

OBSERVATIONS ON ANOPLOCNEMIS CURVIPES

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Anoplocnemis curvipes is a major pest of cowpea. Field observations indicate that the adult and nymphs feed on cowpea pods by sucking the sap, to result in shrivelled pods. Severely damaged pods shrivel and dry prematurely.

For an effective insect pest control program, it is necessary to have the information on the biology and behaviour of the pest. Since very little information was available, studies were initiated at IITA.

Studies on pest biology indicated that the female laid eggs in longitudinal rows. Each row had on an average about 25 eggs. Adult females laid on an average 120 eggs in their life span. The incubation period was 8-11 days. There were 5 nymphal instars and the nymphal stage lasted for 33 days. The longevity of adult was observed as about 55 days. A rearing technique was developed and it was possible to rear the pest throughout the year.

Behaviour studies of this pest showed that large number of adults were attracted to cowpea plants, mostly after the plants had started flowering. Adults and nymphs generally fed only on the pod and it was not possible to rear the nymphs on any part of the cowpea plant except the pods. It was observed that both nymphs and adult feed and survive well on okra and pigeon peas. A number of wild leguminous and non-leguminous plants were observed as host plants during off season. On these host plants, the insect fed on tender parts of the stem and young pods. Preliminary investigations indicate egg laying preference of A. curvipes on maize (Table 1).

Table 1. Percentage number of plants with Anoplocnemis curvipes egg masses and percentage of the total number of egg masses on each species.

	% of plant with egg masses	% of total number of egg masses
Maize	35.0 a	91.8 a
Cowpea	4.5 b	8.2 b

a.b = Numbers followed by different letters are not significantly different at 5% level. Comparison made vertically.

SUMMARY OF DISCUSSION

The insect pests of cowpeas in Africa can be listed in the order of importance as: pod borer, Maruca testulalis, coreids foliage beetles, storage weevil, leafhoppers and thrips. Insecticide application during pre-flowering plant growth stage is necessary in order to protect the crop from cowpea mosaic virus infestation.

M. testulalis adults probably hide in the bush or neighbouring plants during the day. The adults and larva are active during the night which is important for spraying schedules. Crotalaria juncea planted along with cowpea may reduce the M. testulalis infestation because mortality of larvae on this crop reaches 100%. Cowpea has good inherent ability to compensate for mechanical damage. IITA data show no effect on yield in both leafy and compact varieties due to:

1. Complete flower removal for first 10 days.
2. Removal of half the pods two weeks after flowering.
3. Cutting of all pods in half in the thin green stage.
4. Removal of first six peduncles as they start to flower.
5. Removal of first two or first four trifoliates in the seedling stage.

Problems arise only if:

1. Reproductive structures are removed late in the reproductive period.
2. Photosynthetic production capability is impaired in the reproductive period.
3. Treatments delay onset of pod production in a growing period of restricted length.

SUMMARY

Screening for insect resistance is important, and should continue to have high priority. Techniques for damage evaluation should be standardized. Studies on the biology of the insect pests are essential and will provide information on the best methods of insect pest control. Efforts should continue to find safer and cheaper insecticides.