

**On being  
a farm wife  
- And other  
hazards  
Joyce Bupp**

Proud. That's how I felt Proud. And awed. And patriotic. And thankful to the Lord above for setting those two courageous astronauts and their marvelous space shuttle down smack in the middle of an ancient lake bed as America triumphed in making space history.

And fascinated. Fascinated because, according to reports, that shuttle could have landed on that desert without Young or Crippen lifting so much as a little finger, if it had been necessary.

A computer could have done it all.

I personally find it mind-boggling that a spaghetti-like mass, compounded of thread-thin wires and microchips, can be so unbelievably smart and instantly responsive.

But such built-in homing devices, which can bring a massive space machine hurtling back to earth right on a dime,

aren't all that new when you think about it.

Mother Nature built them in pigeons aeons ago.

And we've all read these stories of lost cats and dogs that found their way across thousands of miles to their masters.

But few people know that cows have the most sharply-honed homing devices ever designed.

These "cowcomputers" are buried deep in the mental mechanics of every dairy cow. They're seldom used for such mundane activities as finding the right stall or the correct gate, but rather saved for special occasions.

Dorie, for instance, used hers just last week. The farmer had taken her baby to the calf pen, so Dorie slipped her stall barn seat belt to fly off seeking a reunion with her daughter.

With a hundred acres of greening alfalfa and lush oats and barley in which to land, Dorie's computer

LITITZ — Last summer was a "Killer." Heat and drouth took its toll on crops from the Rockies to the Atlantic. But such conditions can be an advantage for plant breeders looking for tolerance to these stresses.

For example, corn hybrids with improved drouth tolerance are available as a result of intensive research conducted in dry growing conditions the past few years.

"One of the more important plant characteristics for drouth tolerance is a large, fibrous root system," says Ken Wrede, manager of Funk Seeds International's Seward, Nebraska research station.

zoomed her from orbit into the set-down zone programmed into every dairy cow that ever lived.

The farm wife's vegetable garden.

While landing, she crashed through the carrots, riddled the radishes and pock-marked the potato patch.

Why Mother Nature couldn't be satisfied with giving a cow four stomachs and that neat milking equipment, and left out the computer, I guess will remain one of the great mysteries of the universe.

I'll ponder that while I go repair the computer craters.

**Heat, drouth aid  
hybrid development**

"A well-developed root system is less likely to be affected by drouth since there are more roots to pull water from the ground," he explains. "This particular characteristic also allows for more efficient nutrient uptake."

"Sturdy brace roots to hold the plant up are essential as well," Wrede adds. "Root lodging is possible if the plant fails to develop a strong brace root system."

In addition to a well-developed root system, hybrids must show minimal leaf scorch, even when grown under the most severe environmental conditions.

"We choose as parents those inbreds which tassel and silk at the same time to assure optimal conditions at pollination," says Wrede.

Another desirable trait is a larger ear size, or, if possible, double ears. This helps boost yields even if weather stress requires reduced planting populations, Dr. Wrede says.

Also, cold tolerant hybrids will play a key role in the fight against moisture stress. Corn planted early tassels sooner and generally beats the heat that can reduce seed set.

Researchers are now breeding hybrids with superior ability to

germinate and grow under cold stress.

"In the future, we hope to push planting dates in Nebraska up to mid-April where possible," Wrede says. Other stress-fighting characteristics breeders look for under poor weather conditions are resistances to disease and insect infestations.

Wrede points out that moisture demand by corn is most crucial starting a week or two before and continuing through the pollination period. In fact, 70 percent of the corn's total water requirement is consumed during reproduction.

"Generally, even if there is moisture stress at the pollination stage, the tassels will emerge and shed pollen," he explains. "But there are cases when severe heat combines with dry winds to kill the pollen. High temperatures and low humidity can also reduce the receptiveness of the silk."

Although recent heat and dry spells have had an adverse impact on crop production, researchers find they can use those conditions to their advantage, for breeding the new tough, high-performance hybrids that are needed to give consistently high yields under a wide range of growing conditions.

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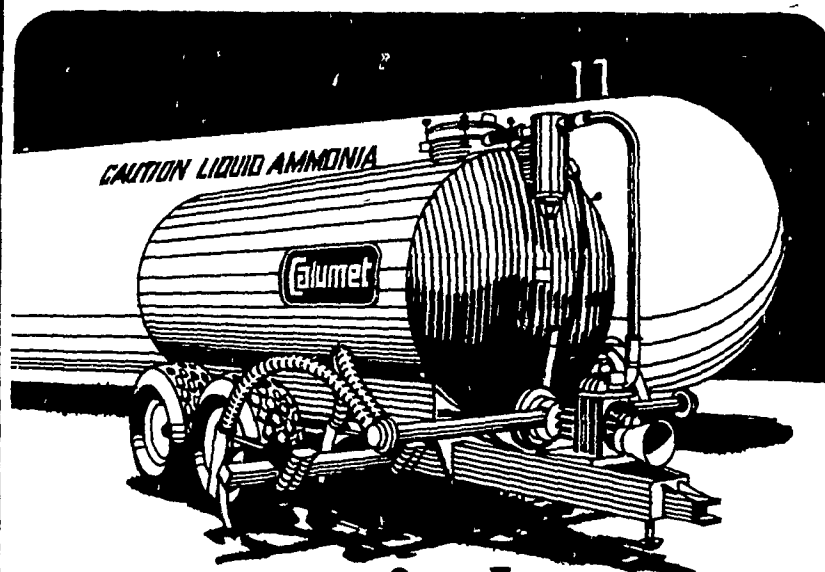
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