Report on 2010 Australian Research and Travel Grant

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First of all I would like to take this opportunity to thank everyone involved in making this experience possible by creating and funding this travel grant. It truly was an educational trip for me. I learned a lot from their different culture and innovative way of thinking. I think sometimes we get in a rut and can't see past the edges. We tend to follow patterns and previous trains of thought that have not always worked well in the past. When you go to a foreign country that has fresh ideas it sparks new ideas in us and we become more creative in our thought process. Maybe they are in one of their ruts but it is usually different than ours. If you can compare the two and take the best of each, many times we come up with a new and better way of doing things. I feel that this will be the outcome from some of my experiences while working with and observing the Australians in their environment.

The main focus of my trip was to learn more about the annual legume nitrogen fixing crop vetch. Vetches are not commonly grown in Wyoming, but they are being evaluated as potential new crops at SAREC. Of particular interest are two new improved vetches that were developed by Australian scientists. Our work with these crops in small plots indicates that we need to learn more about the harvesting process. Vetch has been grown for many years in the Eyre Peninsula, where I visited, but with the current price of wheat and canola it is not so common now. This made it a little difficult to find current growers. The reason for growing vetch in the Eyre Peninsula is mainly as a break crop. A break crop is a crop with different growth habits and pests than the commonly grown wheat in the area. It is planted after several continuous years of cereals to allow for disease, insect, weed and other pest populations to subside. In this region vetch is normally grown on the low areas that have heavier soils. This is where it yields the best. Lupines are also grown on the lighter soils of the hill tops as a break crop. The exceptionally wet conditions this year resulted in a later maturing crop than normal. This meant that only one farmer was ready to harvest vetch while I was there. I traveled to his farm to help but he had an equipment breakdown and was waiting on parts for repairs. He had made a few rounds before the breakdown so I was able to see a little of the harvested seed and the set up of the equipment. This included a belt pickup attachment in front of the combine head. We don't have one on our combine here at SAREC, although I know many farmers in the United States use them when harvesting dry beans. Even though I didn't accomplished everything I set out to do because of weather conditions I was able to observe vetch being grown and the start of the harvest process. Many of the producers that grow vetch also run sheep in their operations and the grain is used as sheep feed. Vetch is a legume, which when inoculated with the correct rhizobium, increases soil fertility. I'm still convinced that vetch could be a great benefit to our dry land producers in Wyoming for improving soil fertility.

Another idea I picked up while there was the use of a disk blade at each end of the pickup attachment on a combine. These disks are used when direct harvesting dry grain peas. They cut the vines to

prevent them from wrapping around the ends of the header and causing plugging or excessive grain loss from shatter. Here at SAREC I have had a minor problem with this in the past.

SAREC participates in canola and camelina variety testing. A major concern we have is seed shatter. As the plant ripens it becomes dry and the pods pop open before harvest, dropping the seed on the ground, reducing yield. When testing multiple varieties (we normally have between 45-65 varieties) there is a significant difference in maturity from variety to variety. We are logistically unable to harvest individual plots, so all have to be harvested when the last one is ripe. Many of the early maturing varieties are starting to shatter by this time. The Australian researchers at Minnipa, where I was stationed, had hundreds of canola plots and I asked them how they dealt with this problem. Their reply was that they have a compound that is sprayed over the plots just before ripening. This compound is a glue to keep the pods from popping open. It does not pose a problem when harvesting. Many of the producers apply this also. I will be researching this product for use at SAREC.

I took away other important messages that I haven't mentioned here, but the ones I did mention will be a great help to me in the future and will benefit my research capabilities here at SAREC.