

THE POTENTIAL FOR LONG-DISTANCE DISPERSAL OF THE BROWN PLANTHOPPER
(NILAPARVATA LUGENS STAL) IN THE TROPICS

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The abstract only of this paper is given here since it was intended that the paper be a preliminary statement of work still in progress. Publication of the results will be delayed until the completion of the project.

ABSTRACT

Long-distance displacements by windborne brown planthoppers are well documented in temperate but not in tropical latitudes. Trajectory analysis, in which wind direction and speed are used to examine the movements of airborne particles, can be used to simulate the migratory flights of small insects such as brown planthoppers whose air-speeds are less than all but the lightest breezes.

Because wind direction and speed change with height and time, trajectory analyses cannot be attempted unless the insects' time of take-off or landing and the height and duration of their flight are known or can be estimated. Field and laboratory observations suggest that brown planthoppers migrate when sexually immature, take-off at dusk and some continue flying up to 30 hours if the temperature remains above 17°C. Displacements of brown planthoppers in windfields above Asia and Australasia indicate that long distance movements similar to those in temperate regions do occur in the tropics.