



Learning to Use Lacy Phacelia as a Cover Crop for Pollinator Habitat

A Case Study: The Farm Upstream, Jericho, Vermont

In 2025, the University of Vermont Extension Pollinator Support Program and The Vermont Center for Ecostudies (VCE) teamed up with farms to better understand the following: 1) wild bee pollinator populations in farm landscapes through data collection and analysis; and 2) farm specific management to inform the development and implementation of farm centered pollinator supportive practices. The work includes five farm types: apples, blueberries, soy, grazed pasture, and mixed vegetables. This case study is an example of how one mixed vegetable farm is working to support pollinators with flowering cover crops.

Background

The Farm Upstream (TFU) is a 15-acre certified organic and diversified vegetable, fruit, and native plant farm. They market through community supported agriculture, a farmstand, and wholesale accounts. In 2024 the farm began converting hay land to annual and perennial crop production. The fields had sandy soils that were nutrient poor, and the landscape had limited floral resources to support pollinators. TFU embarked on a strategy to increase pollinator habitat and build soil health and by turning in the sod, soil testing, and planting cover crops.

Activities and Results

TFU decided to utilize cover crops that were well suited to pollinator support and soil health improvement. They identified Lacy Phacelia (*Phacelia tanacetifolia*) as an ideal candidate to experiment with. It is a cool season annual forb, native to the southwestern U.S. and Mexico that performs well on many soil types; it is cold-tolerant and fairly drought tolerant. Its flowers are highly attractive to a variety of pollinator insects and flowering begins 45 to 60 days after emergence and lasts 6 to 8 weeks¹.

The farm experimented with lacy phacelia in three ways: as a cover crop in annual crop fields, in high tunnels as ground cover, and as temporary plantings to cover exposed soil in grassy, non-production areas. The following describes the farm's experience with lacy phacelia as a cover crop in annual crop fields.

In 2025, an exceptionally dry season, two outdoor seedings were broadcast. The July 25 seeding was lacy phacelia, oats and field peas. It started blooming in early September and lasted until mid-November. An August 21 seeding substituted buckwheat for the peas and oats. It began blooming in early November and lasted until hard frost.

The lacy phacelia germinated quickly, several days before peas and oats, and often quicker than buckwheat. In both seedings it established well. In its vegetative state it created a thick canopy, effectively covering the soil along with the other cover crops. Buckwheat in the late season mix was killed by frost, allowing the undergrowth of lacy phacelia to flourish into late fall.

A wild bee type vital to pollination services on mixed vegetable farms, the bumble bee (genus *Bombus*), was abundant on lacy phacelia flowers through September. On warm days through early November, western honey bees (species *Apis mellifera*) and non-bee pollinators, syrphid flies (family *Syrphidae*), were noted on blossoms.



Image 2: Side by side plantings of lacy phacelia growth on October 28, 2024. Left, pure stand in vegetative phase, seeded September, 2025. Right, mixed stand at peak bloom, seeded with field peas and oats on July 25, 2025.

On December 1, a low temperature of ~20°F killed most of lacy phacelia plants, though some young plantings remained green albeit with signs of cold damage. No seeds were found in seed heads on December 1.

The growth and flowering of lacy phacelia until the first hard frost is evidence of the potential for this cover crop to provide forage for wild bees that persist into the fall, such as previously mentioned bumble bees, in addition to other bee pollinators, like small carpenter bees (genus *Ceratina*) and honey bees.

Conclusions

The farm's experience seeding lacy phacelia in annual crop fields in 2025 resulted in good establishment, perhaps aided by the use of other cover crops (oats, field peas, and buckwheat) in the mixture that served as a nurse crop. Weeds were effectively suppressed by the summer plantings and beneficial insects were seen foraging on flowers that were produced for about 9 weeks.

The farm looks forward to improving their management of lacy phacelia as a cover crop, including fine tuning seeding rates, testing multi-species mixes with other cover crops, and refining dates of seeding and termination for long lasting soil coverage and abundant blossoms.



Image 2: Stand of lacy phacelia on November 5, 2025 in late bloom, after buckwheat was frost-killed. Stand was seeded July 25, 2025. Photo courtesy of The Farm Upstream.

Citation

¹ U.S. Department of Agriculture Natural Resources Conservation Service and Iowa State University. (2025). Phacelia Cover Crop Fact Sheet for Iowa. USDA NRCS.

<https://www.nrcs.usda.gov/sites/default/files/2025-07/Phacelia%20Cover%20Crop%20Fact%20Sheet.pdf>

Many thanks to Spencer Hardy for his contributions to this case study. For more information about pollinator supportive farm management practices, contact UVM Extension Pollinator Support Specialist, Laura Johnson, laura.o.johnson@uvm.edu.

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