

TIMELY INFORMATION

Agriculture & Natural Resources

High Tunnel Vegetable Production

High tunnels are unheated, plastic-covered, solar greenhouses. Ventilation is passive through roll-up or down side walls or curtains. Crops are grown in native soil under the high tunnel. The high tunnel protects the growing crop from environmental extremes such as wind, hail, rainfall, insects and diseases which allows for significantly earlier and higher marketable yields.

Vegetables are the main crops grown in high tunnels around the world. The primary vegetable crops for high tunnel production, in order of importance, are tomato, sweet pepper, cucumber, muskmelon, lettuce, summer squash, and eggplant. In Alabama, most high tunnels will be used by growers to gain the market advantage of having locally grown fruits and vegetables available for sale at a time when traditionally grown crops are not yet ready for harvest or traditional field production is completed.



While tomatoes are the most popular and potentially the most profitable crop grown in high tunnels, they should not be replanted without rotating to a crop from a different family. Growing the same crop in successive years can lead to an increase in disease, insect and weed pressure. Crop rotation is used to break the cycle of the diseases and insects associated with specific crops. There are several choices of crops in different families that can be grown in a rotation so that long term vegetable production in the high tunnel can be sustainable. Different vegetables, small fruits, and flowers are all suited to these growing systems, and can be used in rotation; but the specific crops which might be grown will, to a large extent, depend on marketing opportunities for individual crops by individual growers.

Crops in the Solonaceous family, such as tomatoes or peppers, can be followed the second year with cucurbit crops like cucumbers, squash, cantaloupes and specialty melons. There is a strong demand for early-season melons, and many specialty melons are becoming increasingly popular with consumers. Specialty melons include casaba melons, Canary melons, crenshaw melons, honeydews and Galia melons. Galia melons are light-green-fleshed cantaloupes with no sutures. Galia melons are adapted to warm, dry climates that make them

particularly suitable to high tunnel production. Other annual crops that could work well in a third year of rotation are strawberries, cut flowers, and herbs.

Also in Alabama, there can be other crops produced in high tunnels that are specifically in demand in our region. An example of such a crop is okra. Increased soil temperature in a high tunnel situation allows for an earlier harvest and thus a premium price on the local market. Greens and lettuce can be produced in certain parts of Alabama throughout the winter months when a high tunnel is used to moderate the environment.

All of these crops should produce faster, higher quality yields in high tunnels because of moderated temperatures and protection from harsh environmental conditions. However, growers using high tunnels may notice increased insect and mite pressure due to the lack of rainfall coming in contact with the crops.

When growing melons in high tunnels, special attention must be paid to pollination. This is especially true with all the cucurbit crops which require insect pollination. Usually, proper timing of the raising and opening of side curtains and end walls will allow pollinating insects access to the crops. However, additional bee hives may be needed if there is not enough bee activity when the crops are flowering.

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