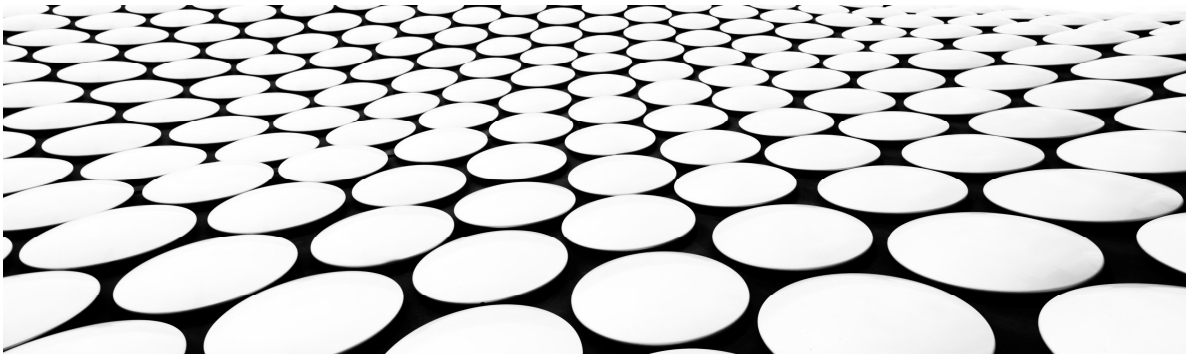
ARE LOW TUNNELS FOR ME?

HARLENE HATTERMAN-VALENTI
NDSU HIGH-VALUE CROP SPECIALIST



HIGH TUNNELS VS CATERPILLAR TUNNELS VS LOW TUNNELS
WHAT ARE HIGH TUNNELS?

Semi-permanent structure with metal frames, ground posts, and roll-up sides.

Pros:

Very durable and wind/snow resistant; higher ROI for commercial growers; allows easy walk-in access and high crop yields.

Cons:

Higher initial cost; not easily moved; requires more skill to construct.

WHAT ARE CATERPILLAR TUNNELS?

Pros:

Vertical Space: Tall enough to walk in, allowing for easier maintenance and the use of trellises for vertical crops.

Season Extension: They retain significant heat, often remaining "steamy" inside even on cold winter days.

Portability: While larger, they are still considered temporary and can be moved by a small team in a single morning.

Cons:

Weather Sensitivity: Because of their height and lack of permanent footings, they are more susceptible to wind and heavy snow than low tunnels.

Maintenance: Ventilation is manual; you must physically push up the plastic on the sides to prevent plants from "frying" on sunny days.

WHAT ARE LOW TUNNELS?

Pros:

Wind Resistance: Their low height makes them less likely to blow away during storms compared to taller structures.

Efficiency: They are excellent for overwintering hardy greens like spinach and kale, as they trap heat close to the soil.

Pest Control: Often used in summer with mesh or row cover to block insects like cabbage moths.

Cons:

Ergonomics: Harvesting and weeding can be difficult because you must bend over or move the cover entirely.

Height Limits: You cannot grow tall, trellised crops like tomatoes or cucumbers inside them.

COMPARING HIGH TUNNELS TO CATERPILLAR TUNNELS

Feature	High Tunnel (Hoop House)	Caterpillar Tunnel
Primary Use	Long-term season extension	Quick, movable crop protection
Cost	Significantly higher (investment-level)	Low (often 1/8th the cost)
Stability	High (ground posts & baseboards)	Moderate (rebar & rope anchors)
Venting	Easier (roll-up sides & hand cranks)	Manual (plastic is pushed up)
Walls	Fixed end walls and side walls	No built-in end/side walls
Weather load	Rated for snow and high winds	Best for mild climates; less snow
NRCS	Equip eligible	Equip eligible

COMPARING CATERPILLAR TUNNELS TO LOW TUNNELS

Feature	Low Tunnels	Caterpillar Tunnels
Typical Height	2–3 feet	6–8 feet
Primary Use	Low-growing row crops	Taller crops
Cost	Very low (PVC/wire/EMT conduit)	Moderate (Metal hoops/6-mill film)
Portability	High (easy to move)	Semi-portable (can be moved)
Labor	Higher daily effort	Lower daily effort
NRCS	Not equip eligible	Equip eligible

Using Low Tunnels in a High Tunnel

Plant Materials:

Snap Bean
- EZ-Pick
- Amethyst Purple

Basil
- Elenora
- Everleaf (Johnny's Selected Seeds, Waterville, ME)

Three Planting/transplanting Dates:
- First week April - three week intervals

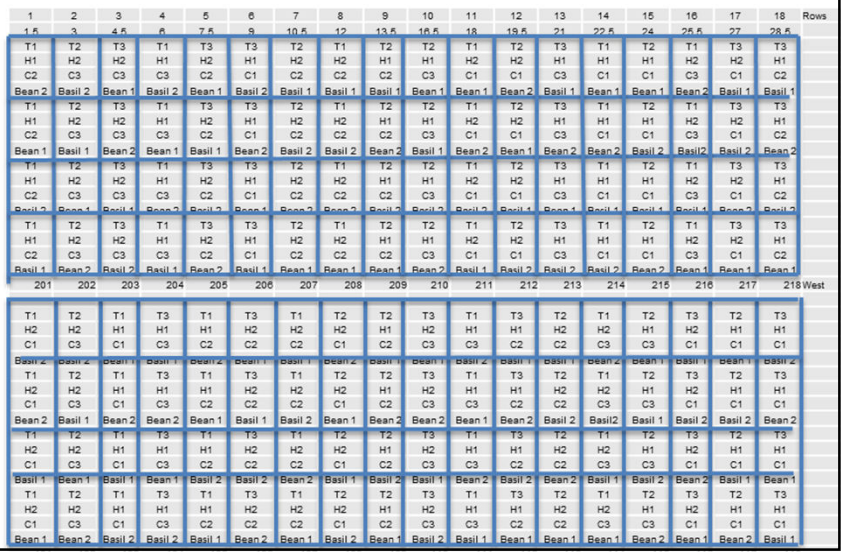
Data Recorded:
- Air and soil temperatures inside and outside HT

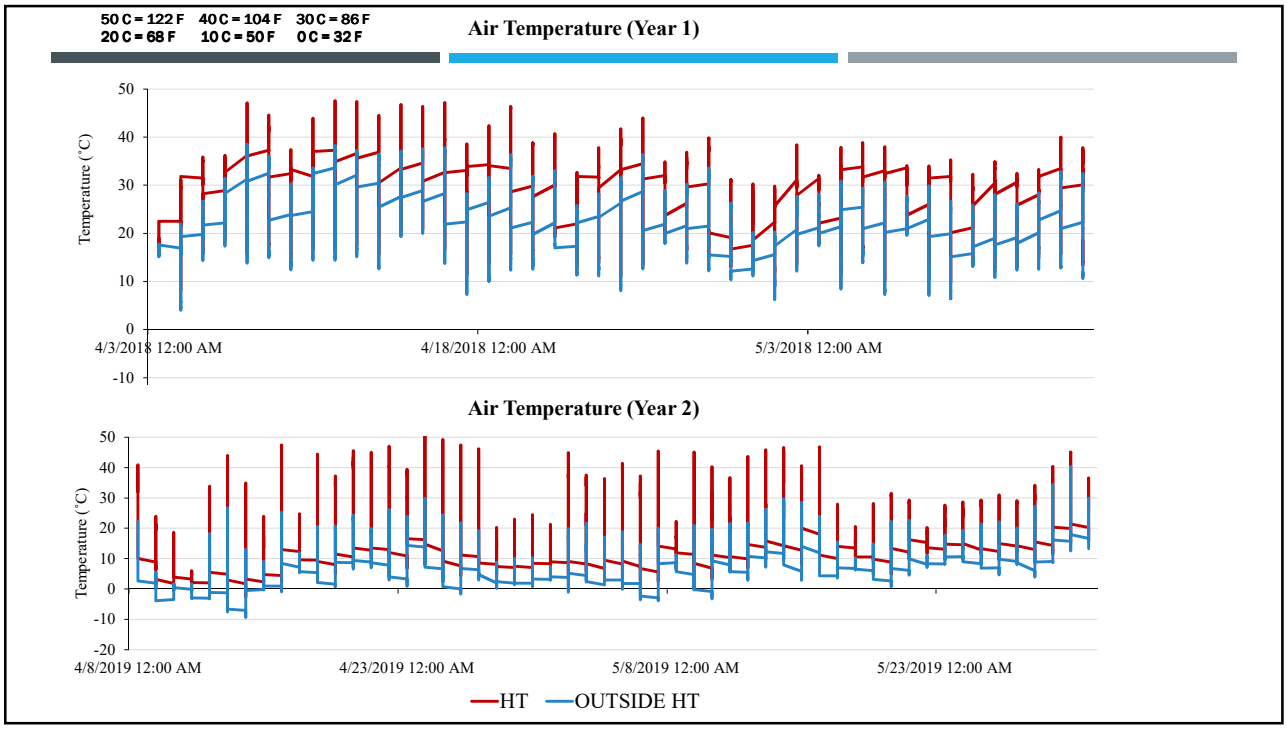
Yield Measurements:
- Date of first marketable yield
- Plant height, pod number, and yield

Different stages of Bean and Basil crops under HT condition

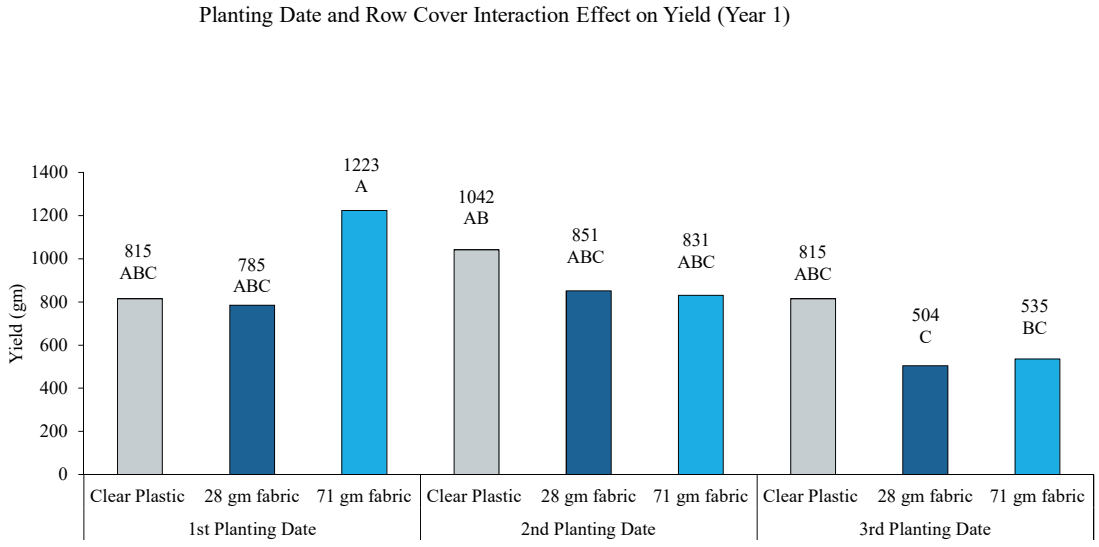
Materials and Methods

- Randomized Complete Block Design(RCBD) with split plot arrangement with two replications
- **Treatment details**:
- Three Planting Dates
  - Three week intervals
- Soil heat cables
  - Heat vs. No Heat
- Row Covers
  - Clear Plastic Cover
  - 28 gm fabric
  - 71 gm fabric
- Two cultivars of snap beans and basil
- (ANOVA) within SAS Statistical Software (SAS Institute Inc.)





Result and Discussion: Bean



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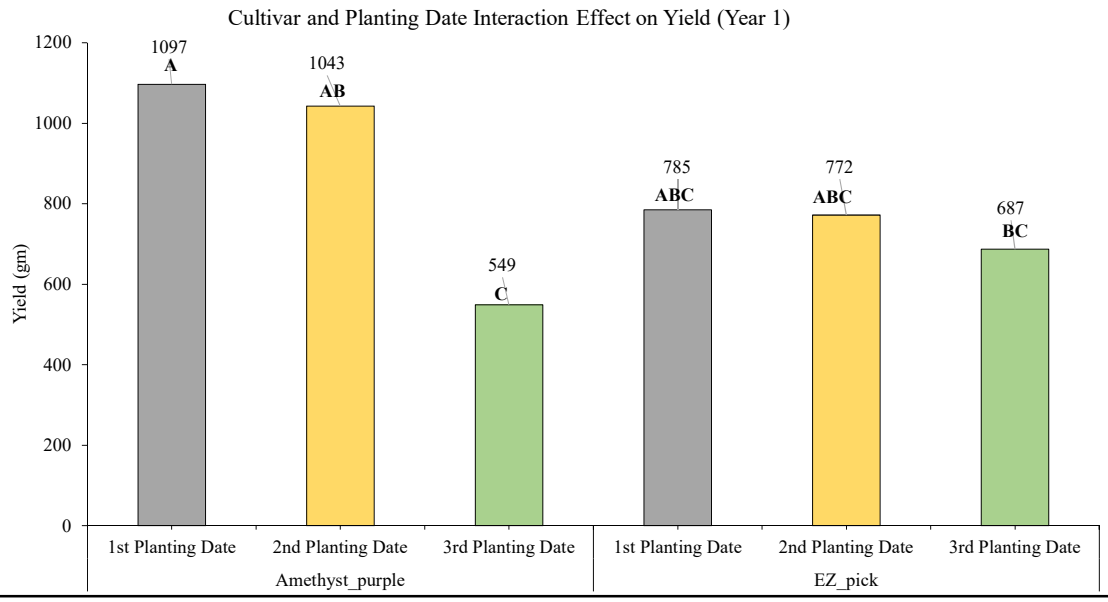
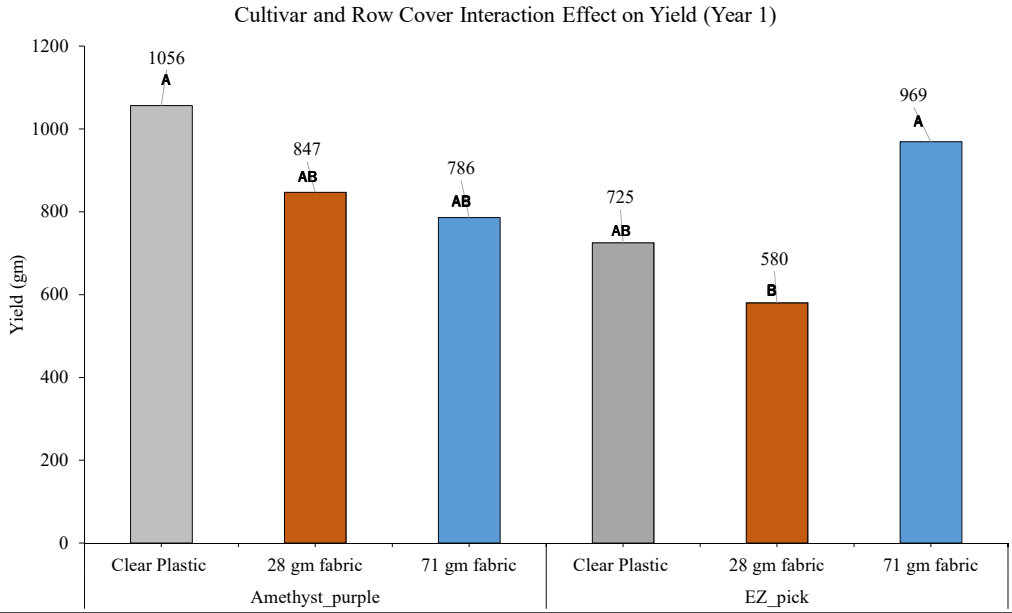
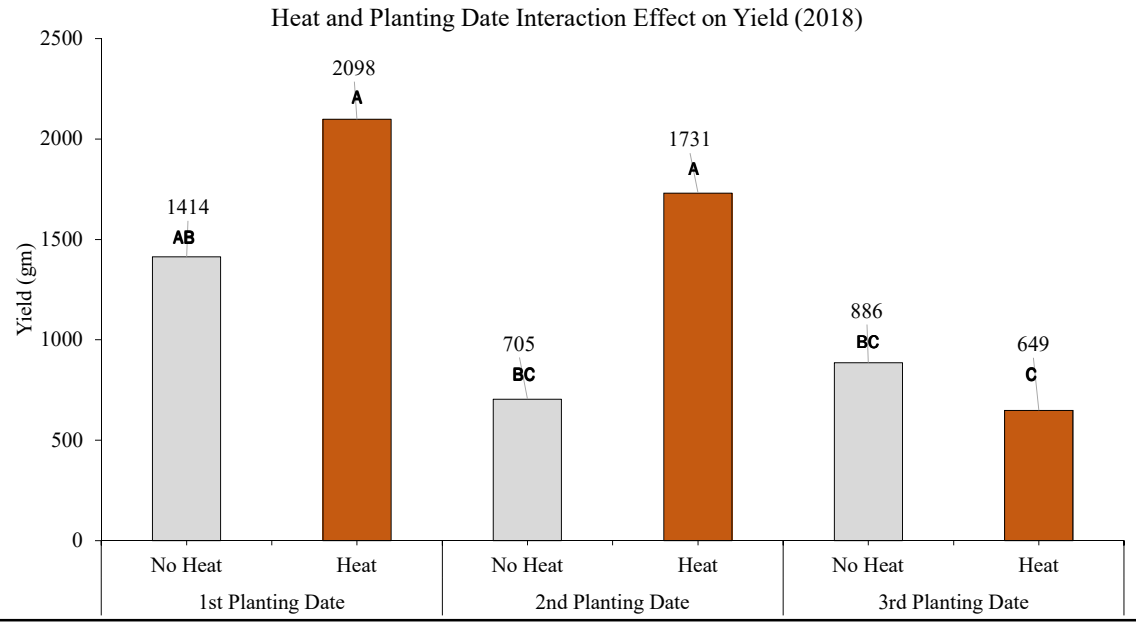


Result and Discussion: Bean



Result and Discussion: Basil



Take Home Message

Bean

- First harvest completed June 4th in Yr 1 and June 17th in Yr 2, which occurred before outdoor production started (June-July)
- Seeding beans earlier (T1) and covering with 2.5 oz frost blanket resulted in a greater yield than seeding at the late timing (T3) and covering with a frost blanket.
- Low tunnel row cover did not interact with heat to influence yield.
- Early planting date (T1) gave early harvest approximately 3-4 weeks earlier than the field

Basil

- First harvest completed June 4th in Yr 1 and May 20th in Yr 2, which occurred before significant outdoor production started (May-June).
- The heat cables showed the significant effect on yield Yr 1.
- Plants transplanted earlier (T1) and heat (H) yielded more than non-heated plants.