HTA
The Horticultural Trades Association

HTA Briefing

Automation in Horticulture

Introduction

UK Environmental Horticulture is key for delivering clean air, mental wellbeing and mitigating the impacts of climate change. Automation in horticulture has the potential to allow for faster more accurate work, increased output, reduced crop losses, standardised processes, savings in money and labour and sustainability gains, ultimately increasing productivity.

Automation is particularly critical for industries like ours where there are seasonal peaks and troughs related to crop-production cycles, and adoption of automation is a critical part of the mix along with access to enough seasonal labour to help fulfil demand.

Increasing demand for plants and trees

Increasing the productivity of the sector is vital to meet tree planting targets, deliver nature-based solutions and maximise the climate change mitigation benefits of plants. It is also anticipated that the amount of regular gardeners is going to increase due to the UK's ageing demographic and increased interest since the pandemic, resulting in increased demand for flora from the gardening public.

In the long term, automation and technology could provide a means for the sector to produce more plants for less.

Increasing production

In order to meet increasing demand, the UK's 300+ commercial growers are increasingly looking to invest in the productivity and sustainability of future production. According to the Horticulture Business Survey (2022), 55% of growers are looking at ways to grow their business further over the next five years. Technology usage was listed as a key mechanism by 43% of growers for increasing production. This presents an opportunity to deliver significant ROI in this area as outlined in the HTA's Mechanisation Report.

Examples of Automation Technologies in horticulture

Automation within the sector has the potential to improve productivity and help to fill some of the seasonal fluctuations of labour demand amongst other things. The below images highlight some of the jobs that automation could be used for: plant cuttings, spacing plant pots and weeding using lasers. However, to drive this sectoral revolution, greater cooperation is needed between government, robotics manufacturers and the environmental horticulture sector.

LEFT: Harvest automation spacing robot. Video here.

RIGHT: Frame weeding – Earth rover CLAWS robot. Video here.

About us

The Horticultural Trades Association (HTA) represents 1500 members in the Environmental Horticulture Sector including; garden centre retailers, tree and plant growers, goods manufacturers, landscapers, and service providers. Our industry supports nearly 700,000 jobs, has a national GDP of £28.8 billion, mitigates climate change and benefits health and wellbeing for 30 million gardeners in the UK.

Further information

For further information contact the HTA Policy Team via email at **policy@hta.org.uk** and visit **hta.org.uk/policy**

Processes which could, or are already to some extent being automated:

- Picking
- Bunching
- Grading
- Counting
- Packing
- Growth monitoring
- Taking cuttings/pinching
- Tray preparation
- Transplanting cuttings
- Disease/pest control
- Grading
- Movement of potted plants in growing areas
- Configuring trolley shelf heights
- Transferring potted plants to trolleys
- Transport of trolleys

Key asks for Parliament & Policy Makers

- **As recommended by the Horticultural Sector Committee**, we urge the Government to set out its approach to co-ordinating private and public leadership and funding for R&D, whilst managing ongoing labour shortfalls.
- Champion Government initiatives or incentives to foster innovation such as the Farming Equipment Technology Fund, introducing flexibility in the technology that can be purchased, ensuring that all technology applicable to both edible and ornamental horticulture is clearly listed as such, and enable provision to lease or co-own equipment to support smaller growers.
- Review the financial and fiscal support for automation and technology in horticulture particularly grant conditions which can discourage investment.
- Incentivise and encourage technology vendors to develop and bring solutions to market that are critical to enabling the continued production of flora and ensure environmental horticulture is part of the wider conversation on automation and AI to help protect climate security.
- Recognise that for many businesses in the sector, depending on business size and type, automation will bring different levels of benefit, and if we're to keep this diversity, then some seasonal labour is likely to still be needed into the foreseeable future.
- Collaborate with industry to identify skills gaps to ensure the future workforce are equipped with the necessary skills to work with automation technology.

The previous government's response to the John Shropshire review and report on Automation in Horticulture commits to support and encourage the uptake of automation technology in the horticulture sector through funding and government and sectoral collaboration. **The HTA asks the new government to ensure that environmental horticulture is considered when developing the policy detail, as well as ensuring that the sector has the necessary skills and workforce to deliver this transition. This will help to deliver the UK government's ambitions on AI and automation and help protect climate security.**

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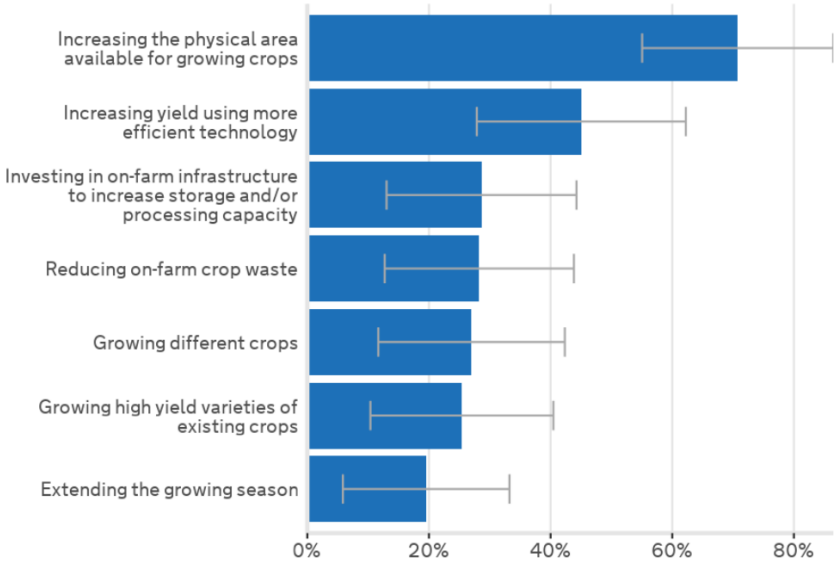
Reducing reliance on overseas labour

The previous government stated their policy ambition to reduce reliance on overseas labour through the increased use of automation in horticulture. However, as recognised in the independent Defra Report on Automation in Horticulture, the necessary infrastructure, funding, guidance, and regulations are required to support this sectoral revolution.

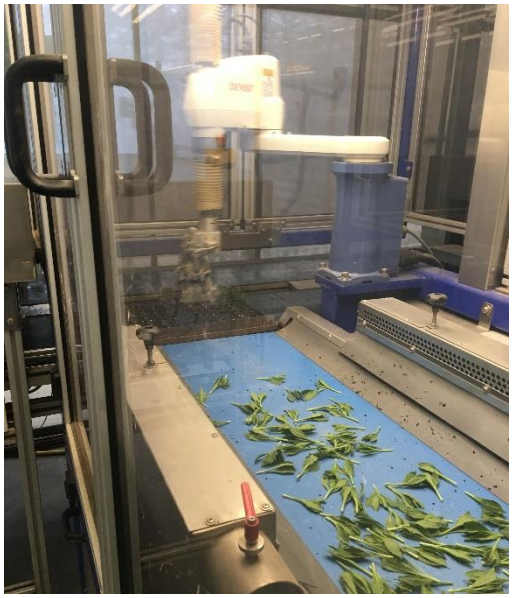
Figure 3.2: Methods by which growers plan to increase production in the next five years



Source: Horticulture Business Survey (2022)

In May 2024, confirmation of a five-year seasonal worker visa scheme, albeit with the details yet to be published, was welcomed and helped to give horticulture businesses who are facing multiple challenges some much needed certainty and confidence. Access the seasonal labour is one of the most important enablers of automation, many technologies in the pipeline will take years to get to commercialisation, and seasonal labour is critical to maintaining cash flows that enable businesses to invest in the future through meeting today's demand for trees and plants. The visa number allocations must be announced promptly to allow businesses to evaluate labour needs more accurately over time, stabilise workforce pressures, and incentivise investment in automation technology.

Although automation is increasingly being embraced across the sector, for many businesses who want to automate their processes, there is no 'off the shelf' solution. The accelerated adoption of automation is necessary to deliver on the plants and trees needed to provide environmental, health, and social benefits, and growers, whilst prepared to invest, often can't raise the finance required to invest quickly enough, especially given the volatility of demand related to weather which makes businesses subject to short-term fluctuations in revenue that they have to maintain sufficient reserves to deal with. Thus, to sustain and accelerate investment in new technologies to enable greater productivity and capacity, it will become increasingly important that ornamental growers are able to access investment support and incentives to help lower the financial barrier to investment.



Denso Sticking Machine.