

IPCs prove to be game-changer in citrus production

By Amir Rezazadeh

Citrus trees face many threats that can impact fruit development and overall tree health. Pests, including aphids, mites and other insects, can damage fruit and transmit diseases. Extreme weather events, such as hailstorms or heavy rains, can cause physical harm, leading to blemishes and reduced market value.

In addition, citrus growers have faced persistent challenges because of bacterial diseases like citrus canker and citrus greening. These diseases not only hurt fruit quality but also create a potential risk to the long-term viability of the citrus industry.

Planting new citrus trees to replace those that became unproductive is crucial in Florida because of the endemic presence of huanglongbing (HLB) and its vector, the Asian citrus psyllid (ACP). Because *Candidatus Liberibacter asiaticus*, the bacteria linked to HLB, is already present in infected trees, the primary objective in mature trees is to maintain fruit production. Young trees, on the other hand, are HLB-free when planted, so the focus shifts to keeping them healthy and disease-free for as long as possible, or at least until they start producing fruit. Insecticides with diverse modes of action are typically used in a rotational strategy. Soil drenches of systemic insecticides are used to control ACP infestations in young trees.

MULTIPLE ADVANTAGES

Individual protective covers (IPCs) have evolved as an innovative option to ensure fruit protection during development and maturation. These innovative screens protect citrus from the elements, resulting in healthier and more colorful fruits that have a better flavor.

IPCs are typically made from specialized materials that allow sunlight, air and rain to pass through while creating a barrier against potential threats. The primary advantages of IPCs include:

- 1. Pest Resistance:** One of the most significant advantages of IPCs is the physical barrier they create against pests. Insects such as aphids and thrips are notorious for destroying citrus trees, transmitting diseases and causing unsightly blemishes. With protective screens in place, these tiny invaders are thwarted, reducing the need for chemical pesticides and promoting an eco-friendlier growing environment.
- 2. Weather Resilience:** Screens offer reliable protection against hail, heavy rainfall and other extreme weather conditions. Less physical damage to the fruit means growers can expect a higher yield of marketable fruit and reduced economic losses.
- 3. Disease Prevention:** The screens can play a crucial role in preventing diseases that are spread by wind-borne pathogens or insects. Blocking the entry of these carriers effectively reduces the incidence of infections and leads to healthier trees and higher-quality fruit.
- 4. Bird and Animal Deterrence:** Citrus trees and fruit can be destroyed by animals and birds, leading to significant losses. Protective screens keep these unwanted visitors off the fruit, which helps maintain higher yields and better-quality produce.
- 5. Enhanced Growth Conditions:** The microclimate created by IPCs can provide a controlled environment that promotes



healthier growth. Reduced wind stress and moderated temperatures can lead to more robust trees and better fruit development.

6. Organic Cultivation: With an emphasis on sustainable and organic farming practices, IPCs offer an effective solution to reduce chemical inputs and reliance on conventional pest control methods.

KEY FEATURES AND SETUP

IPCs come in a wide range of shapes and sizes. The average adult psyllid is 0.57 millimeters wide. IPCs are made of monofilament high-density polyethylene or polyvinyl with a mesh size of 50 (50 holes per linear inch). This size is tiny enough to keep psyllids off the trees.

IPCs can range from 3 to 8 feet. A PVC pole with or without spreaders will need to be used with the net depending on the IPC's height. The net covers are either tucked into the tree wraps and fixed or they are secured outside the wraps and fastened tightly to the trunk and PVC pole using zip ties right below the graft union.

It is possible to set up IPCs on tree blocks or in resets. In mature groves, where the frequency of HLB is often higher and the risk of infection is greatest, IPCs are especially useful for planting reset trees in gaps created by dead or destroyed trees. IPCs should be installed immediately after trees are planted to protect them from psyllid infestation. While psyllid control can be minimized or eliminated, tree care can continue as usual. However, it is important to keep looking for signs of pests and diseases.

The length of time that IPCs can remain on trees is contingent on several factors, including rootstock/scion combination, grove management, tree

age and cover size. Fast-growing trees on vigorous rootstocks or with vigorous scions can benefit from the availability of IPCs in a range of sizes since smaller screens can be swapped for bigger ones as the trees grow. It's time to upgrade to a larger IPC when the canopy has filled the bag (after about two years). Alternatively, you can choose to ditch the screens for good at that point.

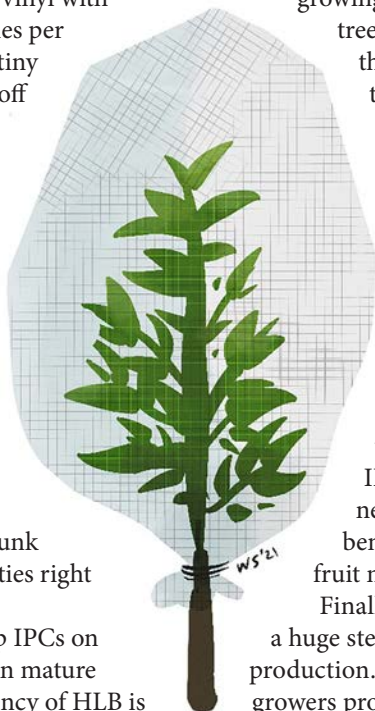
SUMMARY

IPCs have proven to be a game-changer in citrus production. These screens contribute to a more sustainable and environmentally responsible method of farming by reducing pests and optimizing the growing conditions for citrus trees. IPCs also improve the quality and production of citrus trees.

Growers using IPCs have reported considerable gains, including higher crop yields, higher quality fruit and less need for chemical pesticides. The citrus industry stands to benefit greatly from this innovation. As IPCs gain popularity, new quality and safety benchmarks for citrus fruit may be established.

Finally, the use of IPCs is a huge step forward for citrus production. These covers help growers protect their citrus trees from diseases, pests and environmental stresses, resulting in better-quality fruit for consumers. IPCs are a pioneering illustration of how technology can be used to conserve our crops at a time when the world is searching for innovative and sustainable solutions to ensure food security. 🍊

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