



Mechanical weeding: the support crew

“We require a cohesive, industry-wide approach to change which includes promoting the value of mechanical methods.”

SAM SIEGLIN

As herbicide resistance concerns remain a ticking timebomb coupled with regulatory unknowns, could the answer lie in mechanical weed control? *CPM* explores what the future might look like, plus the machines being introduced to help make that a reality.

By Janine Adamson

While the likes of stale seedbeds, delayed drilling, competitive seed rates and cultivation choice all play a role in integrated weed management, according to Zürn’s Sam Sieglin, potential still remains in making more of mechanical methods.

And now, with a range of innovative equipment to address weed control at various points during a crop’s life cycle, he believes it’s time focus shifted towards finally realising what’s possible. “We need to understand what’s sensible and realistic. Yes weed control can be driven by politics and regulation, but globally we have very skilled agronomists; it’s about providing them with the best tools.

“This involves offering alternative

solutions that rather than replace plant protection products, support and help to protect them, so they remain effective both tomorrow and beyond,” he explains.

Sam believes that in terms of weed control, much education and industry messaging centres around herbicides and how to steward their best use. In contrast, knowledge about mechanical options remains niche, yet the topic presents a similar level of complexity that requires understanding.

SYSTEMS THINKING

“With mechanical weeding solutions, we’re not just selling a product, it’s a deeper application that’s part of a much broader system,” he raises.

For George Dance, UK sales

manager at Zürn, while eking out the final few percent of weed control using chemistry is extremely difficult, there’s potential to achieve that final uplift using mechanical methods. “But equally, the cost of mechanical weeding is never considered on a per/ha basis, while



Alternative thinking

Zürn’s Sam Sieglin points out that as nature and climate continue to shift, the same has to happen for weed management.

MACHINERY Future weed control



Removing survivors

According to Zürn's George Dance, that because the weeds targeted by the Top Cut Collect are 'survivors' post herbicide-applications, they're the most resistant and problematic weed populations.

for chemistry, that's widely accepted as the norm. There just isn't the same perception of value," he suggests.

He believes a positive step would

be to carefully and strategically use herbicides to mitigate the threat of resistance, supported by mechanical approaches. "I think this would be viable option for achieving a higher overall level of weed control."

Sam points out that as nature and climate continue to shift, the same has to happen for weed management. "Why should our

"The Seed Terminator is a very powerful approach because it's controlling the most powerful, strongest survivors."

methods remain the same when everything else is changing?

"We have to diversify somewhat.

Yes this may involve investment in

machinery in the first instance, but diversity across all aspects of crop production is important. As such, we require a cohesive, industry-wide approach to change which includes

promoting the value of mechanical methods. we have to evolve and shift together," he urges.

Looking at the options currently available, work begins in the autumn with stubble cultivation, notes Sam, although this can rely heavily on weather conditions. But then, once a crop is growing, innovation steps in. "Camera-guided hoes are a useful tool in cereal crops. Offered by our sister company Garford (see box), these effectively remove grassweeds before they mature."

MACHINERY INNOVATION

Later, once surviving grassweeds are visible above a crop in spring, this could be a time to deploy the Zürn Top Cut Collect, he suggests. "Using a horizontal cutterbar, this simply cuts, collects and removes tall weeds and grasses before they have the chance to return to the seed-bank.

"There's no other alternative tool that does this from a field hygiene perspective, for long-term weed control."

Because many weeds shed seeds before harvest, cutting off the seed heads and removing them from the field before the combine rolls is an effective method, adds Sam. "The practice has proven its worth throughout Europe over many years and has been confirmed by various scientific studies.

"Critically, the machine was driven from the field up using feedback from farmers. So in essence, they've developed their own solution. As it continues to grow in popularity, we keep undertaking technical improvements to ensure it performs at its best in the field."

In addition, George stresses that because the weeds targeted by the Top Cut Collect are 'survivors' post herbicide-applications, they're the



TECHNOLOGY FOR SUCCESS MOMENTS.

LEMKEN supplies perfectly coordinated, innovative technology for high-yield agriculture. From stubble cultivation to ploughing, seedbed preparation, sowing and CropCare - well thought-out solutions come from a single source at LEMKEN.

most resistant and problematic weed populations. “They’re the plants that you must tackle for long-term effective weed control. They’re non-negotiable.”

Closing the loop is the Zürn Seed Terminator, an integrated attachment for combine harvesters that kills weed seeds during the combining pass. It works by terminating the germination capacity of weed seeds with up to 99% kill rate, reducing spread and dramatically improving in-field hygiene.

It’s centred around two high-performance multi-stage hammer mills which process the residue coming from the sieves, and can be used with John Deere, Claas, Case IH and New Holland combines.

For George, this helps to start the next season with a ‘clean’ slate and minimal seed return. “Again, the Seed Terminator is a very powerful approach because it’s controlling the most powerful, strongest survivors. This then loops immediately back to planting in the autumn; in essence these solutions collectively present a continuous cycle of weed management.”

While the Top Cut Collect is favoured by contractors, the Seed



Top Cut Collect

Using a horizontal cutterbar, the machine cuts, collects and removes tall weeds and grasses before they have the chance to return to the seed-bank.

Terminator is beginning to find a place on individual farms, he adds. “That said, take-up is still slow in the UK, while in Australia, growers there are further along in their adoption journey. It’s all about the commitment level and attitude to risk, and being able to see results year-on-year.”

Despite having the innovation now

available, Sam stresses that for weed control, it’s likely there’ll never be a silver bullet. “Equally we mustn’t block innovation or progression, or be scared of change. We have to try and meet in the middle, using patience and understanding. After all it’s not experimental rocket science, it’s proven,” he concludes. ●



0% Finance available

Perfectly balanced

AEROSEM VF

- High volume pressurised hopper with 1,700 or 2,400 litres with one or two component metering units
- Compact, folding coulter rail with short mounting for optimised weight distribution
- Maximum operating convenience thanks to simple adjustments accessible from the side

PÖTTINGER Finance available to business users only, subject to terms and conditions. Details upon request. Authorised and regulated by the Financial Conduct Authority only in respect of agreements regulated by the Consumer Credit Act 1974.

Alois PÖTTINGER UK Ltd, T: 01536 272220, info@pottinger.uk, www.pottinger.uk

PÖTTINGER

Farming with reduced chemicals

How an electric weeder could power the future of sustainable crop systems

As pressure grows on farmers to reduce chemical inputs and adopt more sustainable production methods, mechanical and non-chemical weed control is becoming central to modern farming, believes Garford Farm Machinery.

For the firm, this involves a range of precision weed control technologies designed to help growers lower herbicide reliance, reduce costs and support 'cleaner' farming systems aligned with regenerative and organic principles.

Known as the Robocrop range, this

includes precision-guided hoes, in-row weeders, camera-guided cultivation systems and the latest innovation – the Robocrop Electric Weeder. These tools are particularly effective in high-value root crops, as well as vegetable, salad and brassica crops, where weed competition can have a major impact on production quality and profitability, notes Jonathan Henry, managing director of Garford Farm Machinery.

For the Robocrop Electric Weeder, this was developed in partnership with RootWave, and uses high-voltage, high-frequency electricity to



Robocrop Electric Weeder

The technology uses electricity to boil weeds and their roots, providing better weed control at a lower cost than chemical herbicides.

destroy weeds without chemicals. Electricity passes through the weed plant and into the soil, destroying the plant internally and killing the root system as well as top growth. Unlike conventional top cutting or contact herbicides, the treatment is systemic, reducing the likelihood of regrowth.

"We're using physics rather than chemistry," says Jonathan. "The technology uses electricity to boil weeds and their roots, providing better weed control at a lower cost than chemical herbicides."

Furthermore, the system works with minimal soil disturbance, helping to preserve soil structure, moisture retention and biological activity. Critically, testing has shown no negative impact on soil biology, making the technology suitable for both organic and conventional farms seeking to reduce agrochemical dependence, suggests Jonathan.

Beyond this, Garford's camera-guided systems can support harvest weed seed destruction strategies and top cutting applications by allowing growers to accurately target weed escapes before seed return becomes a problem. Precision guidance enables hoes and electric treatment systems to work close to crops with minimal damage, improving weed control efficacy while reducing labour and chemical costs.

Cost-effectiveness is another major advantage, raises Jonathan. "We estimate operating costs for electric weeding at £55-120/ha, potentially lower than conventional herbicide programmes, particularly as resistance issues and tightening chemical regulations increase.

"For many growers, especially those producing high-value crops, reducing spray applications while improving sustainability offers both financial and environmental benefits for the future of farming," he concludes.

KRM

SM-P



KRM SM-P tine drills feature the heavy duty SM coulters with their narrow carbide tip which are ideally suited to direct drilling or sowing into min-till seedbeds. The ISObus controlled electric metering system is fed from the pressurised hopper for accurate sowing rates from 4-400kg/ha. Available in working widths up to 8m and with wide spaced options available suitable for mechanical weeding.



Find out more at:

www.krm-ltd.co.uk or call 01423-324221