Growing Organic Apples In High Tunnels Chris McGuire | twoonionfarm@gmail.com

Based on promising results seen with other fruit crops, we think that growing apples in high tunnels may reduce disease (by keeping foliage dry) and improve overall plant vigor and yield.

We established plantings in two tunnels in spring 2019.

We are growing seven varieties : Ashmead's Kernal, Golden Russet, Grimes Golden, Hudson's Golden Gem, Macoun, Suncrisp, Winecrisp.

Trees spaced 3' apart within row and trained in tall spindle method. Rows are 11-12 feet apart (3 rows in a 34' wide tunnel; 2 rows in a 24' wide tunnel). Height of the plastic above the trees is 9-15', about 10' in most spots. Tractor can drive between the rows for spraying.

Drip irrigation installed.

Ground inside the tunnels completely covered with bark mulch.

Using Klerks KoolLite Plus plastic to keep temps cooler and reduce chance of sunburn on fruit

Not good to keep trees in sunny high tunnel during winter – daily temperature fluctuations will damage tree – we uncovered tunnel during winter 2019-2020 and in future winters we will uncover or add an extra layer of opaque silage tarp over the tunnel.

We have introduced bumbleebee hives from Koppert during bloom for pollination – worked well in 2020

Some frost damage to flowers in May 2020 on a night when there was not frost damage in outside orchard – may need supplemental heat or other frost protection.

No significant disease problems seen yet.

Insect pests seen:

- Some leaf damage from leafrollers and other caterpillars, easily controlled with Bt or spinosad.
- Damage from potato leafhopper, aphids, spider mites. Effective spray controls are Azaguard+1 % oil (PLH), 1% oil (spider mites), and safer soap (aphids)
- Light plum curculio damage – made two sprays of Pyganic during oviposition season on warm evenings
- No codling moth seen yet
- Japanese beetle damage seems light

Vegetative vigor is high. Have worked to contain it by tieing down branches aggressively and fruiting trees in second year. Also notched leaders in spring to promote branching and to reduce blind wood.

Current data from the project online at: https://projects.sare.org/sare_project/fnc20-1238. Final results will be posted on that site and at www.twoonionfarm.com

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