

# UA student hopes to grow his career, and lettuce, hydroponically

**By Dan Sorenson**

ARIZONA DAILY STAR

Josh Scott is a University of Arizona entrepreneurial student and mechanical engineer who wants to be a lettuce farmer.

It may sound like a waste of a couple of potentially lucrative, or at least marketable, degrees. But Scott, a student in the UA's McGuire Center for Entrepreneurship, has a few facts on hand that make hydroponic lettuce production sound like money to him.

He says the average American eats about 35 pounds of lettuce a year.

Nearly all of it is grown in California or near Yuma, even the lettuce that winds up 2,000-some miles away on East Coast plates.

Energy prices are down for now, but that won't last.

Water is becoming more precious and expensive.

Interest in locally grown food is taking off, because more people are becoming concerned about food purity, where their food comes from and how far it comes.

Scott says the system has only 10 percent of the water loss of dirt-farming lettuce, a major cost saver.

But bigger still is the reduction of transportation costs in a head of hydroponic lettuce, assuming it can be grown almost anywhere and, therefore, there is no need to transport it more than 50 miles.

The high-density production of a hydroponic system saves money on land, too.

He figures a single acre of hydroponic space could produce 2.5 million heads of lettuce per year. Hydroponics is a method for growing crops in a water solution containing nutrients.

At \$2 to \$3 a head — a price he believes the market will bear for high-quality, fresh Bibb lettuce — Scott says it should be a moneymaker.

So, Scott designed a four-stage modular hydroponic lettuce factory that can turn tiny sprouts into big leafy green heads of Bibb lettuce in 36 days. Sprouting takes 12 days, then the spindly light green plants are placed with their roots dangling through holes in plastic foam rafts floating on a shallow rectangular pond of nutrient-rich water for another eight days. Then the plants are moved to the final two ponds, each for eight more days. The final pond is considerably larger than the earlier ones, to accommodate the rapidly growing plants as harvest approaches.

## First prototype worked

At least that's the way it worked in Scott's first prototype run last summer. A photograph of the lush green Bibb plants from that tiny prototype hydroponic greenhouse setup is part of the logo for Scott's 50-Mile Farms.

The name comes from the concept of creating a system that can produce lettuce virtually anywhere and assure that it doesn't have to be transported more than 50 miles.

## Did You Know

Southern Arizona is a pioneering region of hydroponics.

The University of Arizona has a Controlled Environment Agriculture Center dedicated to research on hydroponics and other technologies.

Eurofresh Farms grows hydroponic tomatoes in sprawling greenhouses north of Willcox.

Working at his second prototype hydroponic greenhouse — a 20-by-24-foot clear plastic half-pipe on the banks of the Rillito near North Swan Road — Scott says: "We thought the time was right for a number of reasons."

The "we" takes in a growing group of collaborators, including an adviser from the McGuire Center at the UA's Eller College of Management and some local entrepreneurs who are drawn to such projects like a bunch of neighborhood guys to a 1966 Pontiac GTO with the hood up.

Bob Horn, a local consultant-mentor-agent-promoter for entrepreneurs, is high on Scott's lettuce factory and signed on. Horn said other local entrepreneurs, loosely networked but with a keen sense of smell for innovation, also quickly took an interest in the project.

Another of Horn's Ad Hoc Business Resources' clients, the makers of the Zeta Rod water-purification system, contributed one of their devices to Scott's project.

And Scott said Anewco Products, a local contract manufacturing firm, may be of help in producing the components for the hydroponic system.

### **Selling lettuce up next**

The next stage, says Scott, is refining and expanding the prototype enough to start selling lettuce at local farmers' markets. After that, he's aiming for local organic markets, although he said current standards don't yet allow hydroponic crops to be certified organic.

From there, it's supermarkets and the Big Box stores.

And then, Scott says, he'd branch out regionally, and possibly east to Atlanta.

At some point, after the short-term business plan, Scott said, he could picture selling the modular hydroponic vegetable factory as a "turnkey" operation. You buy the kit, add water and seeds and become a vegetable farmer.

"We're also talking about turnkey kits that could be placed on top of fine restaurants' or schools' roofs, and grow not only lettuce but herbs," said Horn.

"In that case," Horn said, "Josh would be in the hydroponic business rather than farming."

Scott figures he'll be ready just before Christmas to harvest his first crop of Bibb lettuce from his current prototype hydroponic lettuce factory.

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• *Contact reporter Dan Sorenson at 573-4185 or dsorenson@azstarnet.com*

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