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## Quarantine Management on Fruits and Vegetables Eliminating Millipede Infestation Caused by *Spinotarsus caboverdus* (Diplopoda, Odontopygidae)

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### Abstract

The demand for a good quality of native fruits and vegetables with export potential from Santo Antão Island is increasing, due to a developing tourist market. Unfortunately there is a high infestation with the millipede *Spinotarsus caboverdus*. The infestation and damages on fruits and vegetables on the field appear also during the storage period.

The objective of this research is to develop a management for fruits and vegetables against quarantine pest, *Spinotarsus caboverdus* (Pierrard). The effective treatment is necessary for vegetables and fruits, which will be exported from Santo Antão Island to other islands of the archipelago of Cape Verde. We look for the effective treatment, without negative influence on the treated vegetables and fruits, low-cost and without environmental consequences.

All tests were conducted with naturally infested products with millipede. The effect of each treatment on the infestation and the quality of products was observed.

Moderate heat of 40°C and 45°C was used to eliminate live millipedes on fruits and vegetables. Effectiveness of these two temperatures was applied during 18 hours. At 45°C and 18 hours duration the mortality of *S. caboverdus* was 100 %.

In a second way hot water immersion at 40°C and 45°C with duration of 20 minutes was also investigated for lethal effect on millipedes. The mortality of millipedes at 45°C after 20 minutes was 100 % too.

In a third case it was tested an ambient water immersion at 25°C of fruits and vegetables with different time of immersion of 10, 15 and 20 minutes. The objective of using ambient water immersion was to turn out of the millipedes from the products. In results of these test 20 minutes at 25°C are enough to push out 100 % of millipede from the crops.

The investigation shows, that the millipede infestation can be eradicated in the post harvest phase of vegetables.

**Keywords:** Post harvest treatment, *Spinotarsus caboverdus*