In 1925, Heinze designed a motor cultivator that pulled a sulky-style plow and field cultivator. Like his earlier tractor, none were actually built.

Inventor Launched A 4-WD Tractor in 1919

Ask modern-day farmers if they know what John Heinze was famous for, and 99 times out of 100, they'd probably say ketchup. They'd be wrong, because Henry Heinz was the ketchup guy. Only those well-versed in early 1900s tractor history would know that John O. Heinze Jr. invented, patented and built what many consider to be the very first four-wheel-drive (4-WD) tractor. The rare iron horse known simply as the Heinze 30-40 tractor was first promoted at the 1919 National Tractor Show in Kansas City.

Heinze, at the time, was in his mid-40s and reportedly had more than 60 inventions to his name. Among them were electric appliances, magnetic wheels, X-ray tubes, starters, and several automotive components. The Heinze Electric Company was a large supplier of electromagnets, ignition systems and magnetos for cars, trucks and tractors. His businesses supplied parts to nearly every automobile manufacturer, including Ford. In his spare time, Heinze focused on developing the tractor that debuted in Kansas City.

Visitors to the show were intrigued by the 30-40's simple design. Heinze even built the small engine that transferred its power to a central driveshaft, which then powered all four cleated steel wheels through chains and sprockets. Since all four wheels were the same size and powered simultaneously, steering was done similarly to a modern-day skid steer. Pressure was applied to drums on each side of the driveshaft at different levels, so one set of wheels would receive less power, allowing the other set to turn the tractor.

The operator sat on a steel seat behind the engine under a canopy similar to those on large steam engines. There was no steering wheel, only a control lever. Because Heinze knew electronics, headlights and taillights were standard to allow fieldwork at night.

Heinze demonstrated the 30-40 at several shows, and according to written records, received orders for 25 tractors. He envisioned producing these and many more at the Traction Motor Company in Boyne City, Mich. Unfortunately, the $2,000 price tag, along with poor capitalization and stiff competition from more than 150 other manufacturers, ended the operation. The 25 tractors were supposedly never produced.

Heinze, however, wasn't finished inventing. Writing from a winter home in Lakeland, Fla., in 1925, he sent editors of several farming magazines pictures of a new dedicated cultivator tractor he was planning to build in Alabama.

It had four narrow steel wheels, nearly 5 ft. tall. A long tubular frame, positioned nearly 6 ft. above the ground, was supported by angled bracing. A small 15-hp engine, just 11 in. long, powered the front wheels. The driver sat on a steel seat just above the center and slightly behind the rear wheels. Pictures showed the tractor cultivating rows of vegetables and pulling a narrow furrow plow similar to a horse-drawn sulky.

Always one to convey strong selling features in print ads, Heinze claimed that a farmer riding his power cultivator could do the work of three mules. The tractor also had a belt pulley to power various grinders, shellers and saws of the time. Several stories say that Heinze initially planned to produce 10 tractors per day at the Alabama plant. A larger planned expansion would eventually turn out 100 a day. No production line tractors were ever built.

Heinze, however, still wasn't done inventing. In the late 1930s, he designed and built a model rapid transit system for Detroit that would utilize 50-passenger buses on an elevated roadway. Detroit didn't adopt his design, but they did develop an elevated light rail system in the 1970s, long after Heinze had passed away.

In 1945, 72-year-old Heinze appeared in a Birmingham, Ala., newspaper story describing his futuristic automobile with two drive wheels in the middle of the body. Like the tractors, it was never produced. Eleven years later, in 1956, Heinze posted a classified ad in a Birmingham newspaper to sell his nearly 1,000 volumes of technical papers. It's unknown if anyone bought the library, what became of Heinze, or where he passed away.

Despite his anonymity, many of Heinze's inventions, especially those in electronics, 4-WD vehicle control, and skid steer technology, have been modernized and are still utilized today.

Consider Kangals As Livestock Guardian Dogs

From a distance, you might confuse a Kangal with a yellow lab. Both have tawny fur and happy faces. But up close, this massive canine makes a very different impression.

Kangals have black features and curled tails, with fawn or dun-colored bodies. They have deep, blunt muzzles and dense, silky coats that are especially thick around their necks. Each is packed with muscle and slightly longer than tall. Until recently, Kangals were considered the same breed as the Anatolian Shepherd Dog. They now have a unique breed standard from the FCI and the Kennel Club.

Legend says that Kangal shepherd dogs, often called Turkish Kangals, were originally bred to protect villagers from bear attacks. Today, they serve as livestock guardians. The name comes from the Central Anatolian town of Kangal, Turkey. The breed shares close genetics with other dogs from Kazakhstan, Uzbekistan, Tajikistan and Afghanistan, providing further evidence that they were brought from Central Asia by nomadic Turks.

The breed was created to stay with livestock without a handler, which offers potential for some creative uses. In Namibia, a pack of 300 Kangals, sponsored by the Cheetah Conservation Fund, protects livestock from cheetah attacks, reducing the number of big cats killed by farmers in retaliation.

Kangals are usually not aggressive, which sets them apart from other livestock guardians. Instead, the breed waits and watches before attacking, typically only responding if perceives a threat. This makes them less dangerous to harmless animals. However, they often perceive any shouts from their owners as encouragement to continue the attack. For that reason, it's best to stay quiet if a fight breaks out so as not to encourage them.

Should you invite a Kangal to your farm or home? Like all dog breeds, they have pros and cons. Training them can be challenging, and they're definitely not suitable for city living or inexperienced owners.

Prospective Kangal owners should have large, rural properties with secure fencing. Plan to dedicate plenty of time to training in the early months, as it takes some conditioning to teach them to listen to authority. Expect adult Kangals to need at least two hours of exercise a day. They can run up to 30 mph, so provide ample space to move. Without enough physical and mental stimulation, the breed will become destructive and prone to barking.

Kangals are extremely loyal to their families, so they can be wary of strangers and other animals. It's best to socialize them with children and other dogs early on, but even then, the breed tends to bark frequently and can be territorial.

Adult Kangals need at least two hours of exercise a day. They can run up to 30 mph.

Plan to brush the dogs a few times a week, but their dirt-resistant topcoat means they rarely need baths. Make sure you consider a Kangal's size. These are some of the largest breeds in the world, and they need space to stretch out and roam. With proper care, these protective giants can live 10 to 13 years.

Siberian Peach Trees Survive Bitter Cold

Siberian peach trees have a cold tolerance of -45 F, which proved out when aND's orchard was hit with a polar vortex, not once but twice.

USDA researchers introduced the Siberian peach tree for use as rootstock, but a southwest Wisconsin fruit and nut tree breeder has developed it for its fruit. mIEKAL aND (preferred spelling) has been working with the variety for more than 20 years. Initially, selection was accidental.

"I had purchased a bunch of stuff from a nursery that specialized in permaculture in 1992, including some Siberians advertised as rootstock for grafting," recalls aND. "I never grafted them, and in a couple of years, several had produced fruit. Only half of them were pickable, and the rest were tiny and mealy."

He planted the pits, and when they fruited, found some with flavor. Their pits were planted in turn, and as they bore fruit, he continued to select for flavor. The selection process was jump-started when some displayed rapid growth and maturity.

"I had some that were precocious and reached 15 ft. in height and flowered in only three years," says aND. "I kept selecting from the best and growing them out."

The cold tolerance of up to -45 F promised by the USDA proved out when aND's orchard was hit with a polar vortex, not once but twice. The Siberians survived. He had previously planted Iowa Indian White, also touted for its cold tolerance.

"The Iowa Indian White died back to the ground, but none of the Siberians did," says aND.

His select Siberians are now in their sixth generation.

"They're small, only about 1 1/2-in. in diameter, but delicious."

While he continues to seek improved selections, he's also begun to commercialize them. He sells seedlings at a local farmers market. Learning of his success with the Siberians, a couple of nurseries purchased pits to germinate and grow out a few years ago. Since then, other fruit tree breeders have begun ordering pits. They are priced at 10 pits for $15 or 100 for $100.

What aND doesn't do is sell the peaches whole. He's a long-time maker of wines, meads and vinegars. Most are sold at his local farmers market, where he also sells more than 20 different cold-hardy cultivar seedlings, salsas and more.

"I juice the peaches, so I can keep the pits for replanting," he says. In 2024, he introduced a peach nectar, and he also sells peach vinegar.

"The peach nectar sold out every week," says aND. "The Siberian has a stronger peach flavor than other white peaches. It's not just sweet, but has a little zing to it. It makes a really good nectar, and with its low pH, it can be sold as fresh juice at the farmers market."

Cold-weather peaches aren't the only trees aND is working with. Others include pawpaws, pecans and Perry Pears, used for making pear cider.

His Perry Pears are attracting attention with several nurseries now selling them.

He also sells cuttings for figs, elderberries, currants, grapes, kiwis, goji, and 16 varieties of willow. Scion wood is available for mulberry, crabapple and pears.

A listing of available cuttings, scion wood and seeds, along with pricing, can be found on his website.

Contact: FARM SHOW Followup, Nursery & Forest Gardens, Dreamtime Village, 10375 County Hwy A, West Lima, Wis. 54639 (ph 608-625-4619; people@dreamtimevillage.org; www.beyondvineyard.com; www.facebook.com/beyondvineyard; www.facebook.com/driftlessgrove).