

**Text S3. Student survey questions.** This supplemental text contains the survey questions distributed to students used to gauge the impact of engaging in farm-based authentic research modules (FARMS) in Environmental Studies 25, Ecological Agriculture, at Dartmouth College.

1. What is your major?
2. What is your minor (if you have one)?
3. Was this your first lab class in college?
  - a. Yes
  - b. No
4. What does experiential learning mean to you?
5. Why did you take this course on ecological agriculture and what were your goals? Please be as candid as possible in your response.
6. Until this summer, ENVS 25 labs were historically carried out on a corn experiment with known outcomes that was not part of the production system at the Dartmouth Organic Farm. Based on feedback from previous years, this summer's experiments were integrated within the production system at the Dartmouth Organic Farm so that the results could inform agroecological management at the farm. Do you think that we should continue the model from this year by designing and implementing new experiments every summer that are part of the existing production system at the DOF to inform sustainability solutions, or return to the previous experiment model?
  - a. Yes, we should continue to design and implement new experiments that are part of the production system at the DOF to inform agroecological management at the farm.
  - b. No, we should return to the known corn experiment that is not part of the production system at the DOF.
7. The ENVS 25 labs have provided an opportunity to conduct primary research at the Dartmouth Organic Farm asking original research questions and following experimental protocols that can lead to results that can be published in scientific journals. This entails a level of uncertainty at the start of the experiment where our instructors (including the Dartmouth Farm Manager) do not know the outcome of our experiments before we conduct them. The goal of our experiments are to apply our findings to inform sustainability solutions. Specifically, the findings from our experiments will influence the management of the Dartmouth Organic Farm in future years. How does this compare to other lab courses you have taken at Dartmouth or previously?
8. Another one of the goals of our ENVS 25 labs is to have firsthand experience understanding the key concepts in our textbook for agroecological management of weeds, pests, and soils for high quality crops. How have your experiences with ENVS 25 labs on the Dartmouth Organic Farm helped bring to reality text book concepts?
9. Do you have any suggestions for how the topics from our course readings could be better incorporated into our lab investigations at the Dartmouth Organic Farm?

10. What were some of the challenges you experienced in the primary research conducted in the lab investigations for ENVS 25?

11. How did you feel about working together in lab teams to collect data? How did you feel about collaborating to complete lab reports?

12. What aspect of the course did you find most rewarding in enriching your understanding of ecological agriculture and your motivation for further being involved in sustainability science? Please rank in order from 1 (most rewarding or enriching) to 5 (least rewarding or enriching).

- a. Readings
- b. Classroom lecture and discussion
- c. Labs at the Dartmouth Organic Farm
- d. Practicums
- e. Case study research and presentation

13. During our final lab week, we set up a booth at the Hanover Farmers Market to disseminate the results from our ENVS 25 labs to the broader community. Comment on the degree to which ENVS 25 lab investigations have bridged science and practice for sustainability transitions in the agricultural system.

14. What are the three major take-home points from this class?

15. Overall, how have your experiences in ENVS 25 fit into your broader goals related (or not related) to sustainability?

16. After taking this course on ecological agriculture, what are some actions that you perceive you can take to influence sustainable transitions in the food system while at Dartmouth? After graduating from Dartmouth?

17. How has this course on ecological agriculture affected your interest in learning more about and being involved in creating and being part of a more sustainable food system?

- a. Strongly decreased my interest
- b. Somewhat decreased my interest
- c. No change in my level of interest
- d. Somewhat increased my level of interest
- e. Strongly increased my interest