Agrotechnol 2014, 2:4
http://dx.doi.org/10.4172/2168-9881.S1.009

OMICS Group Conferences
Accelerating Scientific Discovery

2nd International Conference on
Agricultural & Horticultural Sciences
Radisson Blu Plaza Hotel, Hyderabad, India February 03-05, 2014

Bio-efficacy and residue dynamics of insecticides against *Plutella xylostella* (L.) in cabbage (*Brassica oleracea var.capitata*)

Anugu Anil Reddy
Acharya N. G. Ranga Agricultural University, India

A field experiment was carried out during *kharif*, 2012 at Student's Farm, College of Agriculture, Rajendranagar, Hyderabad wherein the efficacy of seven insecticides viz., emamectin benzoate 5 SG at 11 g a.i.ha^{-1}, emamectin benzoate 5 SG at 22 g a.i.ha^{-1}, profenophos 50 EC at 500 g a.i.ha^{-1}, profenophos 50 EC at 1000 g a.i.ha^{-1}, spinosad 45 SC at 100 g a.i.ha^{-1}, bifenthrin 10 EC at 100 g a.i.ha^{-1} and Bacillus thuringiensis at 5 WP at 25 g a.i.ha^{-1} were evaluated against Plutella xylostella on cabbage.

The dissipation pattern of profenophos 50 EC (1000 g a.i.ha^{-1}) and bifenthrin 10 EC (100 g a.i.ha^{-1}) was studied collecting samples at regular intervals i.e., 0, 1, 3, 5, 7, 10, 15 and 20 days after last spray and analyzed at AINP on Pesticide Residues, Rajendranagar, Hyderabad to know the dynamics of degradation.

Another set of cabbage samples collected at regular intervals i.e., 0, 5, 10, 15 and 20 days after last spray and analyzed for profenophos and bifenthrin residues after removing top three layers to know the effect of pre harvest risk mitigation method and removal of profenophos and bifenthrin residues by using validated QuEChERS method.

Among all the insecticides, profenophos (1000 g a.i.ha^{-1}) was found to be the most effective one with a maximum reduction in *Plutella xylostella* population (70.20%), followed by bifenthrin 10 EC at 100 g a.i.ha^{-1} (68.18%).

The initial deposits of 0.99 mg kg^{-1} profenophos recorded at 2 hours after last spray dissipated to 0.85, 0.82, 0.16 and 0.07 mg kg^{-1} by 1, 3, 5 and 7 days after last spray, respectively and below determination level (BDL) by 10th day. Based on the dissipation pattern, a safe waiting period of 15 days was recommended taking into consideration of profenophos MRL (0.01 mg kg^{-1}) given by EU.

The initial deposits of 2.24 mg kg^{-1} bifenthrin recorded at 2 hours after last spray dissipated to 1.72, 1.38, 0.82 and 0.23 mg kg^{-1} by 1, 3, 5 and 7 days after last spray, respectively and below determination level (BDL) by 10th day. Based on the dissipation pattern, a safe waiting period of 2 days was recommended taking into consideration of MRL (1.0 mg kg^{-1}) given by EU and 3 days was recommended based on the MRL (0.4 mg kg^{-1}) of CAC.

The data collected on removal of profenophos and bifenthrin residues in cabbage by removing top three leaves indicate that 91.91 % of profenophos residues and 25.90 % of bifenthrin residues can be eliminated easily.

anilreddyento@gmail.com

Effect of biocides on water relations during the vase life of cut gerbera (*Gerbera jamesonii* Bolus ex. Hook.)

M R Bhanusree, N Hariprasad Rao and R Chandra Sekhar
College of Horticulture, India

Biocides in vase solution significantly influenced the water relations associated with water uptake, transpirational loss of water and water balance in cut gerbera (*Gerbera jamisonii* Bolus Ex. Hook.) and extended the vase life and was studied in ambient conditions during the month of March. There were seven treatments i.e., 8-hydroxy quinolone sulphate (200 and 300 ppm), Sodium hypochlorite (10 and 20 ppm), Calcium hypochlorite (25 and 50 ppm) and control. Among the solutions, the flowers held in 8-hydroxy quinolone sulphate 200 ppm in vase solution recorded highest value in water uptake (8.11 g/f), transpirational loss of water (8.29 g/f) and water balance (3.82 g/f) where the flowers held in distilled water (control) were observed with lowest values in water uptake (4.45g/f), transpirational loss of water (5.34 g/f) and water balance (3.31 g/f). The treatment 8-hydroxy quinolone sulphate 200 ppm in vase solution recorded maximum fresh weight of cut gerbera (95 63%) which was on par with calcium hypochlorite25 ppm (94.21%) with better water relations and maximum fresh weight, the treatment 8-hydroxy quinolone sulphate 200 ppm recorded longest vase life of cut gerbera (9.22 days). The flowers held in distilled water (control) recorded the lowest vase life (4.47 days).

bhanusree.horti@gmail.com