UCARE student lands sweet research project

Han Do, a first-year UCARE student, examines strawberry plants being grown in an Easat Campus greenhouse. Do is part of a research team that includes Ellen Paparozzi, professor of Agronomy & Horticulture.

Scientists work to develop new way to grow strawberries in greenhouses

By Christine Scalora
Undergraduate Studies

Imagine eating freshly picked, Nebraska-grown strawberries — in the middle of winter.

Han Do, a first-year UCARE student, is working on a project that could help Nebraskans grow strawberries in winter greenhouses.

The junior horticulture major is working with Agronomy and Horticulture professor Ellen Paparozzi and a group researching which strawberries can be grown for commercial production on capillary mats.

Capillary mats water plants using capillary action, a process where the water is drawn through the fibers of the mat into the soil. Capillary mats serve as a sustainable water source for the plants.

Do and Paparozzi are part of a group of 11 people from several departments on campus working on this project. Group members come from the departments of Agronomy and Horticulture, Food Science and Technology, Statistics, and Biological Systems Engineering.

The Undergraduate Creative Activities and Research Experiences program has undergraduates working directly with faculty members, participating in research and other creative activities on campus. The two-year projects give students the opportunity to add valuable experiences to their education.

The group is growing 13 different types of strawberries in a greenhouse on East Campus, to determine which types of plants could be used for commercial greenhouse production.

Growing the strawberries while there is still snow on the ground is not the only unique aspect of the project.

"Strawberries have not been grown previously on capillary mats," Paparozzi said.

Capillary mats are an old technology that has become a sustainable alternative to other types of irrigation, she said. But the technology in the greenhouse is state-of-the-art. A clock automatically waters the plants and a webcam monitors the strawberries' progress.

"It's been a whole new experience for me because I didn't know things like this existed," Do said. Do is taking data on the strawberry plants: the weight and color of the strawberries and how many strawberries each plant is producing.

The goal of the project is to find the best strawberries that can be marketed by private growers.

Sustainability and low cost are part of the group's focus, in order to make the project accessible to many Nebraskans.

The group has kept the costs low by using a greenhouse covered with plastic instead of glass or acrylic. The project is sustainable because the capillary mats use less water than other forms of irrigation.

"What we hope for the next year is Han coming back and saying, 'hey, why don't we do it this way'," Paparozzi said.

Even though she's only been a part of the UCARE program for one year, the research experience has had a profound impact on Do's academic goals.

"When I got to college I was not very gung-ho about my education, but being in UCARE and seeing what more there is after college or with research, really motivated me to do better and to be a better student," Do said.

Now, she wants to go to grad school.

Paparozzi enjoys working with Do and said she hopes they can work together again in the future.

"I enjoy watching her mind work, looking in her eyes and seeing the wheels turn," Paparozzi said.

Paparozzi has participated in the UCARE program since it began and said that working with students is the best use of her time.

"It's the ultimate hands-on opportunity," Paparozzi said.