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## Corn Hybrids Selected For Flavor

Keith Williams is developing new corn hybrids with specific flavor notes and other attributes for specific uses. The corn breeder works with chefs, brewers and distillers to find the best hybrid for each. Next year, his company Creative Botanics will be releasing its first new (yet-to-be-named) corn hybrid for specific uses.

“Our first hybrid scores very high for flavor and aromatics with nutty overtones and works well in fermentation processes such as brewing, spirits and sourdough baking,” says Williams.

Unfortunately, taste alone doesn’t guarantee

a market. While it makes a masa (fine corn meal used in tortilla making) with good flavor, the masa is brownish. “Most folks like yellow or white tortillas,” says Williams.

Different attributes of a particular hybrid can make it preferred for a particular use, notes Williams. “Chefs from different traditions, work with corn in different ways,” he explains. “As we finish work on 20 advanced hybrids, there may be one that is very good for tortillas, but not for polenta or great for cornbread, but not for beer.”

It was the taste of cornbread that diverted Williams from conventional corn breeding.

While working on developing a 98-day hybrid for southern Minnesota, he was looking at various older corn lines for disease resistance.

“I took one home and ground it for cornbread,” he recalls. “It tasted completely different from what I knew cornbread to be.”

He began working with chefs, brewers and distillers to evaluate old corn lines for flavor and other characteristics. At the same time, he set a threshold for acceptable agronomics, including disease resistance, standability and yield.

“You can definitely pull different flavors out of different color and genetic backgrounds,” says Williams. “Two flint corns can be closely related as far as pedigree, but end users will give a thumbs up for one and not the other.”

Williams has found that flavor is just one factor. How the corn will be used, whether baking or cooking, and in the case of sourdough, even how long it ferments, can change the flavor.

“In brewing and distilling, it can depend on how they brew, the mash process, and the equipment they use,” says Williams. “I used to think selecting for yield was complicated, but yield is simple compared to these different factors.”

Williams started his work in 2016 in the Midwest and the Northeast. He has received support in the effort from Row 7 Seed, a Hudson Valley seed company. Row 7 Seed works closely with chefs to find, grow and market unique varieties.

This past year Williams produced enough

seed to produce 300 acres of the new hybrid in 2023. He is currently selecting potential growers to grow it out.

“We know flavor is a matter of where it is grown,” says Williams. “This hybrid has been tested in the Pacific Northwest, the Midsouth and the Midwest. It has been trialed in Kentucky bourbon country, but it doesn’t have the same qualities or flavors as the same hybrid grown in the Midwest or Northeast.”

He is looking for growers with experience in specialty corn lines or who are willing to adapt their processes. They will need to segregate the new hybrid from other hybrids by distance or planting date to prevent cross-pollination.

“The key will be that they know how to produce a good corn crop,” says Williams. “We are also working to identify interested end users. In some cases, we will help set up a direct pipeline.”

He promises the growers something they won’t find with most older open-pollinated corn varieties like Bloody Butcher or Jimmy Red.

“Our hybrid has color, flavor and zing, plus it will emerge and grow uniformly and stand until it is combined,” says Williams. “We are expecting a target yield of 100 to 150 bushels per acre in an organic system, depending on population density.”

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Corral Technologies remote collars allow the operator to set up, contain or move cattle via cell phone without a physical fence.

## GPS Collar Lets You Move Cattle By Phone

Equip your cow herd with Corral Technologies’ collars and you can move them from your computer, cell phone or tablet. The collars allow the operator to track individual cow movements, where they grazed and how active they are. The solar-powered units move them from virtual paddock to virtual paddock, no cross fencing or base station needed.

“Once you move cows into a new area, they will stay there until you decide to move them,” says Jack Keating, Corral Technologies.

Moving them to a new area is as simple as indicating a new fence line and sending instructions to the collars. Corral’s control units are topped by mini-solar panels that store power in the onboard batteries. They also contain transponders that communicate with the operator’s cell phone and a microprocessor that stores the latest instructions.

“Even in patchy cell service, we are good to go,” says Keating. “The sustainment logic doesn’t require service. However, if you want to get data or move them, you do need service.”

Control units have speakers on each side

that deliver audio alerts. Light electric shocks are delivered via chains to the left and right of the control units. A weight hanging below the neck on the chains keeps the control unit in place.

To move a cow left toward a new pasture, a sound alert is issued to the right side of the control unit. After a second sound alert, a light shock is delivered to the chain on the right side encouraging the cow to move away from that side. As with an underground fence dog collar, shocks increase in intensity if the cow doesn’t react.

“The cow quickly learns to react to the first sound alert,” says Keating. “We do suggest a 5-day training period before turning the cows into a large pasture.”

Recommended training is carried out in a smaller pasture with access to water and one area fenced virtually. As cows attempt to cross into that area, they receive the audio and eventually electronic stimulus. When another area is fenced and the first is opened up, they become familiarized with the collar messaging.

Keating gives credit to his father for questioning why there wasn’t underground fencing for cattle, as they fixed fence on the

family’s Kansas ranch. While in college, Keating began working on a solution and developed what is now the Corral Technologies collar. This past year the collar has been field tested.

“We worked with three ranchers and had 120 units in the field,” says Keating. “We were able to draw virtual fence lines and control the cattle with the collars.”

As word about the system has spread, Keating has received calls from more than 200 interested cattle producers around the world. “I’ve talked to cattlemen from Canada, Ireland, Mexico and Brazil,” he says.

Current plans are to roll out around 2,000 collar units for the 2023 grazing season. Around 1,500 have been pre-ordered by ranchers eager to try the technology.

Individual control units and the software/apps needed to operate them are priced at \$120 per year. Keating is confident customers will find the price competitive with similar technologies being introduced to the market.

“Our batteries can hold a charge for an extended period of time, and our goal is to only replace the devices every 2 years,” says Keating. “The collars will provide savings in time and cost over cross fencing and physical moves. We have found they also improve pasture utilization by 35 to 55 percent.”

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Heavy-duty control units work even in patchy cell service areas.



“Squarvel” tool can level, square, measure or lay out a miter on any material.

## Combination Tool Ideal For Wide-Ranging Trade Jobs

Drawing from his 34 years of experience in the construction and trades industries, Chuck Harris designed and patented the “Squarvel” tool, a tri-square, speed square, and level combination.

“This tool can be used for all skilled trades including plumbers, steamfitters, millwrights, ironworkers, carpenters and electricians,” says Harris. “With fabrication or construction, it can be used to build hangers or supports for pipes, electrical conduit and other machinery.”

Harris adds it’s also handy in farm shops and garages to level, square, measure or lay out a miter on any material.

The Squarvel is designed with three vials to level within a horizontal, vertical or 45-degree plane. It features degree marks to lay out a miter on lumber or steel plus 1/8-in. increment markings to measure and lay out material. The ends are 45-degree angles to use as a square in a corner or over a weld or block.

“I’m looking for a machinist to make them for me,” Harris says. “Either that, or I’ll sell licensing rights in return for royalties.”

Harris invites all inquiries about the Squarvel.

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