NMSU tests chile strains for salt tolerance

By **Audry Olmsted / NMSU News Service** on Mon, Oct 31, 2011

The effects of drought are evident in New Mexico, especially in the area of agriculture, but the chile crop will not be left behind if New Mexico State University researchers have any say in the matter.

Evan Call, who graduated from NMSU in 2010 with a Master of Science in Plant and Environmental Sciences, began the study, "Evaluation of Two Methodologies To Screen Capsicum for Salt Tolerance," in 2009. Call was advised by Paul Bosland and April Ulery, NMSU plant and environmental science professors.

Call began the study partly in response to the steady decrease in main water sources for New Mexico farmers. Such reductions, especially the water level decrease at Elephant Butte Lake, make it more challenging and expensive to irrigate crops, and many farmers are forced to tap into underground water sources, which often have higher saline content, Ulery said.

"It takes so much effort for a plant to grow in high saline soil that it expends more energy trying to stay alive than in producing healthy fruit," Ulery said.

The study examined 13 accessions representing five species of chile plants in a germination test to see what percentage of each species showed signs of making it through the growing process when grown in seven saline solutions. Then, the 13 species were narrowed to eight in a greenhouse test to see which species would emerge through the soil when grown in saline soil mix.

'Early Jalapeno' had the highest emergence percentage at 81 percent. 'NuMex Sweet' and P.I. 140375 also finished in the top three performers for saline tolerance, with emergence percentages of more than 70 percent.

In the future, Bosland said he would like to look at inheritance of the salt tolerance trait in chile plants and developing cultivars that are salt tolerant.