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PESTS COMMONLY FOUND IN THE COVER CROP *CROTALARIA JUNCEA* MANAGED ORGANICALLY IN SOUTHWESTERN AND NORTHWESTERN PUERTO RICO

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ABSTRACT: In Puerto Rico there is increasing interest in *Crotalaria juncea* as a cover crop for soil improvement, weed and nematode suppression, and seed production. As more area is sown with *Crotalaria juncea*, pests have been appearing in relatively large abundance in this plant. Commonly occurring undesirable animals feeding on leaves, pods and seeds of organically grown *Crotalaria juncea* in Lajas and Isabela, Puerto Rico, include the green iguana (*Iguana iguana*), beetles (species of *Cerotoma* and *Diabrotica*) and the pod borers *Utetheisa bella* and *Utetheisa ornatrix*.

Keywords: *Cerotoma, Diabrotica, Iguana iguana, Utetheisa bella, Utetheisa ornatrix,* organic agriculture

INTRODUCTION

Increasing interest in sustainable and organic crop production in Puerto Rico is resulting in larger and more frequent plantings of cover crops and "green fertilizer" crops. The leguminous species *Crotalaria juncea* is a "green fertilizer" and cover crop with demonstrated capacity to enhance soil properties and to suppress weeds and nematodes; it is becoming a favorite among organic and ecological growers in Puerto Rico. As planted area increases, pests are bound to appear in increasing abundance and diversity. This study was conducted to identify and document pests commonly found in organically managed *Crotalaria juncea* in 2008 and 2009 in plots in Lajas (southwestern Puerto Rico) and Isabela (northwestern Puerto Rico).

MATERIALS AND METHODS

In spring and summer of 2008 and 2009, the authors planted *Crotalaria juncea* in Lajas and Isabela, Puerto Rico. Pest scouting was conducted throughout the *Crotalaria juncea* production season, from emergence to seed collection. Frequently observed pests associated with *Crotalaria juncea* in different stages of the production season were captured and identified.

RESULTS AND DISCUSSION

In Lajas, the apical parts of young plants (<1 month after plant emergence) were eaten by green iguanas (*Iguana iguana*), mainly in the outer rows of the *Crotalaria juncea* plots. Iguanas seemed to prefer the *Crotalaria juncea* accessions 'Tropic Sunn' and 'São Paulo' over other accessions growing in the same location. Minor consumption of *Crotalaria* by iguanas has been reported in Mexico (Lara-López and González-Romero, 2002), but to the best of our knowledge, this is the first time iguanas are reported to consume *Crotalaria* in Puerto Rico.

Beetles of the *Cerotoma* and *Diabrotica* genera were found feeding on the leaves of *Crotalaria juncea* in plots in Lajas and Isabela. The attack occurred during the whole production season, and more abundantly during flowering. These pests were suppressed with application of commercial insecticide

formulations approved for use in organic crops [an extract of neem, *Azadirachta indica* (Trilogy®), and a blend of rosemary oil (*Rosmarinus officinalis*), wintergreen oil (*Gaultheria procumbens*), and mineral oil (Ecotrol®]. *Cerotoma* and *Diabrotica* have been reported to feed on other legumes in Puerto Rico and elsewhere (Hunt et al., 2003; Mangan et al., 1982).

We observed severe infestations of the pod borers *Utetheisa bella* and *Utetheisa ornatrix* in both Lajas and Isabela during the reproductive stage of *Crotalaria*. Young larvae of *Utetheisa* fed on the leaves of *Crotalaria* and later perforated the pods and ate the developing seeds of *Crotalaria juncea*. Unchecked attack of these pests resulted in seed yield loss of approximately 50%. *Utetheisa bella* and *Utetheisa ornatrix* have been considered the same species by some taxonomists, and are reported to occur in North America from Nova Scotia to Florida in the east, as far north as Minnesota and Ontario, as far west as Arizona, and also throughout the Caribbean islands and mainland of the Caribbean basin in Central and South America (Covell, 1984). This genus has been reported as frequent pest of several species of *Crotalaria* as well as in other legumes in Florida (Hall, 2008).

Our observations suggest that iguanas may be a nuisance and cause loss of plants during the first month after plant emergence, and management of beetles may be necessary to reduce pressure on growing *Crotalaria* plants. The most serious pest threat we observed was that of *Utetheisa*, which warrants further research for *Crotalaria juncea* seed production systems.

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