

Windbreaks Can Drive Profit?

By Pete Spyke

The following two points are offered as food for thought. The overall idea is that windbreaks can actually be beneficial for a number of reasons, and may not cause reductions in profitability if they are thoughtfully designed.

I. Windbreaks as a Component of High-Value Agricultural Landscapes

As we look forward to the future in Florida's rapidly urbanizing culture, the concept of values in addition to the crops we produce becomes one of the driving reasons for retention of agriculture as a permanent landscape component. Eventually, production of commodity-type agricultural crops, such as oranges for juice, may become more cost-effective in developing countries with lower land and labor costs. If this proves to be the case, a shift in objectives will be necessary for agriculture to be viable in the long term (forever?) in Florida when combined with viable Transfer of Development Rights programs.

If crop production is no longer the primary objective, the other values that agriculture can provide must become important economically. These values will need to be desirable to urban dwellers, and have sufficient certainty that business plans can be developed with a high degree of confidence.

More than likely, agriculture will evolve towards a scale that maximizes diversity of these values since as they are "stacked", the economic benefit increases. Therefore, values such as attractive vistas, recreational opportunities, ecotourism, active (rather than passive) mitigation of urban and historical agricultural environmental impacts (such as stormwater treatment and attenuation), enhanced biodiversity, migratory and native species habitat, carbon sequestration to combat global warming, energy production from crops and byproducts, and food security could become as important as the crops themselves.

The most noticeable trend will be modifications in the design of agricultural landscapes. Farm fields will be laid out to achieve as many values as possible along with accommodating crop production. The design of the landscape will, in and of itself, provide additional values that can be "marketed".

One example of this direction is the concept of "conservation buffers", where farm fields are separated by areas that are engineered and designed to provide a number of different values. These buffers are broken down into "zones", including a border area adjacent to the cropped land, a transition area with species that can thrive in fluctuating hydroperiods, and a core area with wetland species and hardwoods. The buffers are engineered to treat and attenuate stormwater during the rainy season, allow timber harvest, provide wildlife habitat, and achieve other benefits. Economic value is derived from cost-sharing for establishment and maintenance, timber harvest, recreational

opportunities, tax breaks, and other sources. Also, in some Transferable Development Rights programs in Florida, additional Development Credits are granted for environmental restoration, so properly-designed buffers could improve land value as well.

In our case, they could also serve as windbreaks. Therefore, these conservation buffers, or similarly-designed areas, can achieve value “stacking”, of which only one is mitigation of the effects of wind on spread of citrus canker.

Therefore, the design of a citrus grove of the future may deliberately forego a fencerow to fencerow planting strategy in favor of a layout that accomplishes a multi-faceted economic plan through achievement of as many values as possible. The marketing program for the farm as a whole will reflect the demand for, or desirability of, these values by the surrounding urban populations. This will shift agriculture, including citrus, from a global commodity-type industry to a more intimate local scale, with resulting economic stability and strength.

Windbreaks can become part of the new “standard design” for a citrus grove. Rather than being single-purpose, such as for reduction of citrus canker spread that theoretically results in loss of productive land and increased crop production costs, they can be incorporated into a design that is based as much or more on values than crop yields in an effort to realize a more profitable future.

II. Windbreak and Canker Protection Could Improve the Economics of Fresh Fruit Production

Currently, fresh fruit economics are heavily related to packout percentages. A slight reduction in packout can have a very large impact on net on-tree crop values since production and harvesting costs are more heavily offset by the returns from the high-value markets.

Windscar is one of the most significant causes of off-grade fruit, especially when spray programs effectively control other blemish-causing factors such as fungal diseases, insects, and mites. Effective windbreaks should obviously reduce windscar. However, personal observations have been that the trees growing in the partial shade of windbreaks seem to produce smaller crops of larger fruit with excellent general peel appearance – much as the way that “inside fruit” has higher quality and larger size than fruit produced on the periphery of the tree. Plus, windbreaks could also provide other benefits that are yet to be described.

Therefore, while windbreaks occupy land that could otherwise be used for crop production (the discussion on other values notwithstanding), the increase in packout may actually offset the loss of total boxes produced. Also, the additional sprays that will need to be applied to reduce citrus canker inoculum and fruit infection should provide better control of PFD, Citrus Scab, Melanose, Greasy Spot, Rust Mites, Leaf Miners, and postharvest disorders such as Brown Rot and Stem-End Rot. When combined with the

reduction of windscar from windbreaks, it is conceivable that the packout percentages that have been steadily slipping over the past may improve dramatically.

Assuming that citrus canker can be controlled at levels that allow continued production of commercial quality fruit, the end result may very well be that the increase in packout may be greater than the decrease in land area available for crop production as a result of the need for windbreaks, and the resulting economic value may offset the additional cost of windbreak establishment and additional production practices necessary to deal with an endemic citrus canker situation.