

DISTRIBUTION OF SWEET POTATO WEEVILS IN THE FRENCH WEST INDIES

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Throughout the French West Indies the environment is suitable for the cultivation of sweet potato (*Ipomoea batatas* (L.) Lam.) and this crop is widespread except in the northern dependencies where it is becoming scarce. In fact, in St. Barthelemy it has almost disappeared. The crop is grown only by peasant farmers. The holdings are small and cultural practices are of a poor standard. The greater part of the produce is used for home-consumption. New plantings are established chiefly during the rainy season (June to December). Both vine cuttings and tuber pieces are used as planting material. Harvesting begins four months after planting and continues over a long period, depending on the need for tubers. Very often the vines are left in the field. These root and produce tubers which are harvested two months later.

Since 1962 investigations have been carried out on the distribution of weevils attacking this crop in the French West Indies. The main insect pests found belong to three genera of the Curculionidae, viz : *Euscepes*, *Parisacalles*, and *Cylas*. Taxonomically *Cylas formicarius* (Sub-family Apioninae) is easily distinguished from *Euscepes* and *Parisacalles* both of which belong to the Cryptorhynchinae.

These weevils have similar bionomics. Eggs are deposited on parts of the plant near ground level. The larvae develop in galleries which they bore into the plant. The insects pupate, the adults emerge from the pupae and continue to feed within the larval galleries. As a result the complete life-cycle may be spent within the tuber and the adults are difficult to find outside the plant. *Cylas formicarius* (Fab.) and *Euscepes post-fasciatus* (Fair.) bear functional wings though they rarely use them (4, 5). Species of *Parisacalles* from Guadeloupe are however, apterous. These are transferred to new areas in vine cuttings used as planting material.

EUSCEPES

Euscepes post-fasciatus is of American origin. It has now spread to Tropical Asia and Australasia but has not reached the African continent. It is widespread in the Caribbean islands. There are only two known hosts, viz., *Ipomoea batatas* and *I. pes-caprae*, but further investigation may reveal more. The species is found on cultivated sweet potato in Guadeloupe and Martinique, and the authors have collected it at 60 stations, all at an elevation of less than 200m. In parts of the Windward coast of Guadeloupe where the annual rainfall exceeds 3m, this pest is not found. This confirms Fennah's (1) opinion that the insect is seldom a pest in very wet regions.

Seasonal fluctuations in population density are little understood. Although the insect may be found in all its developmental stages the year around, it seems

that populations are larger during the dry season. The insect is very resistant to adverse conditions and can survive in crop residues.

A second species, *E. porcellus* (Bohem), has been reported as collected by Vitrac in Guadeloupe (2). The present authors were unable to collect any specimens and feel that this record may be erroneous.

PARISACALLES

This genus and the genus *Palaeopus* were described by Faust in 1896 in the same paper. They resemble so closely that it would be desirable to recheck the prototypes.

The genus *Parisacalles* includes three previously known species. Two have been described from Venezuela and *P. guadelupensis* (Hust.) from Guadeloupe. The authors collected the latter at more than 12 stations where the average annual rainfall was below 2m. The insect is sometimes found together with *E. post-fasciatus* in the same tuber. It is likely that this species also develops in wild *Ipomoea* spp. because it is sometimes collected by "sweeping" natural vegetation. The species is not known outside Guadeloupe. In St. Martin the writers collected about 100 individuals of what they consider to be a new species. It differs from the above species by being larger and darker, and having a dorso-ventrally flattened body which is rarely pubescent. A complete description of it will be published elsewhere.

Parisacalles n. sp. is found only in the sweet potato tuber and it is sometimes present with *E. post-fasciatus* and *C. formicarius* in the same tuber. Myers (3) never observed these last two species together in the same tuber.

CYLAS FORMICARIUS

The geographical distribution of *C. formicarius* is extensive, including nearly all tropical regions, Africa and some sub-tropical areas. It is noteworthy, therefore, that this species is not found in the Windward Islands.

The authors did not find it in Guadeloupe or in Martinique but found it on the island of St. Martin. Fennah lists this pest as serious in the Greater Antilles and notes that sporadic outbreaks occur in St. Kitts and Nevis. The host range is small, the main host being sweet potato. However, specimens have been found on wild *Ipomoea* spp. and some closely related plants (Risbec, 5).

DISCUSSION

These surveys of sweet potato weevils in the French West Indies establish the occurrence of *E. post-fasciatus* in this part of the Caribbean and allow us to state precisely their local distribution. The records confirm the occurrence in Guadeloupe of the genus *Parisacalles* which is present in St. Martin as well, though as a seemingly new species. They also establish the occurrence of *Cylas* in St. Martin and confirm its absence from Guadeloupe and Martinique.

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