A SURVEY OF APHIDS INFESTING POTATOES 
IN THE PLAINS OF WEST BENGA1

H. C. CHAUDHURI

Since the discovery by Schultz and Folsom (14) and Murphy (13) that potato viruses are transmitted by aphids intensive surveys have been made on aphid populations by Davies (6, 7) and Broadbent (3, 4) with a view to obtain some knowledge of the distribution of potato aphids in different areas for growing of certified high-grade seed potatoes. The study of the incidence of these insect vectors for the transmission of viruses, which develop in such a high degree in potatoes, could hardly be over emphasized. The species that has been found to be most closely associated with virus transmission in the potato crop in this country is Myzus persicae Sulz., according to Banerjee and Basu (1). Although the importance of Myzus persicae Sulz., is well known, yet very little attention has been paid to it in India. Consequently very meagre information is available as to the incidence of aphids infesting the potato crop.

The potato growing tracts in the plains of West Bengal lie between 34 feet and 98 feet above mean sea-level. The mean annual rainfall ranges from 56 to 60 inches and the average rainfall and temperature during the potato growing season varies from 1.55 to 2.09 inches and 61.5 ~ to 85.1 ~ F. respectively (Figures 1 and 2).

Of the seed potatoes used in the plains about 30 per cent are usually imported from the hills where they are grown at altitudes of 5,000 feet to 8,000 feet and the rest of the seeds are produced in the plains.

AREA SURVEYED

Although potatoes are grown to a certain extent throughout the country the main bulk of the acreages are concentrated in the districts of Hooghly and Burdwan which contribute 29.3 and 18.9 per cent respectively of the total acreage of the state. In view of the importance of these two districts towards the states' supply of potatoes, a survey was carried out in these two areas where the farmers secure a substantial portion of their seed requirement from the stock grown in the plains. In the district of Hooghly the main centers of study were at Haripal and Tarakeswar whereas in the district of Burdwan these centers were at Kalna, Memari and Burdwan.

MATERIAL AND METHODS

The aphid considered was Myzus persicae Sulz. One hundred fields of potatoes were visited at intervals of 1-2 weeks from the beginning of January to mid-March although the record of the incidence of aphids was made until the end of February. The fields were scattered over the whole areas where the potatoes are largely cultivated.

The distribution of aphids in the potato crop was studied and

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2Special Officer, Potato and Crop Research, Directorate of Agriculture, West Bengal, Calcutta, India.
the number per leaf and per plant was calculated according to the method suggested by Broadbent (4). Counts of aphids were made throughout the season on the Darjeeling red round variety. To obtain a better estimate of the number of aphids per leaf and per plant, one hundred