Hoof house horticulture creates many benefits

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As we anticipate the start of another growing season, it is a good time to revisit the many benefits associated with hoop house crop production, including some that are under-appreciated.

Season extension is generally regarded by both growers and researchers as the single greatest benefit of growing in hoop houses. When properly managed, hoop houses are capable of extending the growing season for frost-sensitive crops by as much as 60 days; 30 days on the front end and 30 days on the back end of the growing season. All things being equal, this is equivalent to moving your farming operation 400 miles to the south. Cool-season crops such as leafy greens also benefit from the growth-enhancing characteristics of hoop houses. In the Southern Great Plains, marketable yields of greens can be maintained through the winter months.

The marketing advantage associated with extended season production can be significant. A universal law of economics is supply and demand. When demand is high and supply is low, prices are high. The hoop house production system enables production and marketing of specialty crops during times of limited supply. Hoop house growers also have a competitive advantage over traditional growers because they can arrive at the market earlier and stay later in the year. Consumers tend to do more business with growers they can depend on.

Field-produced crops are susceptible to a myriad of extreme weather conditions common to the Southern Great Plains. Hoop houses shield crops from small hail, excessive rain and wind, all of which can reduce crop yield and quality. Hoop houses also enable the grower to maintain a more ideal growing temperature over an extended period of time. With a reduction in temperature-related stress, increases in fruit set, fruit size and product shelf life can be expected. Sunburn on fruit, a common occurrence in the field, is less of a problem in a hoop house due to the use of light-diffusing film and shade cloth. Petal scarring, a common occurrence in field-grown cut flowers caused by wind abrasion, can be held to a minimum in the sheltered confines of a hoop house.
The modified growing environment of a hoop house enables production of commonly grown crops in novel ways. Take onion and raspberry, for example. In Oklahoma, a bulb onion crop is typically established using purchased transplants. If the onion plants are exposed to a prolonged cold spell during the late winter prior to digging, they could be prone to bolting once transplanted. When grown in a hoop house, the transplant onion crop can be protected from fluctuations in temperature with the use of floating row covers. Quality raspberries are difficult to grow in Texoma due to high temperatures. Using hoop houses to force floricanie fruiting varieties for early summer harvest and primocane varieties for late fall harvest is a novel approach to growing raspberries in warm climates.

As most experienced gardeners can attest, planting often does not occur in the field as scheduled. Unfavorable soil and air temperatures, and wet conditions play havoc with crop scheduling. Because a hoop house allows you to exercise greater control over the growing environment, it is much easier to adhere to scheduled planting dates.

Disease pressure is reduced in a hoop house. For a disease to develop, three factors must be present: a susceptible host, a pathogen and a favorable environment. For most plant pathogens, such as fungi, the favorable environment is free moisture present on foliage and stems, and excess moisture in the soil. The hoop house cover acts as an umbrella to shield plants from the rain, thus making the environment less suitable for disease development. Early blight, a common disease of field-grown tomato and pepper, is seldom a problem in a well-managed hoop house.

The use of pesticides can be reduced in a hoop house by installing screening to the sides of the structure beneath the roll-up vent curtains. This creates a barrier to large-bodied insect pests and depredation by birds and small mammals. Shade fabric is a good choice for a screening material and can also be used as a windbreak.

One of the most under-appreciated benefits of hoop house culture is the creation of a more favorable work and marketing experience. No one enjoys picking produce in the mud and/or rain. Give your workers and “U-pick” customers the opportunity to come inside out of the elements. They will thank you in the form of repeat business. Many customers are willing to pay more for a good experience.

Speaking of marketing, don’t discount the U-pick sensory experience made possible when certain fruit and flower crops are maturing within the confines of a hoop house. The smell of ripening melons in a hoop house during the morning hours can’t be duplicated in the field and can be used as a draw by the grower.

Growers contemplating investing in a hoop house production system should consider the many benefits associated with this technology. While season extension remains chief among benefits, there are plenty of additional benefits one can use to justify hoop house production.