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***ORIGINAL ARTICLE***

# The Effect of Border Crops and Physical Barriers on incidence of Chilli Leaf Curl Complex and Associated Insect Populations

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**Abstract**

Chilli Leaf Curl (CLC) possesses a significant biotic threat leading to substantial yield losses in chilli cultivation. Various agents such as thrips, aphids, mites and the viruses transmitted by whiteflies have been identified as contributors to CLC. In order to mitigate this issue, three types of physical barriers were used: an insect-proof net (1 m high) surrounded by three rows of maize crops, an insect-proof net (1 m high) alone, and three rows of maize crops. A control was maintained without a physical barrier. The experiment was laid out as randomized complete block design with three replicates. Identification of pests and diseases, CLC disease incidence and yield attributes were assessed. Results revealed that the treatment with an insect-proof net combined with a maize border exhibited the lowest disease incidence (2±0.45, $p=0.01$) compared to chilli plants with a maize border only. The whitefly population varied across the treatments ($p=0.03$) and with the age of the crop ($p<0.0001$). Among the treatments, the control and insect-proof net exhibited a significantly lower population of whiteflies. Thrips did not show a significant response to the treatments ($p=0.54$) indicating that the presence of physical barriers had no notable effect on thrips counts. Additionally, there was no significant difference in the number of pods per plant ($p=0.74$) and yield per plant across the treatments ($p=0.54$). In conclusion, the use of insect-proof net with a maize border surrounding the chilli cultivation would help to develop integrated pest management strategies to reduce chilli leaf curl incidence as well as whitefly population.

***Keywords:*** *Disease incidence, Insect-proof net, Maize border, Thrips, Whiteflies*

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