

Workshop Title: Season Extension with High tunnels

Speakers & their titles: Paul and Sandy Arnold, Pleasant Valley Farm (NY)

Executive Summary

In this session Paul and Sandy Arnold discuss their management practices of high tunnels for early and late season production as well as over the winter. They started with one high tunnel, but seeing the pay-off quickly increased the number. High tunnels can allow for excellent production throughout the year; however, they require more management and infrastructure, and call on the grower to be an excellent marketer and record-keeper.

Detailed Notes

The Arnolds began experimenting with high tunnels in 2006. They built their first themselves over a season but switched to hired labour for the next two. Slides 3-15 address construction and management considerations. The slideshow presentation then elaborates on seeding, transplanting and harvesting dates for spring, summer, and winter crops. The use of floating row-covers, BioTello, and straw mulch are essential for weed and disease control within high-tunnels.

When using a high tunnel system you should map for efficiency to ensure all space is used to its maximum potential. The pay-off for tunnels is in the details: strategic seeding and transplanting and managing for optimal use of space. During the winter, maintenance, weeding, watering and constant observation for disease is still important.

The Arnolds then discussed how they track growing and harvesting quality of various crops using detailed records and a colour-coded rating system for colour and growth quality and disease resistance. They have recently been experimenting with Salanova lettuce varieties, discussed on slides 64-67, and lead the audience through a discussion of how they run their trials and what they look for in terms of quality and harvestability.

Venting, keeping row-covers dry and plant spacing is critical for disease prevention during the winter. If disease arises they consult the toolbox of organic certified sprays to limit damage. Crops need to be continually monitored for pests, sometimes adding beneficial insects such as ladybugs to deal with aphid issues.

A detailed information gathering weather system is essential to the Arnolds high tunnel management system and record keeping. They use a wireless system with three stations and many data-loggers to capture temperature information. The information from the weather system is relayed back to the house and accessed via remote to ensure consistent monitoring and to capitalize on windows for harvest time throughout the winter. Slides 80-84 show some of the temperature data collected in the tunnels

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beneath rows covers and how this information leads to better management techniques.

On slides 85-91 the Arnolds discussed winter harvest considerations including harvesting times and processing/storage requirements of leafy brassica and lettuce crops. The Arnolds then discussed their success with winter harvest yields and how that translates into financial success at winter farmers' markets. During the 08/09 winter season the high tunnels increased weekly sales by \$1200 and in 2010/2011 winter season \$1630. The 2011/2012 season saw gross sales of \$50,000 for 6 crops (greens, kale, spinach, chard, arugula, salad mix).

In summary they concluded that high tunnels are a large investment initially (\$20,000-\$30,000) but have a fast payback if managed effectively. These structures allow for high production with low labour, but do require more management and draw on more marketing skills to move a diversity of crops to market in early and late season, as well as through the winter.