Observation of population fluctuation of citrus whitefly in lemon trees

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Summary

In Pakistan, citrus are grown on an average area of 193.2 thousand hectares with production of 1472.4 thousand tones annually. Several species of insects pests species attack citrus trees among that whitefly, Citrus whiteflies is one of the most important pests of *Citrus* spp., to which it may cause serious damage. Weekly observations intervals were observed through *in situ* plant count as well as water pan traps methods. The *in situ* plant count sampling was also made. Fifty matured branches were observed randomly at weekly intervals during the period March 2009 to September 2010. It is evident from the data that arrival of the whitefly on lemon orchard initiated from 1st March during the time of the study on yellow and green traps with the range of 1.66 and 0.16 per traps respectively. Later, increasing trend in growth was observed of whitefly on pan traps and reached its peak on 24th June. During this period the highest rate of increase went on 76.66, 46.66 and 16.06 for yellow, green and white traps, respectively. Then, capturing abundance started decreasing from 1st July to 26th August. Later on, once again a population on pan traps improved from 1st September to onward. The first population of whitefly in lemon orchard were examined on 1st March and their number increased linearly. A noticeable increase in population levels occurred at the 1st July. A linear regression model for the population fluctuation of whitefly with a slope of line 0.8722X and R-square was 0.96 it indicates that 96% population variation occurred due to date intervals. It decreased and reached its minimum population on 19th August. Linear regression models with a declining curve -1.888X and R-square 0.83. It was estimated from the data that an increasing curve was observed in population from 26th August to onward regression model shows 0.825X and R-square 0.94. It indicated that 94% increase was owing to date intervals. It was concluded that from the results that the seasonal population of the whitefly was highest in month of June through both sampling methods. Data indicate that yellow coloured water pan traps attracted a numerous number of whitefly followed by green and white water pan traps. This basic information will facilitate to growers for pre-cautionary measures for in integrated control programs directed against whitefly on lemon by the use of cultural controls and timed application of selective insecticides.

Key words: lemon, in situ, citrus whitefly, population, fluctuation