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Brassica Production Practices and Concerns in Vermont and the Northeast

Results from a survey of vegetable producers in the Northeast

Background

Brassica crops are an important crop on diversified vegetable farms in Vermont and the Northeast. Brassicas are becoming more popular as a cover crop due to their unique benefits to soil health. They can provide ground cover and cover crop biomass quickly in the fall, and brassicas with long taproots further break up compaction in the soil. Brassicas on vegetable farms include rutabaga, cabbage, cauliflower, kale, broccoli, Brussels sprouts, collards, and mustard greens. Despite the benefits, not all vegetable producers are quick to add brassicas or brassica cover crops to their rotation due to pest and disease management concerns. Increased use of high tunnels has created a “green bridge” for disease and pests in the winter months. To identify the prevalence of brassicas on Vermont vegetable farms, cover cropping practices, and pest and disease concerns of producers, UVM Extension conducted a survey in the winter of 2019. Responses were collected in-person at the Vermont Vegetable and Berry Growers Association (VVBGA) meeting, the NOFA-VT Winter Conference, a UVM Extension nutrient workshop, and online. Fifty-three producers responded. This article summarizes the results of this survey.

Key Findings

1. 90% of vegetable farmers surveyed are diversified, and 100% grew brassica cash crops. Kale, cabbage, and broccoli were the most commonly grown.
2. An average of 13 acres was in vegetable production on the farms surveyed.
3. 94% of farmers surveyed cover cropped, but only 27.3% of those who cover cropped used brassica cover crops.
4. The top disease concerns in brassicas were Alternaria leaf spot, black rot, and powdery mildew.
5. The top pest concerns in brassicas were the flea beetle, the cabbage looper, and the cabbage aphid.

Farm Characteristics

Almost two thirds (62%) of survey respondents were located in Vermont, and others were located in New York, Maine, Massachusetts, and Connecticut (Figure 1). Most producers surveyed owned some or all of the land they farm. 47.2% of respondents own all of their land and 26.4% both own and lease. 51 respondents with active production owned or leased 55 acres on average, and had an average of 13 acres in vegetable production. 29 out of 51 farms were Certified Organic (56.9%) and 18 farms (35.3%) reported using organic methods, but were not certified.

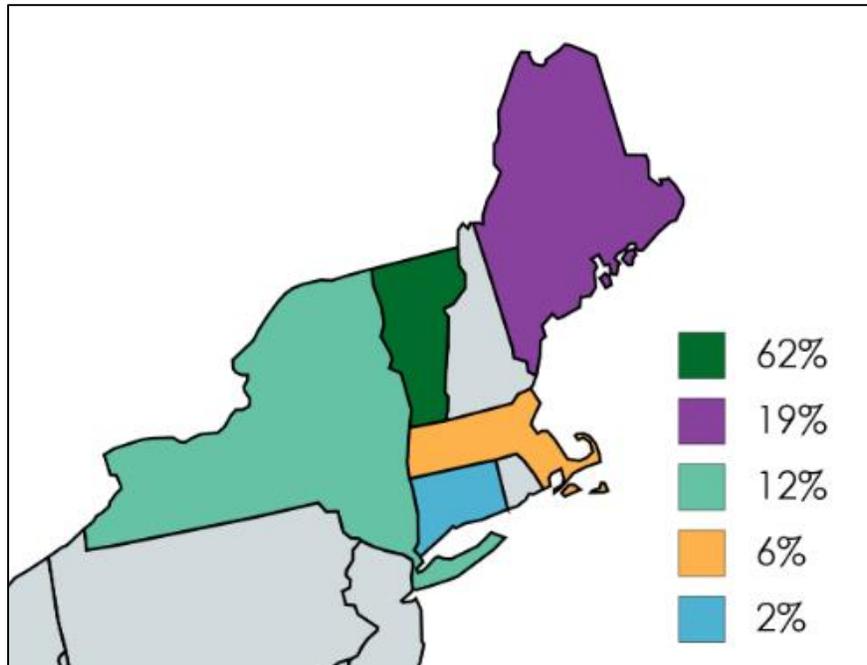


Figure 1. Representation of states from respondents.

90% of vegetable growers surveyed were diversified, reporting crops other than vegetables, and 100% grew brassicas as a cash crop. The reported brassica cash crops, from most frequently reported to least frequent, were: kale, cabbage, broccoli/broccoli rabe, Brussels sprouts, turnips, other brassica greens, cauliflower, kohlrabi, collards, and others (arugula, mustard green, radishes, rutabagas).

Cover Cropping with Brassicas

Despite the benefits of brassica cover crops, vegetable farmers in the northeast have been slow to integrate them into their cropping systems.

Cover cropping was prevalent among the producers that responded to the survey, with 94% having some amount of cover crops in their production systems. The most common acreage cover cropped was 1 to 5 acres (49%), followed by less than 1 acre (17.6%). However, despite a wide use of cover crops in vegetable operations, only 27.3% of cover cropping producers surveyed used brassica cover crops.

Among these producers cover cropping with brassicas, tillage radish was the most popular brassica cover crop, followed by High Glucosinolate Mustard (HGM), and then by forage turnips. Those who did use brassica cover crops cited soil health (29.5%), pest and disease suppression (15.9%), and a good fit in the seasonal rotation in terms of timing and variation (9.1%) as the top motives for implementing brassicas.

Pest and Disease Concerns

A major barrier to the successful implementation of brassica cover crops is concern about pests and disease. Brassicas are susceptible to many pathogens and pests that can limit yield and crop quality.

The majority of cover croppers, the 72.7% that did not implement brassicas as cover crops, stated that they did not use brassicas due to the following top motives: risk of pests and disease (59.4%), contentment with different cover crops (31.3%), being unfamiliar with the use of brassica cover crops (28.1), and not being able to successfully fit brassicas in a rotation in terms of timing and variation (25%).

Producers were asked to report their top three disease and pest concerns in this survey. The top three disease concerns were alternaria leaf spot, followed by black rot, then powdery mildew. Other diseases reported in order of concern were: downy mildew, black leg, sclerotina white mold, and club root (See Figure 2). This confirms anecdotal evidence that the main source of hesitation among vegetables growers are concerns about pest and disease carryover from brassica cover crops.

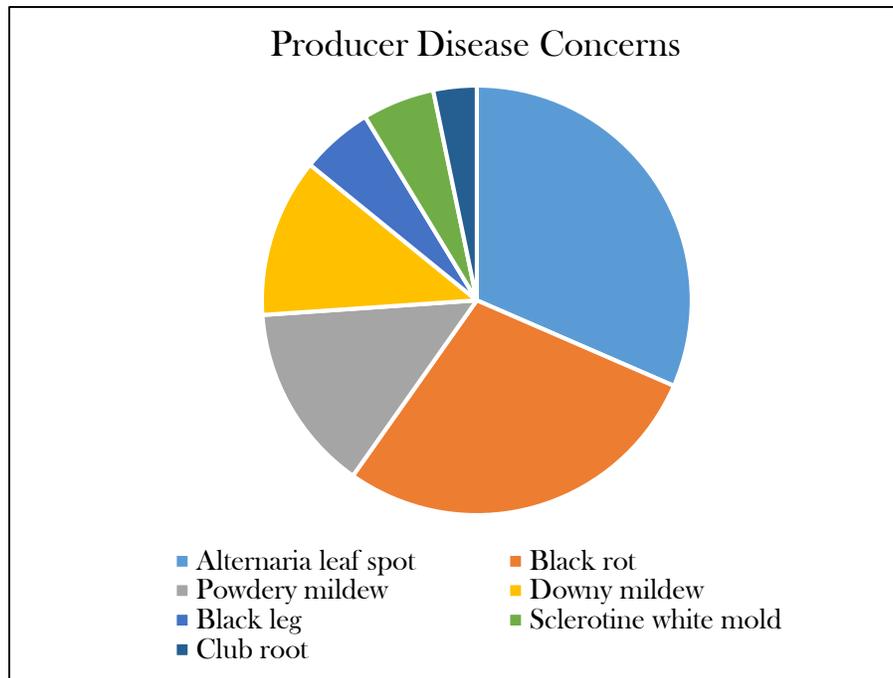


Figure 2. Producer disease concerns. Producers were asked to report their top three concerns.

The top three pest species concerns were flea beetle, followed by cabbage looper, then cabbage aphid. Other pests reported in order of concern were: imported cabbageworm, cabbage root maggot, swede midge, diamondback moth, and cross striped cabbageworm (See Figure 3).

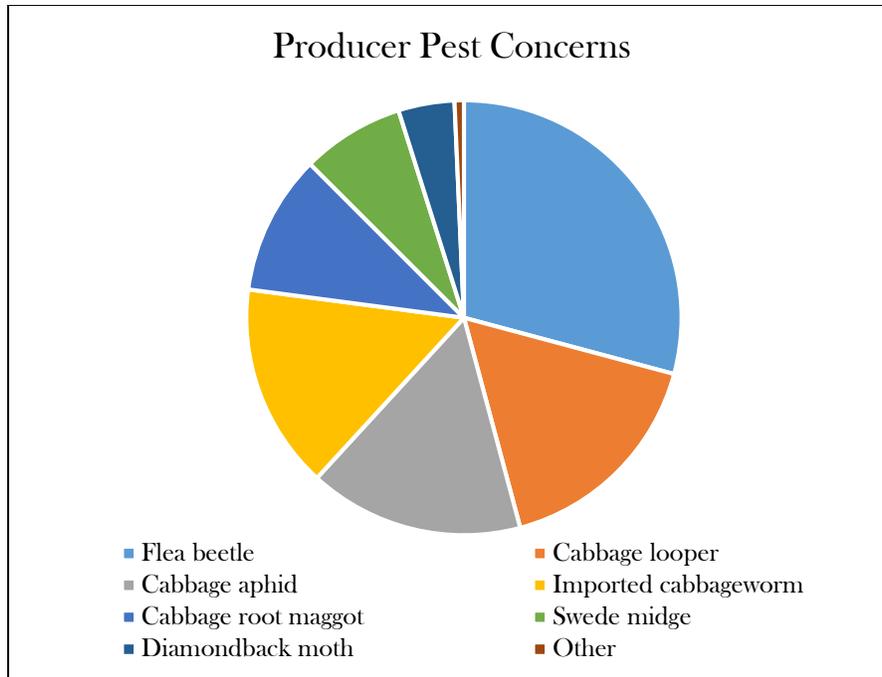


Figure 3. Producer pest concerns. Producers were asked to report their top three concerns.

Acknowledgements

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For more information about the survey and results, please contact UVM Extension’s Northwest Crop and Soils Team at <https://www.uvm.edu/extension/nwcrops> or 802-524-6501.

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