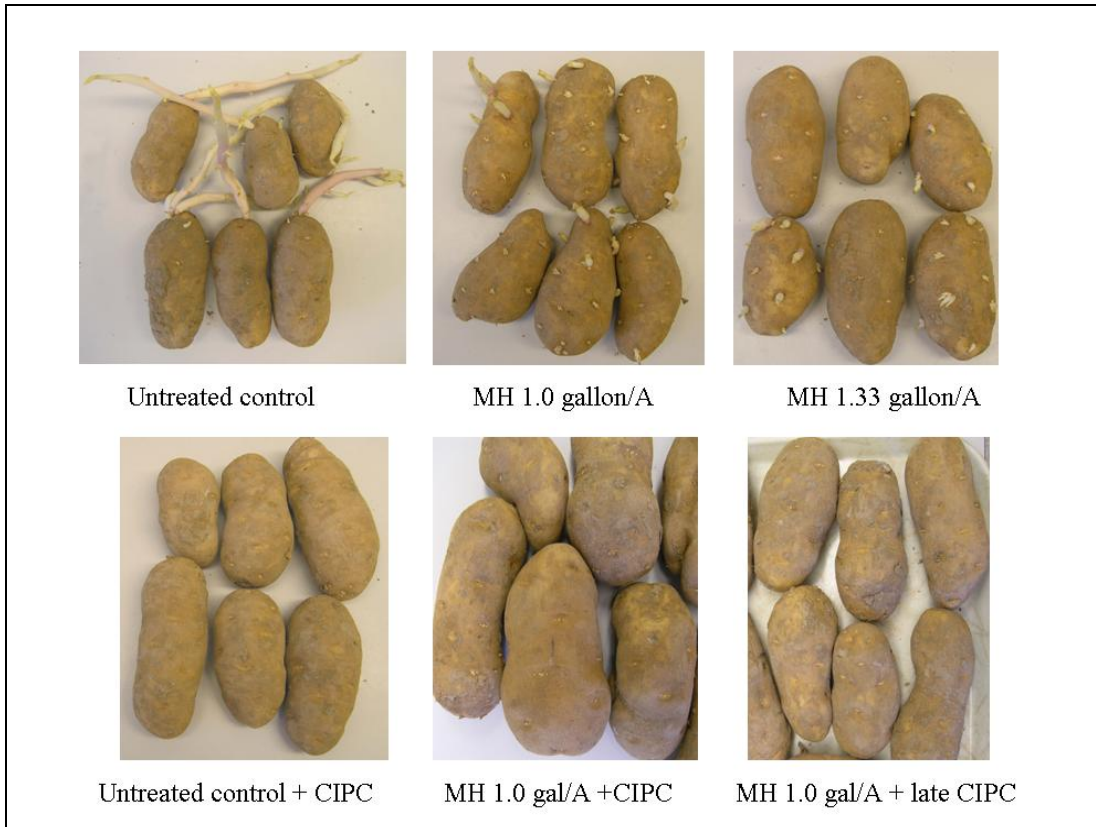


Figure 2. Sprouting characteristics of Russet Burbank in early July after field applications of MH-30 and/or storage applications of CIPC.