Strategy for control of bollworm for sustainable sorghum crop under varied regimes of rainfall, temperature and soil fertility

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Introduction

Various environmental factors influence yield of *Sorghum bicolor* (L.) in sub-Sahara Africa. Production conditions of rainfall amount, temperature regimes, soil fertility levels and bollworm (*Helicoverpa armigera* [Hubner.]) density at specific sorghum grain stage were evaluated for effect to sorghum (c.v. Gadam) grain yield. High rainfall amount, temperature and soil fertility were positively correlated to sorghum grain yield at three test sites at Ithookwe, Katumani and Kampi-Mawe of eastern Kenya.

Specific objectives

- To determine influence of biotic and abiotic environmental factors on sorghum yield in eastern Kenya
- To explore right time to spray against bollworm on ripening sorghum grain

Materials and methods

- Established sorghum crop at Kampi-Mawe, Ithookwe and Katumani
- Determined right time to spray against bollworm on ripening sorghum grain
- Compared grain yield under different production conditions

Bollworm larvae on sorghum grain

Results

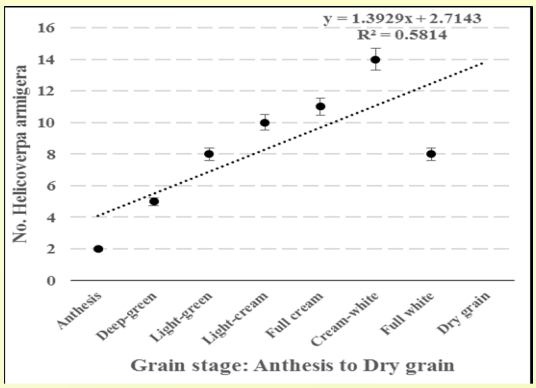

Fig. 1. *Helicoverpa armigera* infestation on sorghum panicle towards full grain ripening stage

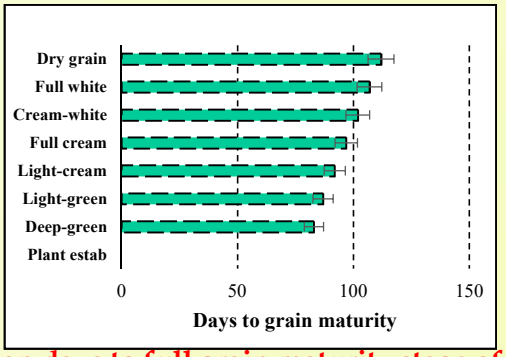

Fig. 2. Mean days to full grain maturity stage of white sorghum crop (c.v. Gadam)

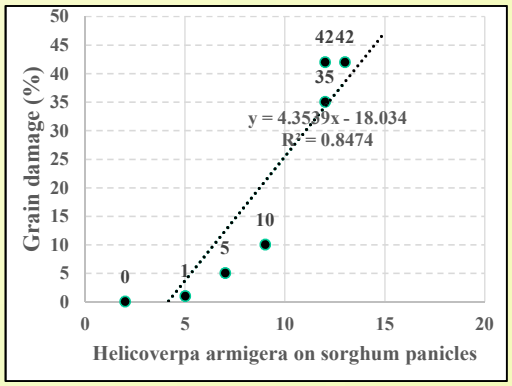

Fig. 3. Damage accumulation towards grain ripening and bollworm increase on panicles of sorghum

Conclusions

- Highest damage occur at hardening stage of grain
- Spray against bollworm at light deep-green stage just before late soft dough stage

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