



RESEARCH ARTICLE

Seasonal abundance of mustard aphid (*Lipaphis erysimi* Kalt.) on cauliflower (*Brassica oleracea* var. *botrytis*) and its management

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ABSTRACT

The experiment was conducted to study the seasonal abundance of mustard aphid (*Lipaphis erysimi* Kalt.) on cauliflower (*Brassica oleracea* var. *botrytis* Linn.) and its eco-friendly management through insecticides and bio-pesticides. Aphids appeared on cauliflower during 1st week of January, reached its peak (275.12 aphids plant⁻¹ with 100% infestation) during 2nd week of February and continued till end of March. Its abundance and infestation had significant positive association with environmental factors (R=0.928 and 0.909). Increase in humidity increased aphid population and infestation. Aphids were most effectively controlled with imidacloprid @0.01% spray during 2nd week of February. The cost benefit ratio varied from 1:8.98 to 1:67.12 in different insecticidal treatments, the highest in imidacloprid with a record of maximum monetary benefit of Rs.35810.00 closely followed by malathion with its net profit of Rs. 28794.00 ha⁻¹.

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INTRODUCTION

Cauliflower, *Brassica oleracea* var. *botrytis* Linn. is one of the most important cruciferous vegetable crops of India. It is attacked by various insect pests which act as limiting factor in the profitable cultivation of this crop. The important insects include aphid (*Lipaphis erysimi* Kalt.), diamond back moth (*Plutella xylostella* Linn.), cabbage semilooper (*Trichoplusia siani* Hb.) and painted bug (*Bagrada cruciferarum* Linn.) and are distributed throughout the country. The aphid (*L. erysimi*) is emerging as a serious pest of *Brassica* oilseed and cole crops in eastern Uttar Pradesh and other parts of India. This has threatened the cultivation of these crops causing severe damage during *Rabi* season. In places where the production is in large scale, it is dried and preserved for use in the off season. It is imperative to find out the impact of environmental factors on incidence of important insect pests of cauliflower and extent of losses through their desirable suppression with effective and economically insecticides. The

present investigation was undertaken to study the seasonal abundance of aphid on cauliflower and its eco-friendly management through insecticides and bio-pesticides.

MATERIALS AND METHODS

A field experiment was carried out at Vegetable Research Farm of C.S. Azad University of Agriculture and Technology, Kanpur during *Rabi* 2004-05. The meteorological observations (temperature, relative humidity, wind velocity and rainfall) for the crop period were obtained from the Department of Agronomy of the University. The experiment consisted of nine treatments *viz.*, endosulfan 35EC (0.05 and 0.07%), malathion 50EC (0.03 and 0.05%), imidacloprid 17.8SL (0.07 and 0.01%), nimbicidin 1500 ppm (0.75 and 1.00%) and control were assigned in randomized block design with three replications. All the treatments were allocated in each plot in each replication randomly with the help of random number. The seed of cauliflower variety Pusa snow ball-1 was sown on 5