

## Farming with Legumes

Sometimes, farmers grow crops of rye and other grasses and then plow them under the soil to decay. This practice helps to increase crop yields of other plants. Farmers may also plow under legumes such as peas, vetch, and lentils.

1. What is a legume? Why would farmers grow legumes and then plow them under?

In an effort to determine which practice produces the best crop yields, scientists performed an experiment where corn was grown on land that had previously received one of five treatments for one growing season. The treatments are described in Table 1 along with the amount of corn harvested (in kg/ha) from each field. None of the fields received fertilizer while the corn was growing and they were in the same area so rainfall was the same for each field. One hectare is 10,000 square meters.

**Table 1: Corn Production for each field treatment**

Treatment	Corn yield (kg/ha)
1. Monantha vetch	2876
2. Hairy vetch	2870
3. Austrian peas	3159
4. Rye	1922
5. None	1959

2. Use the data in Table 1 to make a bar graph.
3. Make a statement to summarize the results of the research.
4. Propose an explanation for the increased yields in treatments 1, 2, and 3.
5. Propose an explanation for the results of treatment 4.
6. Use the nitrogen cycle to explain the results.
7. Why is this type of research important?