first monsoon showers in their breeding areas and start feeding voraciously on the seedlings of the crops and chop them off. Roonwal (1945) has studied the seasonal history of this pest at Banaras (Varanasi) but much attention has not been paid to the effect of crowding on the nymphal duration of this pest. Norris (1952) could not find any significant difference in the nymphal duration of *Schistocerca gregaria* Forskal when reared under isolated as well as crowded conditions, but the present writers have recorded a marked effect of crowding on the nymphal duration of *H. nigrorepletus* Bol. The nymphs of *H. nigrorepletus,* when reared collectively, completed their development in a shorter period of time as compared to those reared individually. This behaviour is of vital importance to this pest as it retains a solitary nature throughout its life-cycle.

The experiment on the crowding effect on nymphal duration was carried out with fifty freshly hatched nymphs which were reared at 32° C ± 2° C in each glass jar (15 × 10 cm). At the same temperature only ten hoppers were reared in a glass jar of the same size. Obviously the former batch of hoppers got less space in terms of per hopper space as compared to the latter batch of hoppers. Nymphs reared in crowded conditions took 35 to 45 days; but those reared under isolated conditions took 75·5 to 80·5 days in completing their development. The average nymphal duration under crowded and isolated condition has, therefore, been recorded as 40·0 and 80·0 days respectively.

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Reduction in Oil Content of Yellow Mosaic Infected Soybean Seeds

Like other plants soybean is afflicted with a number of virus diseases which cause disturbances in the host physiology. In the present study, the yellow mosaic disease of soybean, possibly caused by Mung bean yellow mosaic virus, was found to reduce the oil content of seeds in all the varieties tested.

Six varieties of soybean, *viz.,* Bragg, Clark-63, Lee, Amsoy, Picket and Local-2 were selected for oil estimation. For each variety two lots each of 20 seedlings were taken. One lot was treated with white flies (*Bemisia tabaci* Gennadius) fed on diseased soybean leaves. The other lot was left healthy. The plants were kept in insect proof conditions. When plants attained maturity their seeds were collected separately and their oil content estimated, using Soxhlet's method. The data are presented in Table I.

Table I

Oil content in healthy and yellow mosaic infected seeds of different varieties of soybean (data based on oil extracted from 4 g seeds under each treatment)

Varieties	Per cent oil content	
	Healthy	Diseased
Bragg	25·3	17·6
Clark-63	26·1	17·4
Lee	25·5	14·3
Amsoy	25·6	16·6
Picket	25·8	16·0
Local-2	21·4	11·8

The seeds from diseased plants contained less oil than the seeds from healthy plants. The varieties relatively more susceptible to the disease showed more marked reduction in oil content. Lee and Local-2 had maximum reduction while Bragg had least.

Harris *et al.*[1] reported that soybean infected with chlorotic mottle virus (soybean strain) had a reduced oil percentage in the seeds. Demski *et al.*[2] reported that tobacco ring spot virus infection reduced the palmitic, linoleic and linolenic acid proportions of the oil while stearic and oleic acids increased in soybean plants (Cv. Lee).

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