Bringing Home the Bacon: Flash-grazing Hogs for Post-harvest Organic Orchard Floor Management

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Introduction

Prior to the industrialization of agriculture, hogs were used for f weed and pest management in fruit orchards. Organic tree fruit growers are rediscovering the benefits hogs bring to their orchards. Our objective was to determine the impacts of post-harvest flash-grazed hogs in cherries, apples, and pears. Post-harvest timing allows grazing in accordance with GAP and NOP standards.

We expected hogs to reduce:
- Left over fruit on the orchard floor
- Pest insect and diseases harbored by left over fruit
- Weeds

Methods

We conducted the study in organic cherry, pear, and apple orchards in Leelanau Co., MI. There were six grazed and six ungrazed plots in the cherries and pears, and three grazed and three ungrazed in the apples. Plots (paddocks) were 24.7 x 24.7 m (81'), 0.06 ha (0.15 acre).

Hog plots were fenced with electric polyrope, 1.22 m (48") step-in fencing, and raised on pasture until post-harvest. Their diet was consuming grasses and weeds; the pattern of impact is consistent across orchard types(Fig.3,5,7). Hogs significantly increased the amount of bare ground and significantly decreased grass. In control plots, forbs increased and grass decreased.

Grazing hogs is an effective strategy to remove all leftover fruit on the ground in cherry, pear and apple orchards post-harvest(Fig. 4,6,8).

Hogs greatly impact the ground cover in orchards by rooting and consuming grasses and weeds; the pattern of impact is consistent across orchard types(Fig.3,5,7).

Post-harvest grazing of hogs has the potential to suppress codling moth and oriental fruit moth populations in apples and pears.

The 160 lb hog size may only be appropriate for older well established orchards with large trees due to the intensity of rooting (Fig.9&10).

Conclusions

- An average of 61 non-pest beetles(all life stages) was found in fruit from all plots before hogs, and no insects were found in dried fruit from control plots after hogs. The beetles were common staphylinid and dermestid detritivores.

- An average of 4 Oriental Fruit Moth and 1 Codling Moth were found in fruit from all plots before hogs, and an average of 3 GFM and no CM were found in fruit from control plots after hogs. Staphylinid and dermestid beetles were also found in all plots at similar levels found in cherries.

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