

## Fresh Strawberries during a Nebraska Winter

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Our project efforts for the National Sustainable Strawberry Initiative are actually a culmination of 4 Horticulture Specialty Block grants and funds through the NE 1035 Multi-state research projects. This unique opportunity to bring our research directly to the grower has had the Nebraska Strawberry team working hard growing strawberries. Our plants are in soilless mix (6" pots) utilizing a water/fertilizer saving capillary mat system at 2 sites and in two different structures - a heated high tunnel and a university double polyethylene greenhouse.

We started the project last summer by building the high tunnel and benches and installing the irrigation system. We are excited that we will be able to share 3 videos that currently being processed on how to construct your own! We received the dormant strawberry crowns in September and by October all plants were flowering. We harvested our first saleable berries shortly thereafter. Much to our surprise, our commercial partner, Ryan found that he could sell more strawberries than he could produce! During this time, the cultivar Evie-2 was the most productive.



Figure 1. Strawberries being harvested at Pekarek's Produce Farm. The orange bands on the pots indicate the cultivar 'Evie-2+'.

Things were going well and then we experienced one of the coldest, windiest winters recorded in the plains. For the first time in 30+ years the ground froze down to 36" in Lincoln and 41" outside of the Omaha area.



Figure 2. One problem with high tunnels versus greenhouses is the lack of insulation. Here Ryan used pieces of plywood to temporarily seal off the vents on the outside and old comforters on the inside.

To conserve heat, we buttoned up the tunnel and dropped the house down to 57°F at night and let the plants rest during the end of December and into January. Then in February, with a warmer night temperature and longer days, the plants started growing and flowering again. Informal taste tests by our university colleagues pronounced the berry's flavor excellent and remarks were shared about how much longer they lasted in the refrigerator compared to store bought berries. By the middle of March our grower produced 157 salable pints in one week.



Figure 3. Ryan harvesting strawberries in March.

At the end of March, Ryan opened up his farm and produce growers, extension agents, famers, farmer's market vendors and others were invited to visit the heated high tunnel strawberry project. Dr. George Meyer and Diego (the team's biological systems engineer and our visiting scientist), Professor Dave Lambe MBA, Dr. Paul Read, Liz Conley, M.S. and Allison Butterfield, undergraduate student (our UNL growers) and I spent the afternoon enjoying the sunshine, visiting with our guests and serving them fresh strawberries and popcorn. Among them was a group of FFA students. Many of these young people were very interested in strawberry production and this gave us the

opportunity to talk to each one personally about studying horticulture and the wide variety of careers that would be available to them. Over the course of the afternoon we hosted over 65 people – pretty good for a Friday afternoon out in the country !



Figure 4. Ryan’s processing shed was organized to allow visitors to gather during the March Open House.



Figure 5. Two of the posters showing the University of Nebraska research that led up to the experiment at Pekarek’s Produce.



Figure 6. Inside the packing shed visitors chatted with Ryan and other members of the Strawberry team.



Figure 7. Members of the Strawberry team (with spring green leis – after all it was UNL’s Spring Break!) make sure the refreshments are available and monitor/answer questions generated from the Heated High Tunnel construction video that was playing.

### **APRIL and beyond –**

Both sites continued harvesting berries into April. We stopped taking data in mid April, but thanks to a cool spring Pekarek’s was able to harvest a few more weeks. The plan for May is to plant about 100 or so of the strawberries into Pekarek’s field and allow them to produce stolons (runners). The runners that are well-rooted will be harvested in the fall, bundled and stored in the produce cooler. These dormant crowns can then be used to start new heated high tunnel plants in mid-December.