

# The Impact of Selected Cover Crops on Soil Fertility, Weed and Nematode Suppression Through Farmer Participatory Research by Fairtrade Banana Growers in St. Vincent and the Grenadines

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**Abstract:** Banana farmers in St. Vincent and the Grenadines must urgently adopt alternative strategies to control noxious weeds, nematodes and build soil fertility in order to meet Fairtrade criteria. A potential solution to the control of *Commelina diffusa*, the major weed and nematode hosts is to intercrop the banana with a fast, lowgrowing shade tolerant cover crop. In Researcher-managed trials conducted in St. Vincent and the Grenadines in 2003/2004, three cover crops (*Mucuna pruriens*, *Desmodium heterocarpon* var *ovalifolium* and *Arachis pintoï*) showed promise in suppressing weed infestations, improving soil coverage therefore reducing soil erosion. This project used a Participatory Approach to design, conduct and evaluate the potential of these cover crops. Farmers in partnership with researchers tested several alternative strategies on their farms. The study showed that farmers are capable of designing, conducting and evaluating their own experiments. Farmers and Researchers agreed that the use of cover crops could significantly reduce weed levels and improve weed management of the troublesome weed species *C. diffusa* in banana fields as well as manage nematode levels and enhance soil fertility. The most promising cover crop was *D. heterocarpon* as weed levels were lowest under this treatment. We conclude that eco-friendly pesticide free production solutions can address the problems being faced by small resource banana farmers. Dissemination to other farmers and to the research community in the region was achieved through presentations by the Research team, farmer-to-farmer extension and field days.

**Key words:** Farmer Participatory Research, cover crops, soil fertility, weed and nematode suppression, Fairtrade