

**2008 Agriculture Innovation Grant  
Calypso Farm and Ecology Center  
Final Project Report**

***Using Soil Blocks to Increase Greenhouse Productivity and Sustainability***

**System Purchased**

Soil blockers (4 sizes) and materials for building trays were purchased as part of this grant. Additionally, potting soil, irrigation materials and tools were purchased to support the project.

**Overall Project Results**

This project was a great success! After overcoming the initial learning curve in making blocks (our first blocked trays took an embarrassingly long time to make), we fell in love with soil blocks! We found the germination rates to be very high and the health of the seedlings to be strong. The plants grew well and suffered little transplant shock in the field. We have converted our entire greenhouse operation to soil blocks.

Based on our project, we found the following **benefits** in using soil blocks:

- More efficient use of greenhouse space – the blocked trays use up approximately 1/3 less table space in the greenhouse. This had a huge impact as limited space is always a high stress issue by mid April.
- Increase vigor of young seedlings – possibly due to the higher volume of growing space per seedling.
- Increased germination rate – possibly due to the evenly moist conditions which exist in the soil blocks upon seeding.
- Increased tolerance to transplant shock – possibly due to the complete absence of root binding. (Roots “air prune” at the edges of the blocks, instead of circling the seedling)
- Decreased dependence on disposable, imported, fossil fuel based products!

Based on our project, we found the following **challenges** in using soil blocks:

- Need for specialized trays. We needed to invest in wood products in order to build the trays needed to support the soil blocks.
- Increased weight of each tray. They are a bit more cumbersome to carry around.
- Learning curve on blocking. The blocking was initially very slow and fairly difficult to get consistent, good blocks. The blocking became easier after blocking thirty trays or so.
- Plants are a bit more difficult to sell at the plant sale because there are no six packs for purchase. The individual plants don't seem to travel as well in the single block form.

**Report Questions**

*Was your season extended or shortened, if so, by how much?*

This project wasn't intended to shorten or lengthen the season. As expected, there was no difference in the length of the season.

*Did your crop productivity increase or decrease, if so, by how much?*

We did notice an increase in the productivity of the seedlings in the greenhouse. They appeared to be more vigorous than seedlings planted at the same time in plastic trays. These were qualitative assessments of the

productivity increase. We did not take any data to quantitatively demonstrate the amount of increased productivity. However, 500 plastic trays and 5,000 plastic six packs were NOT used, as a result of this project.

### *Public Presentation Overview*

Tom Zimmer did a presentation at the annual SARE conference in Fairbanks in March. He did a hands-on presentation, allowing people to try the soil blocker and see them up close. Most people were appreciative of having a hand-on presentation at the conference. It seemed to spark interest in soil blocking as an alternative to the use of plastic in the greenhouse.

### **Project Outreach Summary**

Our project outreach varied in some ways from our proposed methods, however the number of people reached was increased. We outreached about the project in the following ways:

- Ester Republic Article – Fall, 2008
- Calypso Newsletter Article – pending spring 2009
- Field Trips – 2,500 children (to date) have learned about soil blocks in our greenhouse as part of our field trip offerings.
- Farm Tours – several hundred people participate in farm tours annually at the farm. Beginning in 2008, soil blocks have been a regular topic on all farm tours
- Calypso Open House – the soil blockers were a featured item at our annual Open House in 2008 and will be again in 2009. In 2008, just over 200 people visited the farm for our Open House.
- SARE – Organic Growers School Conference – March 2009
- Calypso Website – the soil blocks page of our website is still under construction. We hope to have it up sometime during the summer of 2009.
- We **did not** offer a soil blocking workshop as part of our annual Ecological Gardening Workshop Series this year. This was an oversight. We will offer the topic in 2010.