

## 08/09/05 - Attack of the 12-foot horse weed: Herbicide-resistant strains plague California farmers

*By Juliana Barbassa, Associated Press*

Horseweed was once merely a nuisance to farmers hard to pull out, quick to sprout back after cutting, and capable of towering over tractors.

Now, it's becoming a full-blown nightmare worthy of an agricultural horror flick. Scientists in California have found clusters of the weed that are resistant to scores of herbicides, leaving farmers to fight an increasingly formidable and costly foe.

Pete Christensen said he watched his costs soar as the most popular herbicide became increasingly powerless to stop the weeds from choking the grapes on his 75-acre vineyard near Selma.

About five years ago, he started noticing that Roundup wasn't withering the weed as usual. Three years later, he had tripled the concentration of the herbicide, and had doubled the applications, but the weeds were growing thicker than ever, rising over his vines and competing with them for water, nutrients and sunshine.

"It was dominant in the landscape," Christensen said.

The weed, also known as mare's tail, has always been around, but it wasn't until last month that University of California researchers confirmed that some strains of it had become resistant to herbicides, posing a threat to the nation's most productive farmland.

Researchers were alarmed by the weed's rapid proliferation. Its spindly stalks can be seen poking out of Napa Valley vineyards in the North, along highways and pastures in the Central Valley and in Southern California fields.

Farmers elsewhere have been dealing with resistance to the chemical glyphosate. First found in Delaware in 2000, glyphosate-resistant horseweed has since been found in 10 other states in the East and South.

Farmers dealing with the problem have been forced to repeatedly till their fields, rely on weeding, or on more toxic herbicides to control the tall, fast-growing pest.

Developing resistance to a chemical isn't unusual among plants and animals, scientists said. What makes the horseweed adaptation such a nuisance is how fast it reproduces and how big it grows, sucking up scarce water and nutrients as it stretches 10 or 12 feet tall.

As a relative of the dandelion, each weed produces up to 200,000 tiny airborne seeds a season on fluffy yellow flowers.

For decades, growers, gardeners and anyone looking for an easy way to beat back

weeds have relied on glyphosate. It's inexpensive, works on several types of weeds and is less toxic than other pest-control ingredients.

Farmers planting Roundup-Ready crops such as corn, soybeans or cotton that have been genetically engineered to survive the chemical could spray it liberally over their entire field, killing all weeds and leaving only their crops standing.

The herbicide's popularity may be partly to blame for breeding the resistance, researchers said. By killing nonresistant weeds, it allows only the survivors those few naturally resistant plants to thrive.

"They've created a problem by relying on one solution to solve all problems," said weed ecologist Anil Shrestha of the University of California's Kearney Agricultural Center.

Some scientists said the development wasn't surprising.

Systems like Monsanto's Roundup-Ready crops, which promise an easy, one-chemical solution to the age-old problem of weed control, only work for a short time, said Margaret Mellon, director for the Food and Environment Program at the Union of Concerned Scientists.

"When you expand the use of an herbicide dramatically, resistant weeds start moving in," said Mellon.

Bob Prys, a manager for the 13,000-acre Borba Farms, said the weed became a problem just three or four years after they started growing Roundup-Ready cotton on the 500-acre ranch. They sprayed the field, killing everything but the cotton plants, and saving money by having to till their fields less frequently.

Now Prys said they're relying on weeding again and adding other chemicals to their herbicide mix adding unexpected costs to the higher price they pay for Roundup-Ready seed.

"It's caused us to re-evaluate our Roundup-Ready cotton," Prys said.

Monsanto researchers recommend mixing in other chemicals to eliminate the threat before there is a problem, said David Heering, the Roundup technical manager for Monsanto.

"At the end of the day, they'll still have fewer passes through the fields, and fewer weed-control problems," Heering said.

The UC scientists recommended rotating crops, cultivating the land with farm equipment, weeding, and using herbicides that kill the seeds in the soil before they

germinate.

Those measures will increase costs for farmers, but will prevent a more serious and costly problem later on.