The BHU Future Farming Centre
Permanent Agriculture and Horticulture Science and Extension

Dr Charles N Merfield
The BHU Future Farming Centre
PO Box 69113, Lincoln 7646
Canterbury, New Zealand
P: 03 325 3684
M: 021 0231 8901
E: charles.merfield@bhu.co.nz
W: bhu.org.nz/future-farming-centre

Hi

Electrothermal weeders are a 'back to the future' technology that has been widely researched in the past, especially in the 1980s, but failed to gain traction due to the dominance of herbicides. Electrothermal is now back, with one of the key researchers from the 1980s, Dr Mike Diprose, coming out of retirement to bring it back to the market, though the start-up company Ubiqutek (http://ubiqutek.com/) . The resurgence of electrothermal is hugely important because electrothermal is the only non-chemical weed control technology that has a systemic weed kill effect, i.e., its as close to a non-chemical glyphosate as is ever likely to exist. With Roundup resistance growing exponentially, along with other herbicides, and a growing demand for non-chemical weed control technologies, that electrothermal is back is big news. For more information on electrothermal please see the FFC Bulletin article http://bit.ly/2AzA48r

While Ubiqutek are putting electrothermal weeders back on the market the first machines are 'only' hand held weeders aimed at the urban weed control market, e.g., councils, and their contractors. With their current limited personnel and financial resources it will be some years before machines aimed at agriculture and horticulture are produced. I am therefore starting a project to accelerate the design and demonstration of electrothermal machines for commercial producers. This letter therefore aims to explain the project and garner support.

In any normal situation, Ubiqutek and their NZ distributor Hotgrass (http://hotgrass.co.nz/) as the owners / suppliers of the weeders would be developing field weeders themselves, however, not only are both very small business start-ups with limited resources, they also lack expertise in what is required from field machines especially for the different sectors, e.g., pasture, cropping, viticulture and other permanant crops, and therefore how to design them. The aim of the project is therefore to not only accelerate the development of a field weeder so that NZ farmers & growers can get weeders designed to meet their needs much sooner than would occur without the project.

Clearly Ubiqutek and Hotgrass also stand to benefit from this project, and, they have therefore agreed to contribute to it as well. Ubiqutek have agreed to contribute:

- Design and specification of 50Hz transformer with variable voltages
- UK build of transformer and shipping to New Zealand
- Build costs for 50Hz transformer
- Remote support during integration of 50Hz transformer with mechanical platform
- Supply of samples of next generation modules
- Redesign of next generation modules for higher voltages (if required)
- Remote support during integration of next generation modules with mechanical platforms

Hotgrass will contribute

- Construction of electrical components in NZ
- Contribution financially of up to $20,000 towards the project
- Development and delivery of a training package for operators
- Eventual manufacturing of field machines (via third party)
- Sales and marketing of the product

The project timeline and outline is:

(1) To get a list of producers interested in the project together over the next couple of months, e.g., middle of February.

(2) Once the level of interest has been determined, then, a project plan with costings will be drawn up, and, the amount of funding required from farmers & growers will be determined. I'm hoping that this will be around $500 to $1,000 depending on how many people are interested. Only then will producers be asked to commit to the project. Two amounts will be proposed, one, based on securing AGMARDT funding (see below) and the higher one other should funding not be secured.

(3) A funding application will be made to AGMARDT (deadline 6 March or 22 March 2018 (TBA)) to leverage the cash contributions from producers. The current AGMARDT board are very keen on cutting edge / slightly risky projects, and this project should be right in the sweet spot. The Future Farming Centre has also had two other projects recently funded by AGMARDT, including soil thermal weeding, so, it has a good track record.

(4) The demo machine will be built over winter, ready for demonstrations during the following spring and summer. Demonstrations will be held around the country so that all the producers who have contributed to the project can see the machine in action and what it can do.

(5) After the machine has been demonstrated and designs finalised, Ubiqutek and Hotgrass will then be in a position to manufacture and supply machines.

The reason the weeder is called a demonstrator, is because there was a very substantial amount of research done and commercial machines built and used in the 1980s. This included in field crops, and even a machine that killed 20 foot high scrub - see http://bit.ly/2jtYndN for photos. Electrothermal has therefore already been shown to achieve a systemic weed kill on a wide range of plants and production scenarios, so, no actual research is required. The project is therefore focused on designing the application machinery for the different sectors, and then demonstrating that farmers and growers like yourself, on real weeds on real farms, to give you confidence that electrothermal will work for your farming system and what its value could be.

So, please let me know if you are interested in continuing to be involved with the project - no financial commitment is required at this time. If so please email me and I'll put you on the email list.

And, I need help to spread the word about this project, so please would you forward this email to anyone you think would be interested.

And finally, Hotgrass, is doing a series of demonstrations around the country which you may be interested in attending - see this webpage for dates, locations etc., http://hotgrass.co.nz/events/ and while the demos will be of the handheld machine, they can still clearly demonstrate the potential of electrothermal.

Many thanks

Charles 'Merf' Merfield

Head of the BHU Future Farming Centre.