

Better sorghum on horizon

By JACQUI FATKA

ACCORDING to a recent Kansas State University survey of more than 600 sorghum producers, grassy weed control is their number-one research priority.

Now, three entities are working together to develop a non-genetically modified (GM), herbicide-tolerant grain sorghum.

Plant breeding technology company Cibus LLC and The National Grain Sorghum Producers Foundation (NGSPF), which is affiliated with the National Sorghum Producers, are partnering with Valent U.S.A. Corp. to bring the first non-GM, herbicide-tolerant grain sorghum to the marketplace.

Cibus' gene conversion technology, known as the Rapid Trait Development System (RTDS), will be used to develop this new trait in grain

sorghum, providing high tolerance levels to Valent's post-emergence grass herbicide brand, Select Max Herbicide with Inside Technology.

Cibus president Keith Walker said the technology has proven itself in the laboratory with several different crops, including tobacco and rice, as well as in initial field trials in canola.

RTDS works through the cell's natural process of gene repair. Every time a cell copies DNA, it makes "scrivener" errors, or spelling mistakes. These variations happen all

the time, which is how natural variation occurs. Cibus' technology harnesses the cell's own natural DNA repair machinery to correct such spelling mistakes, thus directing DNA repair enzymes to correct and repair the targeted gene in a specific way in order to produce a desired trait.

The process, in its preci-

sion, is similar to altering a single letter in a word within a large book. Nothing in the genome, other than the changes directed by the process, is altered by this approach.

Walker explained that the complete genome sequencing of rice and corn provide a terrific asset in the research. Sorghum is a bit more difficult than rice and corn in its molecular structure but is similar to rice in some aspects.

If everything goes as planned, Walker said Cibus plans to hand off seed modified to carry the trait to NGSPF in the next two to two-and-a-half years. The foundation will then secure the development of finished varieties for sale, a process that could take an additional couple of years.

Farmer investment

NGSPF plans to use revenues derived from this partnership to reinvest in sorghum

research and development as part of a long-term program for sorghum improvement.

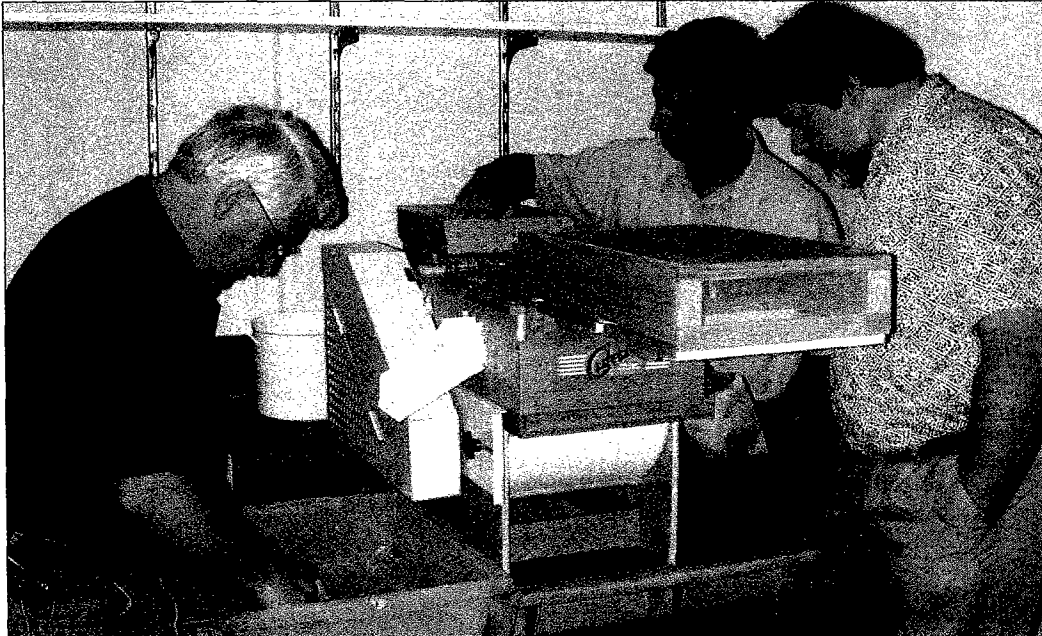
Walker said over the past 15 years, most technologies in the marketplace were deployed in very large corporations.

"Those organizations haven't needed or wanted any input from grower groups. Now, American sorghum farmers are beneficiaries of this technology and are essentially part owners of the technology themselves," he said.

Plus, since RTDS can develop non-GM traits faster and at a lower cost than transgenic alternatives, this will save farmers an estimated \$25 million per crop.

Walker added that Cibus is interested in working with other grower groups looking for ways to develop profitable solutions for their members.





GENE TECHNOLOGY: Scientists at Cibus — including president Keith Walker, senior vice president of research Peter Beetham and research fellow and senior cell biologist of the canola program Christian Schöpke — process an experimental line from RTDS to be collected and planted in research plots.

Key Points

- Herbicide-tolerant sorghum expected in market in four to five years.
- RTDS technology works through cell's natural process of gene repair.