

USDA Plant Germplasm Introduction Unit for Cool Season Food Legumes Pullman, WA Lydia Fields Summer 2016

The plant germplasm introduction unit of the USDA is responsible for growing unique varieties of cool season food legumes which are harvested for research and also to strengthen the amount of germplasm stored in seed banks nationally and world wide.

Responsibilities in the greenhouses

- Irrigating by hand watering and by drip irrigation systems.
- Trellising and training peas to climb desired lines.
- Regular pest checks and powdery mildew checks.
- Data collection. (phenotypic traits, pod count, seed count, dates, etc.)
- Hand harvest, picking peas off the plants.



Greenhouse which houses *Pisum Sativum* (Pea) where it is at less risk for virus. This photo shows the importance of trellising the climbing peas, for some of them can grow over 6ft tall.

Responsibilities in the field

- Weeding with hoes to combat the growth of invasive weeds which compete with our crops for nutrients, water and light.
- Data collection. (phenotypic traits, pod count, seed count, dates, etc.)
- Pest checks
- Hand harvest and mechanically assisted harvest. Pruners and motor powered hedge trimmers for woody chick peas



Field of Lentils at the Spillman Agronomy Farm being grown for a phenotyping experiment and also for harvest.. The middle and left side of the photo shows a row which I hoe'd. To the right, you can see how invasive the weeds can be when they aren't tended to.



Greenhouse grown *Pisum Sativum* variety with a natural fungal growth called Neoplasm



A purple *Pisum Sativum* variety grown on the Central Ferry Farm. Purple and Yellow pods are very rare compared to green

Summary

While I have always had a passion for plants and plant sciences, my focus has mostly been in the art of greenhouse growing and greenhouse management. Over the summer however I have been introduced to other areas of ag sciences, such as the research aspect of agriculture. This introduction to agricultural research has had the most substantial impact on me. Working under a USDA research scientist gave me the opportunity to learn first hand about the importance's of ag research and advances in scientific knowledge and ag technology; which I had only previously been introduced to in my lower level HORT class lectures. Previous to my professional work experience I was blind to such an important aspect of agriculture. Now I understand that it is very important to have a vast germplasm bank of many varieties of different species so that pest/virus pressure on an established cultivar can be combatted by introducing resistant genes from a plant of the same species but different variety. This concept has already opened my eyes to new opportunities and interests within this industry. This summer has challenged me, pushed me and taught me many important professional lessons. I am excited and more motivated than ever to further my education as a student at WSU having been an employee for the USDA Plant Germplasm Introduction unit. Go Cougs!

