

Short Communication

Combined Spray Schedule for the Control of *Ber* Fruitfly, Fruit Borer and Leafspot Disease

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Ber is an important fruit crop of arid zone. The tree is mostly affected by fruitfly (*Carpomyia vesuviana*), fruit borer (*Meridarches scyroides*) and black leafspot caused by *Prathigada zizyphi* (Veeraraghavatham *et al.*, 1996). Ragumoorthy and Arumugam (1992) applied dichlorvos, monocrotophos, malathion and phosalone for the control of *ber* fruitfly and obtained satisfactory control with dichlorvos (0.1%) and monocrotophos (0.036%). Spraying of carbendazim and mancozeb for the control of black leafspot was reported by Jayasekhar *et al.* (1989). The present experiment was conducted to combine both the insecticides and fungicides for the control of *ber* fruitfly/fruit borer and leafspot disease.

The investigation was carried out at the Regional Research Station, Tamil Nadu Agricultural University, Aruppukottai, during 1991-94. Ten-year-old *ber* trees of cultivar Kaithali which is suited to rainfed condition (Saini *et al.*, 1994) were selected. The trials were laid out in a randomized block design with three replications having two trees in each. Six sprays (first three with insecticides alone and the last three with insecticides and fungicides) were given at

20-day interval. Disease intensity was recorded using 0 to 9 scale and Per cent Disease Index (PDI) was calculated. In case of fruitfly/fruit borer infestation, 100 fruits were collected in each treatment and the percentage of infestation was worked out.

The results revealed that combined application of insecticides and fungicides was found significantly effective in controlling fruitfly/fruit borer and black leafspot disease. Among all the treatments, combined spraying of monocrotophos 0.04% + carbendazim 0.10%, monocrotophos 0.04% + mancozeb 0.20%, endosulphan 0.07% + carbendazim 0.10% and endosulphan 0.07% + mancozeb 0.20% were found to be significantly effective in reducing both fruitfly/fruit borer and black leafspot in *ber* (Table 1).

References

- Jayasekhar, M., Vinayagamurthy, A., Subramanian, S. and Anbu, S. 1989. Control of black leafspot of *ber* (*Ziziphus mauritiana*). *South Indian Horticulture* 37: 344-345.
- Ragumoorthy, K.N. and Arumugam, R. 1992. Chemical control of *ber* fruitfly (*Carpomyia vesuviana* costa). *Indian Journal of Plant Protection* 20: 32-36.

Table 1. Combined spray for the control of fruitfly/fruit borer and black leafspot disease in ber

| Treatment | (%) | Infestation of fruitfly/ fruit borer (%) | | Black leafspot (PDI) | |
|--------------------------------|--------------|---|------------------|-------------------------|------------------|
| | | 1991-92 | 1993-94 | 1991-92 | 1993-94 |
| Monocrotophos | 0.04 | 13.02 (21.15) | 8.00 (16.43) | 60.50 (51.07) | 61.00 (51.41) |
| Endosulphan | 0.07 | 14.08 (22.04) | 10.00 (18.43) | 61.50 (51.68) | 62.50 (52.24) |
| Malathion | 0.05 | 17.38 (24.63) | 21.00 (27.27) | 68.50 (55.87) | 56.00 (48.45) |
| Malathion | 0.10 | 16.48 (23.92) | 24.01 (29.33) | 65.00 (53.76) | 64.50 (53.44) |
| Carbendazim | 0.10 | 24.81 (29.88) | 27.12 (31.31) | 27.00 (31.29) | 39.00 (38.64) |
| Mancozeb | 0.20 | 19.22 (26.01) | 21.00 (27.27) | 40.50 (39.48) | 44.50 (44.71) |
| Monocrotophos + Carbendazim | 0.04 0.10 | 15.73 (23.37) | 9.00 (17.46) | 35.00 (36.27) | 37.50 (37.73) |
| Monocrotophos + Mancozeb | 0.04 0.20 | 14.00 (21.97) | 11.01 (19.37) | 34.00 (35.57) | 41.50 (40.10) |
| Endosulphan + Carbendazim | 0.07 0.10 | 12.62 (20.82) | 10.00 (18.43) | 37.50 (37.76) | 37.00 (37.46) |
| Endosulphan + Mancozeb | 0.07 0.20 | 13.31 (21.41) | 8.00 (16.43) | 42.00 (40.40) | 38.00 (37.98) |
| Malathion + Carbendazim | 0.05 0.10 | 16.38 (23.86) | 22.00 (27.97) | 37.50 (37.58) | 41.00 (39.82) |
| Malathion + Mancozeb | 0.05 0.20 | 17.63 (24.83) | 18.06 (25.10) | 42.50 (40.68) | 44.50 (41.84) |
| Malathion + Carbendazim | 0.10 0.10 | 21.05 (28.72) | 21.22 (27.27) | 31.50 (34.14) | 35.50 (36.55) |
| Malathion + Mancozeb | 0.10 0.20 | 23.08 (28.72) | 20.00 (26.57) | 37.50 (37.76) | 43.50 (41.27) |
| Control | | 43.97 (41.53) | 32.00 (34.45) | 71.50 (58.14) | 60.00 (50.77) |
| C.D. (P=0.05) | | 2.42 | 6.94 | 6.75 | 5.70 |

Figures in parentheses are transformed values.

Saini, R.S., Yamdagni, R., Thareja, R.K. and Kaushik, R.A. 1994. Performance of selected ber cultivars under rainfed conditions. *Annals of Arid Zone* 33: 333-334.

Veeraraghavathatham, D., Jawaharlal, M., Jeeva, S. and Rabindran, R. 1996. *Scientific Fruit Culture*. Suri Associates, Coimbatore, India.