

## Poinsettia

Project No. PC 71d

# Late-season control of whitefly

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Poinsettia crops can be highly susceptible to infestations of whitefly throughout their production period, but pest outbreaks are especially difficult to treat close to marketing. In the past, poinsettia growers used propoxur smokes for adult whitefly control, but repeated applications tended to induce phytotoxic damage which precluded the use of such programmes on crops close to the marketing period.

Pesticides that control the larval stages of whitefly, such as Applaud (Zeneca Crop Protection) or Nemolt (Fargro Ltd), are now more commonly used in conjunction with an Encarsia bio-control programme. Late-season control of whitefly could still pose a problem, but this may be possible by a single application of propoxur in conjunction with Applaud, thereby reducing the risk of phytotoxic reaction.

Currently, Fumite Propoxur Smoke (propoxur; Hortichem Ltd) has on-label approval for use as a general insecticide in glasshouses on protected chrysanthemums and carnations, with Applaud (buprofezin) approved for use as a moulting inhibitor against whitefly on protected ornamentals. Poinsettia is not a named crop on these product labels, although crop tolerance of Applaud is stated for poinsettia. However, owing to the large number of poinsettia varieties in commercial production, many growers use these pesticides with little information relating to the risks.

The objective of this study was to identify whether or not the potential risk to growers is high (in terms of reduction of crop quality due to phytotoxic effects) when using propoxur smoke in conjunction with Applaud against late-season whitefly infestations.

## Trial details

17 poinsettia varieties were selected to cover the range of leaf and bract colours most commonly grown (Table 1). At the time of treatment on 3 December 1997, all varieties were close to their optimal marketing stage with fully coloured bracts. All varieties were grown using biological control and treated with

plant growth regulators. Varieties 1 to 4 had been sprayed once with Applaud (3 ml/10 litres) 4 weeks before the trial. Varieties 5 to 17 received no pesticide applications.

### Precautions observed during fumigation

- Plants were well watered before treatment.

- Leaf surfaces were dry at the time of fumigation.
- The compartment was maintained at 18°C with RH~80%.
- Fumigation was carried out in the late evening to avoid scorch. Vents were shut overnight, with positive venting early the next day.



General overview of plants in the trial

Variety	Description
1 Lilo	Red bract; dark green leaf
2 Sonora	Red bract; dark green leaf
3 Spotlight	Red bract; mid/dark green leaf
4 Freedom	Red bract; dark green leaf
5 Santa Claus	Red bract; light green leaf
6 Christmas Carol	Red bract; dark green leaf
7 Tabaluga Red	Light red bract; mid green leaf
8 White Christmas	White bract; light green leaf
9 Malibu	Red bract; dark green leaf
10 Monet	Pink & white speckled bract; mid/dark green leaf
11 Highlight White	White bract; mid green leaf
12 Coco Red	Red bract; dark green leaf
13 Maren	Pink bract; mid green leaf
14 Xenia	Red bract; dark green leaf
15 Marble Star	Pink bract with white variegation; mid green leaf
16 2969 (Dummen)	Red bract; dark green leaf
17 457 (Dummen)	Red bract; dark green leaf

Table 1: Poinsettia varieties tested for sensitivity to propoxur/Applaud treatments applied prior to marketing

#### Treatment details:

- Pots spaced at 10 per m<sup>2</sup> were fumigated overnight using Fumite Propoxur Smoke at 1.2 times the label recommended rate: i.e. two '6000 canisters' for the 283 m<sup>3</sup> compartment (enough for 340 m<sup>3</sup>).
- 9 days after the propoxur treatment, pots were sprayed with Applaud (3 ml/10 litres) to run-off.
- Pots were held at 18°C for a further 10 days.
- Assessments of bract and foliage colour/damage and cyathia development were carried out pre-treatments, again immediately before the Applaud spray, with the final assessment 10 days after the Applaud treatment.

## Results

Under the conditions described for the trial, the combination of Fumite Propoxur Smoke and Applaud spray, had no visible deleterious effects on mature poinsettias.

- The observed changes in cyathia development and bract colouration with time were no more than could be expected from naturally ageing plants over the same period.
- The only variety where evidence of bract edge damage was noticed was Highlight White, and in this instance damage was minimal.
- Treated plants didn't appear to deteriorate faster than untreated controls following propoxur/Applaud treatment.



Highlight White: showing maximum extent of observed bract edge damage

## Action points

- On the basis of the available data, application of Fumite Propoxur Smoke followed 9 days later by Applaud spray, at the recommended rates as outlined in this report, has potential as part of a late-season whitefly control programme. The results suggest that there would be little risk of phytotoxic damage over a

range of coloured varieties. Reversal of the treatments (i.e. Applaud before propoxur), or alternative timings of the treatment combination were NOT examined in this trial.

- It is essential to ensure plants are in good condition and well watered, and with prevailing environmental conditions controlled as described above.
- Both Fumite Propoxur Smoke and Applaud are approved for protected

ornamentals, but there is no specific recommendation for use of either product on poinsettia. For this reason, growers using them on poinsettia do so entirely at their own risk. Before using propoxur smoke as part of a late-season whitefly control programme, it is advisable to seek the advice of a qualified crop consultant.