

Feature

A simple idea





A SIMPLE IDEA

At the tender age of 31, David Sole has moved across oceans, finished veterinary school and invented two world-first veterinary tools. And that's just the start.

By Matt Philp

David Sole reckons there's nothing extraordinary about his achievements – that he's just a guy who happens to have been in the right places at the right times. But how many final-year veterinary students do you know who've invented, provisionally patented and publicly demonstrated world-first veterinary tools? Or founded their own startup in the field of agricultural technology?

David, 31, took two instruments of his own design to the North Island Fieldays in June. One was for dehorning cattle; the other used a common power drill to mechanise a fetotomy (as a reminder to those who haven't worked with large animals in a while, this is a procedure that traditionally involves dissecting and removing a deceased cow fetus using abrasive wire and elbow grease). Both innovations could be game-changing, and make David's

'SoleTech' venture an export success story. And he hasn't even graduated yet. "This wasn't my plan," he says. "I never thought I'd invent something."

It was David's veterinary studies at Massey University that opened that door, and specifically a 2020 class on dehorning, which involved the use of abrasive wire. "Archaic," thought David. Then Massey senior lecturer Kevin Lawrence introduced the class to the fetotome, which essentially comprises two pieces of stainless steel tubing through which wire is threaded. You loop the wire around the object you want to cut, then use the attached handles or enlist the farmer to do the grunt work.

"It was literally invented before the steam engine, and the design hasn't changed in 100 years," says David. "I thought it wasn't right that in 2021 there was still a surgical procedure that relied on brute strength. That's when the idea was planted in my head."

David figured that every farmer and veterinarian had an electric drill. Why not take that electrical power and put it to work to make a fetotomy faster, more efficient and easier on the cow?

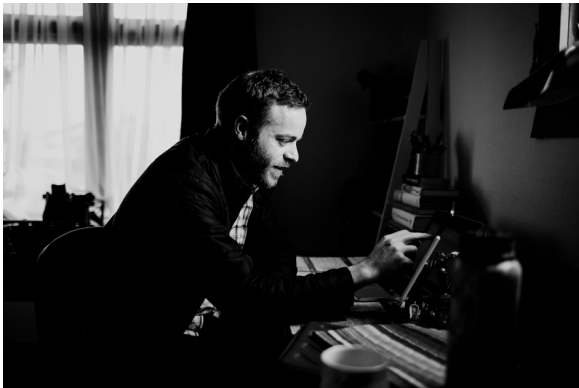
During lockdown David sketched up a design and ran it by some engineering mates – and they all gave it the thumbs up. On the suggestion of one friend he entered his 'Fetotomizer' in Massey University's Grand Ideas \$5,000 challenge. He won first place and an introduction to his now mentor, veterinarian and inventor Garth Riddle, who opened his eyes to the idea of a second product – the dehorning tool – and the even bigger market it could reach. "I wouldn't have designed it if Garth hadn't made it obvious that I should."

Similar to the Fetotomizer, the dehorning tool uses power tools to augment traditional, manual wire dehorning tools. It's a faster, easier and more gentle way to remove the horns of older cattle, when necessary by the appropriate person with pain relief. It has potential in some overseas markets, David explains, where less emphasis is put on disbudding calves early or breeding cattle without horns.

David's next steps were to apply (successfully) for a \$5,000 'Getting Started' grant from Callaghan Innovation, engage an

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(Pictured) Inventor-entrepreneur David Sole in his Palmerston North workshop. He says he is driven by animal welfare and sustainability, as well as the hope of one day providing educational scholarships funded by his business.

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intellectual property lawyer and employ a Hamilton-based professional industrial designer (who’d worked previously with veterinarians) to develop prototypes of both tools. Later this year the designs will be finetuned and finessed, with the aim of

starting mass production by winter 2022.

David says he had no master plan to become an inventor-entrepreneur, but the venture was probably seeded when he was a boy growing up in South Africa. The family had a swimming pool, and one

of David’s early memories is of swimming with his father Tim, a paraplegic following a car accident in his second year of medical school, who was using a pool noodle to float. “He said, ‘David, the man who invented this thing is a millionaire now.’ I was

fascinated by the thought that even the simplest idea can have financial success. I guess I’ve been looking for my own pool noodle idea for my whole life.”

The family moved to New Zealand in 2003 when David was 13. Tim, an internal medicine specialist, had secured a job as a physician. “He’s my hero,” David says of his father. “He managed to graduate medical school after his accident without taking any time off. I’ve never been hunting, fishing or played rugby with my dad, but he challenged me mentally and taught me to think.”

David studied physiotherapy in Dunedin, and later found work and settled in Queensland, Australia. However, he changed his career trajectory when he met his Aussie girlfriend’s father, a veterinarian with an 80-hectare farm and his own

veterinary clinic nearby. “I was finding physiotherapy a bit mundane; it wasn’t stimulating me enough. When I met him I thought, ‘This guy has life sorted. I wouldn’t mind being a veterinarian.’”

A move to Palmerston North followed, and by the end of his first year of veterinary studies David knew he’d made a good call. “It’s such an amazing, challenging field. With physiotherapy you use your hands and you give exercises, but veterinary medicine

has a much wider range of practice – veterinarians really do do it all.”

Having said that, David’s focus post-graduation will undoubtedly be more on the business venture than clinical practice. He’s bullish about the global market opportunities for tools that make life easier for veterinarians and animals – especially given that his inventions are breaking new ground.

“It’s a really big industry, they’re both brand new inventions, and there are

no competitors around the world. I’m touching wood here, but I think there’s potential for a lot of growth,” he says, adding that his strategy is to adopt a ‘printer and ink’ approach, making the tools affordable but manufacturing and selling the wire on subscription. “Eventually I hope that every veterinarian has the tools, and the ongoing revenue will be from the wire.”

Beyond these two innovations? “A lot of the technology and methods

used in veterinary medicine and farming haven’t changed in 60 years,” David remarks. “There’s plenty of potential for mechanisation and automation in the field. If I have some commercial success, I want to position SoleTech as an innovative company and look to produce a series of tools like these.”

You may think that David is in thrall to the lure of fame and fortune – but he’s far from it. His biggest drivers are animal welfare and sustainability, and his ultimate ambition as an entrepreneur is to create a business that can fund educational scholarships. “I think the next big shift in society will be through education. I’ve been so blessed to have family supporting me to do all this, and I imagine one day being able to give back and provide opportunities for others. That’s what motivates me.”

Matt Philp is a freelance writer. He began his feature-writing career at the New Zealand Listener and has been a senior writer for Metro, The Press and North & South.

