

[an error occurred while processing this directive]

[an error occurred while processing this directive]

Currently: Clear , 60°

[RedRaiders.com](#)

[RaiderGear.com](#)

[LubbockMusic.com](#)

[NeedaCoupon.com](#)

[E-Lubbock.com](#)

### A-J AGRICULTURE

[AGRICULTURE](#) > [Business](#) > [Business Monday](#) > [Stocks](#)

**Sunday, August 20, 2000**

*Last modified at 1:59 a.m. on Sunday, August 20, 2000*

© 2000 - *The Lubbock Avalanche-Journal*

## Researcher plants seeds of South Plains' future

By **KARA ALTENBAUMER**  
Avalanche-Journal



Vivien Allen, Texas Tech professor of plant and soil science displays cotton with rye grass planted between its rows as part of sustainable farm research at the Tech farm near New Deal.

*A-J photo/Jim Watkins*

**NEW DEAL** - From the windows of airplanes headed to Dallas, Texas Tech's research farm stands out from the patchwork quilt of cotton and sorghum fields.

With narrow strips of cotton intermingled with grains, grass and cattle, researchers' efforts at establishing a farm that is both economically and environmentally sustainable sets itself apart from traditional South Plains farming operations.

Three replicated "farms" each have forage grass planted on half of their land, a strip that is continuously planted in traditional cotton bordered by two larger sections that rotate rye, cotton and wheat. The land is drip irrigated, and each of the sections of grain and grass support cattle for about half of the year.

"It's one of the very few of its sort in the country. You can probably count them on one hand," said Vivien Allen, a plant and soil science professor heading up the project. "What it is attempting to do is continue agriculture in the southern High Plains, but in a way that is sustainable for resources, water, economics - however you want to measure sustainability."

In addition to the integration of different crops into one farm, researchers have also adopted other techniques to use less water, equipment and labor. For example, with the exception of the continuous cotton, other crops are planted directly on top of the previous crops' leftover stalks.

That not only saves the labor and machinery used in

### POWER SEARCH

Click category name for advanced search, or use form below for quick search.

[LubbockOnline](#)

[Web](#)

[Stocks](#)

[Classifieds](#)

### SEARCH ARCHIVES

Previous Lubbock Online pages are stored in a **MM/DD/YY** format. For example, the January 23, 1998 edition is archived as 01/23/98. Archives begin 1996.

### MISS A DAY?

[Sun](#) | [Mon](#) | [Tues](#) | [Wed](#) | [Thurs](#) | [Fri](#) | [Sat](#)

[an error occurred while processing this directive] [an error occurred while processing this directive] [an error occurred while processing this directive] [an error occurred while processing this directive] [an error occurred while processing this directive] [an error occurred while processing this directive] [an error occurred while processing this directive] [an error occurred while processing this directive] [an error occurred while processing this directive]

shredding the old crop, it also adds a layer of biomass that holds water in the soil and keeps down weeds, Allen said.

Combined with the drip irrigation system, which uses less water but gets more moisture to crop roots, the crops on the research farm are using less water but still seeing good yields.

"Water is such a huge issue, not just here," Allen said. "It is becoming a major issue everywhere."

*"What it (farm) is attempting to do is continue agriculture in the southern High Plains, but in a way that is sustainable for resources, water, economics ... "*

*Vivien Allen - Texas Tech professor*

It does cost quite a bit more per acre to set up a drip irrigation system, said research associate Philip Brown, but most producers regain that in a year with water savings and increased yields.

"You can set it up on a timer. You can set it up on a 24-hour cycle, seven days a week," he said. "You can set it up ahead of time or with fertilizer. You can set it up however you want. When you put it in the root system, you use less amounts of water."

Researchers have found several other benefits with using a drip system, including time savings and better soil quality. When the surface soil is not wet, as it would be with traditional center pivot irrigation, cattle are less likely to compact soil when they walk on it. In addition, there is less soil erosion because of wind and no time lag when waiting for hay, for example, to dry before harvesting.

"Anytime you have a livestock system, you have to have fences and you've got to cross fences," Allen said. "You can do that with center pivot, but if it's underground, you don't have the problem."

In addition, the edges of fields are not lost by the center pivot trail.

Researchers undertook the project because traditional cotton farming is hard on resources, which are getting more and more precious, Allen said. And more farmers are finding it harder to survive financially.

"Cotton is causing a lot of chemical damage, and cotton is not the money-making part of the system," she said.

"One of the advantages to this is that you have alternative crops. If something happens to one crop, you've got the others.

"You've got a good seed crop from the grass. If the market looked good for small grains, you could pull back the cattle and harvest the grains."

In the Tech experiment, forage grass - not cotton - has proved to be the profit-making part of the operation.

"It uses the least water and is the most profitable," Allen said. "We could now design another system based on all forage and improve the profitability."

Allen said she doesn't expect difficulty convincing farmers to rotate in different crops, but adding the livestock may be a different story.

"I think we are already seeing producers move away from cotton either because of water or economics or insects," she said. "I don't anticipate we will see cotton disappear, but we will see some changes. The more the water situation becomes critical, we will be pushed to alternatives.

"We're basically divided into two camps - crop farmers and livestock producers. There is not much crossover, but I think integration has real potential."

Brown believes that because the system doesn't abandon cotton altogether, it may attract farmers who are looking for alternatives but are uncomfortable with a complete switch in crops.

"I think the data suggests more profitability in the integrated system," Allen said. "Most of that is hedging your bets against the extremes. If something happens to a single crop, you've got to make some major course or rely on insurance.

"Part of the system is finding the crops that give the best results over the long haul for this environment. There is no one solution out here. We're building in options and opportunities based on the individual producer."

### interAct | LubbockOnline.com

- [Back to Top](#)
- [Send this story to a friend](#)
- [Convert this story into a printable format](#)
- [Discuss this story in our Discussion Forum](#)
- [Send a letter to the Editor about this story](#)

This site, and all its [content](#) © 2004 The Lubbock Avalanche-Journal • The Lubbock Avalanche-Journal - 806-762-8844 | [Privacy Statement](#) | [Email Addresses](#) | [Newsroom Contacts](#) | [Newspaper Links](#) | [Need Help with LubbockOnline](#)

**Finalist for the 2002 Press Club of Dallas Katie Award for the Best News Website**

**The Newspaper Association of America 2002 Digital Edge Award  
Finalist for Best News Presentation and Most Innovative  
Use of Digital Media: Features/Enterprise**