

## **Objectives & Rationale**

The use of shade netting in apple orchards is becoming common place. The effects on the pest and disease complex in covered orchards are poorly understood. This study is aimed at determining the effects of shade netting on the pest and disease complex. In addition, aspects such as soil health and orchard floor management practices will be assess where possible.

## **Methods**

Orchard A23 on Oak Valley Estate in Elgin was selected for the purpose. The orchard is fully enclosed with 20% white shade cloth. The orchard is 2.45 ha in extent and is planted to Granny Smith on a range of rootstocks (CG 222, M7, M9, M109). The orchard was planted in 2012 and extended in 2013. The orchard is contiguous and no untreated (trees without nets) area is available for comparative purposes.

Standard pest and disease monitoring protocols will be followed in the orchard. Pre-harvest fruit damage assessments will be carried out by inspecting 10 fruit per tree on 25 trees per block. In addition on farm monitoring data will be collected. Additional soil sampling will be conducted where possible according to standard protocols.

## **Key Results**

Pest monitoring data indicates the orchard remains codling moth free, woolly apple aphid and banded fruit weevil appear to be an increasing problem. A geometrid moth, *Cleora tulbaghata* has been “captured” in the orchard and causes extensive leaf and shot damage.

Fruit damage assessments indicate that woolly apple aphid and banded fruit weevil are problematic in the orchard despite routine control measures being applied. Soil sampling to determine the nematode populations and the status of soil health indicate that the soils remain disturbed and unbalanced. In addition, root lesion nematode species are increasing both in the tree and work row.

## **Conclusion/Discussion**

Pest and disease monitoring should continue in the orchard. The project should be extended to assess the effects of shade netting on orchard floor management including cover crops in additional orchards.