

Supplemental Heat for Winter Greens Production: What's the Cost?

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There seems to be little agreement among winter greens growers regarding the true costs and potential value of using supplemental heat all winter. With support from the Northeast Sustainable Agriculture Research and Education program (NE SARE) and the generous cooperation of the Poughkeepsie Farm Project (PFP), we tried to start gathering some data to add to the high tunnel heating debate. We tracked yield, soil nitrate availability, total nitrogen uptake, propane use, and soil temperature all winter in the two identical side-by-side 42'x 196' double layer inflated poly Harnois high tunnels with one tunnel set to 33 degrees ambient air temperature and the other set to 40.

The data from the trial is still being analyzed, but here are a few key results that have emerged:

- Maintaining adequate soil moisture and, ideally, living roots in the high tunnel before planting is necessary to preserve the soil microbial community that makes nitrogen available for plant uptake.
- Soil nitrate levels were not significantly or consistently different between the two temperatures; however, total nitrogen uptake in the warmer tunnel was higher for curly kale, spinach, and especially for Salanova lettuce.
- The warmer tunnel yielded three harvests in the same time that the cooler tunnel yielded only two.
- It took 979 gallons of propane to heat the tunnel to 33 degrees from November through March. It took 2.1 times as much propane to add the extra 7 degrees to reach 40 over the same period.



Winter greens in a high tunnel heated to 40 degrees at the Poughkeepsie Farm Project

- Fertilizing to 70 pounds/acre of nitrogen in September provided sufficient nitrogen to kale, spinach, and Salanova until mid-February.
- Targeted early spring fertigations with soluble Chilean nitrate carried those crops to maturity in early April

A big thanks to the great crew at PFP for all of the help tracking yield! Going forward, a group of vegetable specialists with Cornell Cooperative Extension hopes to continue to investigate fertility management in winter high tunnels generally and specifically the interplay between supplemental heating and nitrogen. If you are interested in collaborating, please reach out to Ethan at eg572@cornell.edu.

Governor Cuomo Announces More Than 60 New Industrial Hemp Research Partners Join New York State Pilot Program

Governor Andrew M. Cuomo announced in early April that more than 60 new farms and businesses have received research permits under the State's Industrial Hemp Agricultural Research Pilot program. These new research partners expand across the state, including seven counties in the Southern Tier, and will focus their studies in biotechnology and agronomics, among other areas. Additionally, for the first



time, [applications](#) for future research partners in the areas of food and fiber will now be accepted on a continuous basis.

To broaden New York's Industrial Hemp Agricultural Research Pilot Program, Governor Cuomo announced an [open](#)

[solicitation](#), which ended in November 2017, drawing applications from more than 100 farms and

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