

## **WISCONSIN NCR-101 REPORT**

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### **Biotron:**

The energy upgrade (Wisconsin Energy Initiative costing \$373 K) is completed and the Biotron is in the monitoring phase of this effort. The Labview software/computer upgrade is in operation. The computer control of the supplemental lighting in the greenhouse complex is set so that when the natural light level reaches 600 PPF the computer shuts off/on the lights. A significant cage washing upgrade is underway to separate large and small animal cage washing. This upgrade/remodeling is estimated to cost \$540,000. The Biotron is at 100% occupancy, and factoring in a project starting April 1, the attached greenhouse will be at 90% occupancy. The greenhouses have higher occupancy in the summer than in the winter because of the difficulty in controlling temperature in conventional greenhouses during the summer. The assignment of Biotron rooms is about 70% animal projects, 20% plant projects and 10% material/product testing.

### **WCSAR:**

The Wisconsin Center for Space Automation and Robotics (WCSAR) is developing a Commercial Plant Biotechnology Facility with over 2400 cm<sup>2</sup> of area for long-term experimentation on the International Space Station. WCSAR has been flying a smaller plant growth unit (Astroculture- ASC) with growing area of 200 cm<sup>2</sup> and a medium unit (Advanced Astroculture- ADVASC) with growing area of 525 cm<sup>2</sup>. These units have provided the facilities for commercial research under weightless in Shuttle Flights and on International Space Station. ASC is currently manifested for its next flight on STS-107 late this spring. ADVASC is presently on the ISS supporting an Arabidopsis growth experiment.

### **Orbitec:**

Orbital Technologies Corp. located at Madison is flying their Biomass Production System (PBS) this month on STS 110 to evaluate its hardware and undertake research on photosynthesis and metabolism of wheat. They are also deeply involved in the development of the Plant Research Units for installation on the planned 3-meter centrifuge on the International Space Station.

### **Publications:**

Goknur, A.B. and T. W. Tibbitts. 2001. Association of dark opening of stomata with air pollution sensitivity of Irish potatoes. *J. Amer. Soc. Hort. Sci.* 126(1): 37-43.

Tibbitts, T. W. and U. B. Mokwunye. 2001. Leaf epinasty induced by reflection of light from beneath marigold plants. *HortScience* 36 (1): 83-84.