

Improved management of blackberry nightshade in processing tomatoes

¹Ian L. Macleod, ²Greg Barnes and ¹Phillip R. Frost

¹Serve-Ag Research, PO Box 690, Devonport 7310, Australia

²Serve-Ag Research, PO Box 615, Shepparton 3629, Australia

Summary Blackberry nightshade (*Solanum nigrum* L.) is a significant cost to processing tomato production. The weed is difficult to control selectively as it is in the Solanaceae family like tomatoes, and currently registered herbicides do not provide effective control of this weed. Due to the lack of effective herbicides, various practices are currently used for control, including hand-weeding, soil fumigation with metham sodium, and post emergence herbicides. These practices are generally expensive, require high labour inputs and often cause damage to the crop.

“Improved management of nightshade in processing tomatoes” is a three-year project aimed at increasing production efficiency in the industry by improving control of blackberry nightshade. Horticulture Australia and the processing tomato industry levy are funding this project, which commenced in October 2000.

In the first two seasons of this project, seven field trials have been conducted in direct seeded and transplanted crops. These trials screened 13 new herbicides for use in processing tomatoes. A number of herbicides provided good results in field trials. Pendimethalin, metolachlor and the experimental herbicides F6285 and BAS516, all showed high crop safety on transplanted tomatoes with effective control of nightshade and other weeds. Clomazone showed some phytotoxicity to transplanted tomatoes, at both sites, at a rate of 1L ha⁻¹.

A number of the herbicides, which have shown high crop safety in transplanted tomatoes, caused crop damage, in the trial in which the tomatoes were sown as seed. Further work with herbicide combinations at reduced rates is required in direct seeded tomato crops.

Crop Protection Approvals Ltd has collated all the residue and crop safety data collected from the trials. A permit application for metolachlor has been submitted to the National Registration Authority and the application for pendimethalin will be submitted once the residue analysis has been completed. Discussions are continuing with Syngenta Crop Protection Pty Ltd and BASF Australia Ltd on the registration of metolachlor and pendimethalin in tomatoes.

Keywords processing tomatoes, blackberry nightshade, *Solanum nigrum*, herbicides, metolachlor, pendimethalin, clomazone.