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Movable High Tunnels Advantages

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By Mike Bollinger and Katie Prochaska

The idea behind incorporating high tunnels into the farming system is that it allows the farmer to have an earlier start, a later finish, and utilize extra warmth for high dollar crops like tomatoes, peppers, melons, cucumbers, and eggplant.

Standard (nonmobile) High Tunnel

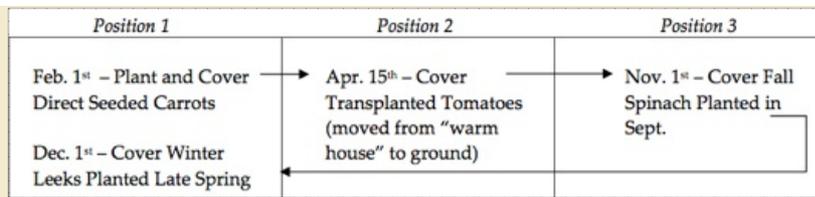
In our climate zone in northern Illinois, the earliest farmers are able to put a warm season crop like tomatoes in their high tunnels is April 15. On the 15th of April a farmer takes their 6 week old tomatoes that they started in a different (heated) high tunnel and transplants them into the house where the tomatoes will grow for the remainder of the season. These plants will stay in the ground throughout the summer. In Illinois, we would be able to keep these tomato plants producing fruit until around the first or second week in November. Using a high tunnel we have planted our tomatoes nearly 11/2 months earlier than if we put them in the ground uncovered. This enables us to pick our first fruit considerably earlier than someone without a house. The price shift for a crop like tomatoes is significant. At our farmers' markets in Chicago we are able to sell our tomatoes for \$5.00/lb. until outdoor tomatoes are available and then the price drops to about \$3.50/lb. On the back side of the season we see the same shift. As the temperatures drop in early October and outdoor tomatoes plants cease to produce fruit, we still have tomatoes in the high tunnels until around the second week in November when the price shifts again to somewhere near \$5.00/lb.

Movable High Tunnel

With a mobile high tunnel we are able to take the added benefit of season extension described above and apply it to numerous crops throughout one growing season.

Using a standard high tunnel we don't have enough time prior to April 15th to plant and harvest a full crop because the light is limited and the temperature is too cold to grow anything to size in early spring. The same limitation is seen on the back side of the calendar from mid November on. With a stationary high tunnel, only one crop gets the benefit of season extension.

The beauty of the movable high tunnel use is that we are able to circumvent the standard issues. The diagram below describes an example of a tunnel that has three positions and will be moved three times in one season in a Zone 5 climate.



On the 1st of February we start with our movable house in position one. We prepare the beds inside for planting and put our carrot seeds directly in the ground. We have just planted carrots nearly 2 1/2 months before we would be able to plant them outdoors (because the ground is still frozen and snow covered). The carrots will stay under the high tunnel until the 1st of April, at which time we slide the house to position two. On the 15th of April, just as with the standard house, we put our tomato transplants in the ground, covered by the high tunnel. At this point it is just warm enough for the carrots to be outdoors and just warm enough for the tomatoes to be indoors.

Around the 1st of September, the growing area in position three opens up. We prepare the beds and plant spinach seeds directly in the ground. This spinach will grow outdoors until mid November. At this point the spinach leaves are full and are ready to be harvested over the coming weeks. This is the perfect time to move the house. The tomatoes are on the verge of not producing any more fruit, and it is just about too cold for the spinach to be outdoors. Spinach will be harvested over the next month and around

December 1st we move the high tunnel back to position one. Following the carrot harvest back in the spring from position one, we transplanted winter leeks and let them grow all season. By now the leeks are no longer growing, so we are using the high tunnel like a big warming oven to protect the leeks for continued harvest throughout the winter.

Summary

With a movable system we have several significant things:

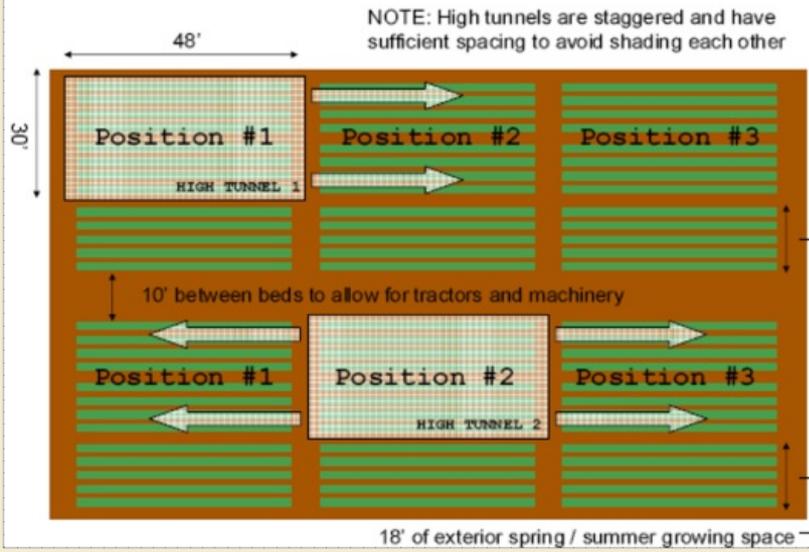
1. We utilize the high tunnel to start an early season crop that would not have been possible otherwise. We will be the first farm to contact any of our customers for carrots and the first farm to bring them to market.
2. We put our high dollar tomato or like crop in at the earliest date and will reap the benefit of early season and late season prices.
3. We provide a late season spinach crop that would not have been possible outdoors at this time of the year.
4. We cover a final crop of leeks and will be able to provide this product throughout the winter.
5. We utilize one movable house to cover four crops in one growing season when only one crop would have benefited under a stationary house.
6. Another way to look at it is that we have efficiently used one movable high tunnel to replace four stationary houses by incorporating intelligent crop and high tunnel rotation.



Moving Systems (Track / Skid)

Flip-up Endwalls

THREE POSITION MOVABLE HIGH TUNNEL LAYOUT



Another advantage is the avoidance of the buildup of pests, diseases, and excess soil nutrients, which can be problems in stationary high tunnels.

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