Growing issues for the tillage sector

At the TEAGASC National Tillage Conference in January, live input from growers through a smartphone app helped to highlight the pressing issues in the sector.

Ireland's cropping systems underpin agri-food enterprises through the provision of high-quality, traceable livestock feed, and material for processing into food and drink products. The strategic importance of the crop sector is further supported by its potential to contribute significantly to the environmental sustainability of Irish food production systems. Ireland's tillage systems emit the lowest average greenhouse gases (GHGs) (~ 0.3-0.6 kg/kg finished product), in contrast to dairy (~ 1 kg/kg milk), and cattle (~ 13-18 kg/kg meat). The tillage sector is also the most resource efficient in regard to nitrogen (N) (> 60 %) and phosphorous (P) (> 80 %). Yet, while this carbon-efficient sector delivers quality traceable product that underpins much of our agricultural output, key profitability and sustainability challenges remain.

Live stakeholder poll

The 2020 National Tillage Conference gave us an opportunity to engage the 550 attendees on these sustainability issues, using the interactive Slido audience platform. This smartphone app allowed us to poll the audience in real time with nine questions, capturing a valuable perspective on stakeholder opinions, with results highlighting sectoral awareness of current and future challenges.

Main challenges

When asked to identify the main challenges to their enterprises (**Figure 1**), 91 % of respondents identified the continuous loss of plant-protection chemistry as the primary challenge, because of increasing resistance development in pathogens, weeds and insects, and product registration restrictions. This was followed by a lack of available varieties with increased stress resilience (47 % of respondents). This indicates the sector's acute awareness of these issues and the necessary route that must be taken at the research, and ultimately at grower level, to deal with the challenge.

Soil protection

The importance of protecting soil quality was a consistent topic throughout the Conference, with almost half of respondents acknowledging that from a soil perspective, additional measures were needed to promote soil health (**Figure 2**). On this, the incorporation of cover crops in rotations was seen as a key measure needed to protect and improve soil quality. While non-inversion tillage techniques were noted as an important step in improving soil structure, over 60 % replied that grass weed control was the main challenge restricting them from adopting non-inversion systems (**Figure 3**). Some 70 % of respondents noted that the potential loss of glyphosate in 2022 added further to the uncertainty around the viability of non-inversion systems, due to the lack of adequate weed control measures. Taken together, these results present a considerable challenge, for our current climate impacts on the relative benefits and challenges of non-inversion crop establishment systems, in terms of GHG emissions, crop establishment and grass weed control.

Opportunities for the future

Looking ahead, there was a strong consensus (72 %) among attendees that growing higher-value crops for specific markets is the primary opportunity for producers into the future, while also providing more protein crops to meet growing market demands (**Figure 4**). The need to exploit the use of organic manures from other enterprises was strongly supported. When asked about competitiveness, the need for high production standards, robust traceability, and research/agronomy support was identified, as well as the importance of accurate cost control on inputs.

Throughout the Conference, the real-time poll delivered valuable stakeholder insights to support panel discussion on the day. Overall, the exercise provided an important insight into the awareness

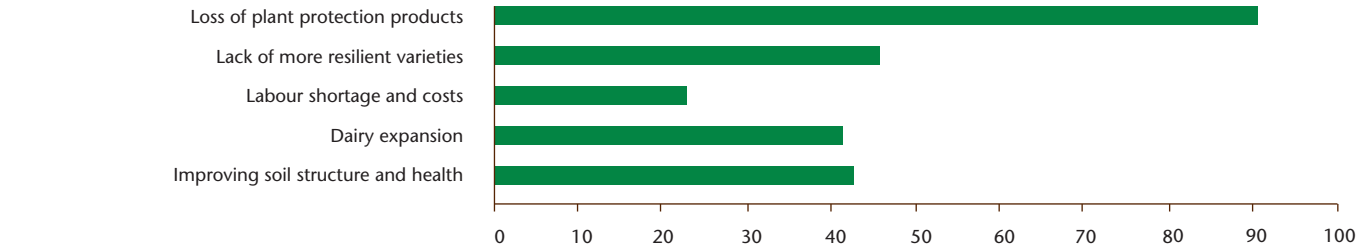

FIGURE 1: What are the main challenges facing the tillage sector?

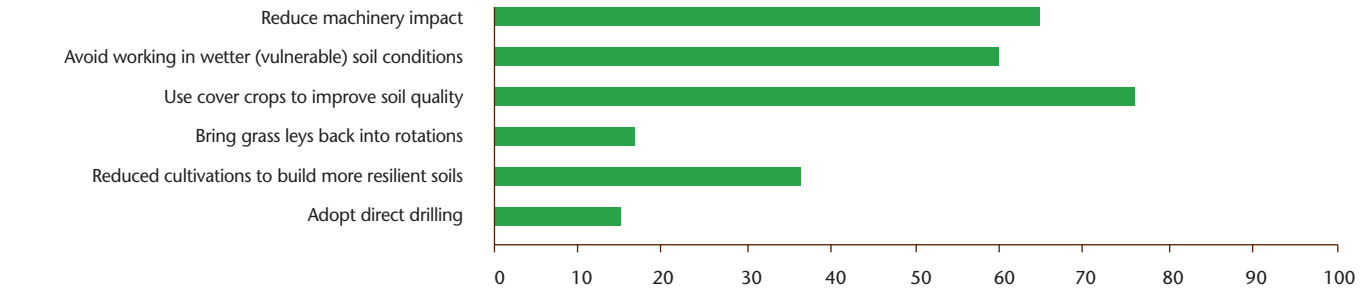

FIGURE 2: How can we protect our soils in continuous tillage

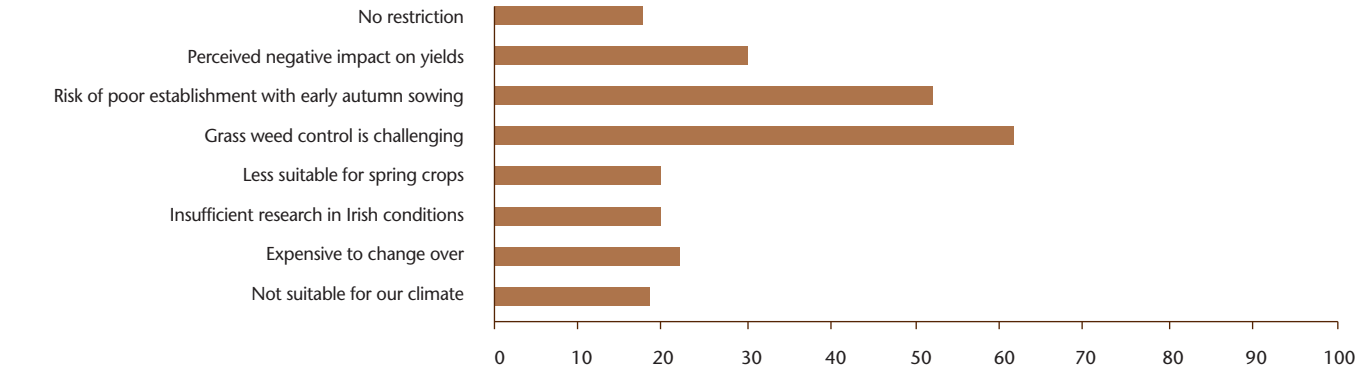

FIGURE 3: What currently restricts you from adopting non-plough tillage?

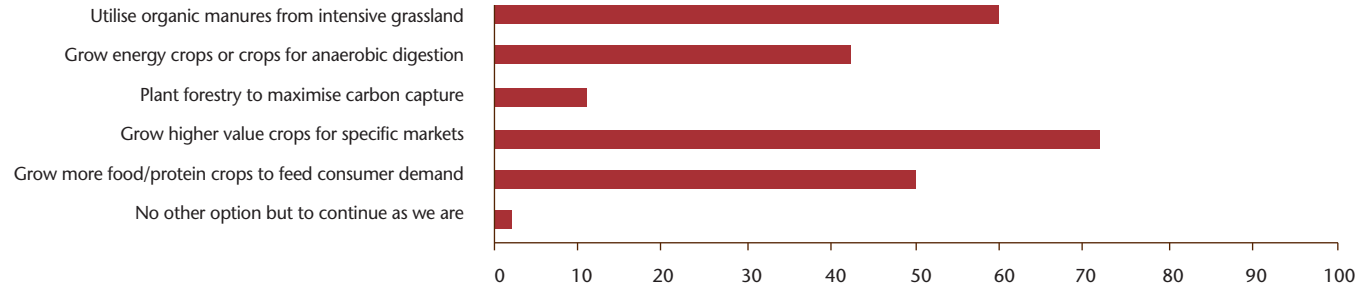

FIGURE 4: What will be the main opportunities for crop producers in the future?

of tillage stakeholders of the diversity of challenges that face the sector. Most importantly, it has identified the need for a continual industry response, at all levels, to ensure the future sustainability of the sector and the continued delivery of quality, traceable product.

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