



Edible Horticulture Skills 2020

Sector Report

A report for the Agriculture and Horticulture Development Board

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PYE TAIT CONSULTING

Edible Horticulture Skills 2020



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1. Introduction

Important Note

The bulk of the research for this study was conducted prior to the full impact of the Covid-19 epidemic in the UK. However, the final stages coincided with the “lockdown” and the researchers were able – in conjunction with AHDB – to adjust some of the questioning to gather important reactions and perceptions on the impacts. These are discussed in Section 7.

Not since World War II has the strategic importance of food security been placed in such great prominence as by the Covid-19 epidemic. Although trade by sea and air was not significantly diminished, domestic food production came into the spotlight as global prices and shortages took their toll. Alongside arable and animal agriculture, the edible horticulture sector has always been of vital importance to the nation but its value has been re-emphasised in no uncertain terms by the events of 2020.

Even before the epidemic took full effect, the Agriculture and Horticulture Development Board (AHDB) wished to have much more detailed and up-to-date knowledge about the edible horticulture sector to inform its strategic decisions, including data on workforce numbers and needs, hard to fill vacancies and skills gaps, demographic information including age, gender and nationality, key drivers of change, etc. The invitation to tender set out the background to this piece of work clearly:

During 2018 and 2019, a group of organisations within the UK Ornamentals industry commissioned a pilot skills survey as a ‘proof of principle’ exercise and a subsequent ongoing full survey, which is clearly providing the detailed evidence needed. In recognition of this progress and of the serious shortages of labour that UK edibles horticulture is experiencing there is an urgent need to collect data similar to the successful ornamentals survey for the edibles horticulture sector covering primary production through to and including packhouse operations.

The AHDB subsequently commissioned Pye Tait Consulting to conduct a detailed workforce survey during late 2019 and early 2020. The design of the work and much of the research for the study was carried out before the outbreak of the Covid-19 epidemic in the UK, and, particularly, before the impacts of global lockdowns and the collapse of travel were experienced.

However, we were able, in conjunction with the AHDB, to enhance the question-set a little towards the end of the survey in order to interview business leaders on the impact of the crisis on their skills and workforce needs. Although not comprehensive, the responses complement the overall findings with Covid-19-informed information. The responses have been integrated in the report where appropriate and a separate “Covid-19” section has been added prior to the recommendations.

1.1 Purpose of the research

The AHDB and its associated stakeholders seek a workforce, skills and skills-needs analysis of edible horticulture businesses across the UK. On a strategic level, the findings will contribute to the on-going effort to enable the sector to realise its full potential in terms of productivity, full labour and sustainability of a skilled workforce, investment as well as providing the evidence to raise its national and international profile.

On a practical level, the findings will shape the AHDB’s work, prioritise future actions and provide an evidence base for discussions with Government, including the shape and form of funding. Seasonal labour is extremely important in several edible horticulture sub-sectors and AHDB wished to understand this issue in greater detail with a view to underlining to government its value and the policy implication in a post-Brexit UK.

As mentioned above, the edible horticulture sector research builds on the successful study of the ornamental sector in 2018-19 using many of the same question-sets and following a similar although not identical process.

1.2 Objectives

The main objective of the research was to provide the AHDB and its associated stakeholders with insight and intelligence on the skills and workforce needs in edible horticulture.

This is to inform recommendations and AHDB initiatives to ensure the sustainability of a sufficiently skilled workforce, boost economic growth and increase production as well to promote careers in the sector.

The following lists the individual project objectives in detail. These are re-addressed in the conclusions.

1. Understand the drivers of change affecting Edible Horticulture (including opportunities and constraints to growth, technological change) and how these are influencing employers' skills needs (see sections 6 and 7);
2. Define the Edible Horticulture sector and estimate current and anticipated future UK workforce numbers, including additional and replacement demand (see section 2);
3. Establish the profile of the Edible Horticulture workforce, including demographic information, ethnicity, qualifications attainment and working patterns (see section 3);
4. Quantify the prevalence of skills shortage and recruitment difficulties at all levels (including hard-to-fill vacancies) and reasons why these are being experienced (see section 4);
5. Quantify current skill levels and the future importance of those skills (using a skills-scoring approach), to determine future critical skills gaps and priority training needs (see section 4.5);
6. Explore attitude, approaches and barriers to training (see section 5); and
7. Prepare recommendations, taking into account additional support needed to help the edible horticulture sector realise its full potential (see sections 8 and 9).

1.3 Methodology

1.3.1 Skills Survey

The main primary research tool was a survey of companies in the Edible Horticulture sector sub-divided by six core activity types which included a distinction between production of fruit, mushrooms, and vegetables and packhouse activity.

The sample was set at 600 businesses from a business population totalling approximately 6,200, according to official NOMIS data for the Edible Horticulture sector. These data, based on Standard Industry Classification (SIC) codes, do not fully reflect the exact nature of Edible Horticulture particularly with respect to its sub-sectors.

The SIC codes at the best level of disaggregation (five figure level) give an overview of the sector but do not reflect the sub-sectors as recognized within the edible horticulture sector. The main NOMIS categories are as follows and the full list is given in section 2.1:

01130 : Growing of vegetables and melons, roots and tubers

01240 : Growing of pome fruits and stone fruits

01250 : Growing of other tree and bush fruits and nuts

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01630 : Post-harvest crop activities

10390 : Other processing and preserving of fruit and vegetables

The categories are not mutually exclusive, do not adequately segregate protected activities, and do not clearly identify packhouse activities.

For this reason, the questionnaire was designed to use a different, industry-based, six-sub-sector (plus “other”) classification in order to pinpoint the precise nature of activities within the in-scope businesses.

- Soft Fruit
- Tree Fruit
- Mushrooms
- Field vegetables
- Protected edibles
- Packhouse

The samples were randomised using Pye Tait Consulting’s in-house business database¹ and contacts were confirmed as meeting the edible horticulture criteria by asking initial questions on their business activities (using the six activity plus other classification as described above). Quotas were set for business size and geography to ensure slight over-representation for the three smaller UK nations, and slight over-representation for SMEs and larger companies.

The survey was closed in March 2020 with the final telephone interview being completed on March 6th and the last online completion being received on March 24th. Uncertainties surrounding the Covid-19 outbreak began to increase rapidly in late February and early March, with the result that businesses began to experience very significant additional workloads as they tried to anticipate and prepare for whatever action the UK government was about to take. In the event the response rate was impacted by these uncertainties. Although well on track to complete the required 600 sample, we were forced to accept a final completion sample of 556 companies (further discussed in the following section).

Each business was asked to select one primary activity, i.e. their main business activity from the list of Soft Fruit, Tree Fruit, Mushrooms, Field Vegetables, Protected Edibles, or Packhouse and were also asked to indicate any secondary activities in which they might engage. If a respondent selected packhouse as a secondary activity, they were asked if they were answering for both sides of the business.

In deploying the survey, a mixed telephone and online approach was used. The latter was established in order to ensure that companies which could not find the time, or found it inconvenient, to take part in a phone interview would nevertheless be able to participate. The questionnaires for both were identical and at the

¹ The database contains fully up-to-date details of 4.1m businesses in the UK, categorised by SIC code, size, and location. Contact was made with over 5,000 businesses in order to correctly identify and complete interviews with 556 edible horticulture companies.

completion of the survey, the results of the (identical) telephone and online surveys were then merged for analysis.

1.3.2 Businesses v Activities

All research populations – whether they be individuals, sectors, or companies – are susceptible to analysis against a variety of variables. In the case of individuals these might include gender, ethnic origin, location and much else. Business enterprises are rarely as simple as they often seem when assessed against a SIC code. Industrial classification is self-selected and may not be precise. In reality, as businesses evolve over time, it may not reflect the true nature of the business or (and this is much more common) may not reflect the complexity of activities undertaken.

The inconsistencies and overlap within the SIC classification system with respect to edibles was discussed with AHDB at a very early stage and this led to the development of the six-activity classification used in the survey.

The findings from this study have revealed that the edible horticulture sector is a complex one which is particularly affected by “multiple activities” – that is, the propensity for individual companies to be involved in more than one sub-sector activity. Almost a quarter of respondents reported having secondary activities and informal (i.e. off-survey) telephone questioning revealed that a great many companies were more complex than the straightforward “primary activity”/“secondary activities” distinction used in the questionnaire. One company provided evidence that they are involved in all six activities and many others told us that they had a genuine problem distinguishing which of their activities was the “primary” one or indeed clearly separating what they did into the classifications used.

For these reasons the analysis in this report takes into account two over-arching variables – the primary activity as reported by the respondents (drawn from a sample of 556 “primary” activities) and the more numerous collective of primary and secondary activities (drawn from the 724 distinct activities undertaken by responding businesses). We have made it clear wherever each approach has been used to illustrate activity in the edible horticulture sector.

1.3.3 Depth interviews

The survey questionnaire was designed to capture a wide range of quantitative and qualitative information related to workforce and labour, drivers of change and training themes. It contained 47 mainly multi-part questions some of which – e.g. on skills scoring – were of considerable length.

While seven purely qualitative (text-response) questions were included the length of the questionnaire meant that respondents could not be fully probed on deeper

matters of insight and context. To expand our understanding, therefore, a number of depth interviews were carried out with business leaders from major companies in all production sub-sectors. The depth interviews proved very valuable in adding further information and comment on survey results, potential solutions to, and ways forward on, key issues the industry faces, and which support mechanisms may have to be put in place.

These interviews also provided an opportunity to get early insight on how the sector has been affected by the Covid-19 epidemic and what it may mean for the broader themes of workforce and drivers of change.

1.3.4 Analysis and reporting

The analysis of the research findings used mixed methods of manual and software-based analysis. SNAP software, cross-tabulations and results tables were used for the quantitative findings, including questions on workforce age or numbers employed as well as multiple choice questions, etc. For open commentary related to the themes of the survey, manual analysis and NVivo were used.

The questions asking respondents to rank their current and future skills need were analysed using a skills-scoring approach. Skills scoring involves employers rating specific current skills of their workforce on a scale from 1 (not at all skilled) to 10 (perfectly skilled), followed by a question requesting their rating of the perceived future importance of each skill. These results are presented as column charts.

In addition, the skills survey results were cross-referenced with qualitative responses from businesses providing further information in the qualitative sections of the questionnaire, where respondents were invited to give their views on workforce, training, skills and drivers of change amongst other. The results of the in-depth interviews were integrated into this analysis. For outline reports on the sub-sectors please see the six separate production and packhouse sub-sector reports.

2. The Edible Horticulture sector in 2020

The Edible Horticulture sector may be broadly sub-divided into “production” and “packhouse” business activities. Each activity requires distinct sets of skills and knowledge, but a good many businesses engage in several of these activities, encompassing different types of production as well as packhouse activities.

The “production” sector of Edible Horticulture is defined by the propagation and cultivation of certain types of fruits, vegetables and fungi across five sub-sector activities. Sometimes conducted by specialist companies and sometimes as an adjunct to other activities, “packhouse” work involves storing and packing of produce, among other related tasks, for distribution, wholesale and retail customers. The list below provides detailed descriptions for edible horticulture activities in the UK:

Soft Fruit - includes strawberries, raspberries, blackcurrants, blueberries and all other Rubus and Ribes species and rhubarb

Tree Fruit - includes apples, pears, plums, cherries, nuts and novel crops such as apricots.

Mushrooms - encompasses the range of common mushroom (*Agaricus bisporus*) products but also include various exotic species

Field Vegetables - includes carrots, onions, brassicas, leafy salads, baby-leaf, herbs, asparagus, sweetcorn, watercress & cucurbits

Protected Edibles - edibles grown under “protection” - in greenhouses - include protected salad crops such as tomatoes, cucumbers, lettuce, peppers, herbs

Packhouse - storing, packing, value-adding and dispatching produce

2.1 Sector Size and Value

Estimating the size and value of the edible horticulture sector is fraught with difficulties mainly due to the official economic taxonomies. Industry activity is classified by SIC code and occupational numbers by the Standard Occupational Codes (SOC) neither of which are a good or precise fit with the sector as described above.

Within the Standard Industrial Classification (SIC 2007) the activities of the edible horticulture sector can be found within several codes few of which match the industry’s own nomenclature and several of which include activities which the sector does not recognise as part of its remit.

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The relevant codes are:

- 01130 : Growing of vegetables and melons, roots and tubers
- 01220 : Growing of tropical and subtropical fruits
- 01230 : Growing of citrus fruits
- 01240 : Growing of pome fruits and stone fruits
- 01250 : Growing of other tree and bush fruits and nuts
- 01260 : Growing of oleaginous fruits
- 01300 : Plant propagation
- 82920 : Packaging

Code 01260 covers many fruits and nuts including olives and walnuts which may or may not form part of the business model for businesses in the edibles sector. Nevertheless it has been excluded from the calculations below.

Similarly, 01300 covers a wide range of plant propagation activities:

Plants for planting or ornamental purposes
 Plant propagation
 Plant growing for tubers, roots, cuttings and slips, bulbs
 Ornamental tree and shrub growing
 Nursery (horticulture)
 Turf for transplanting

Of these, some are relevant to edible horticulture (e.g. mushrooms, some of plant propagation and some of the horticulture nursery activity) but most are not. In the case of this code we have included 10% of the listed companies to reflect a likely share of the total for edible horticulture.

Packaging activities for all industries are covered by a single five digit code – 82920 – in which there are 3,530 business units listed for the UK. Most of these are not relevant to the edibles sector. We have taken a proportion of 3% of packaging companies to provide a broad indication of the number of businesses engaged in packaging activities related to the sector.

Table 1: SIC Code Approximations of the Edible Horticulture Sector (business units)

	01130 : Vegetables, melons, roots and tubers	01220 : Tropical and subtropical fruits	01230 : Citrus fruits	01240 : Pome fruits and stone fruits	01250 : Other tree, bush fruits & nuts	01300 : Plant propagation (*)	82920 Packaging (*)	Total	% of total
UK Total	4,900	5	5	940	165	67	106	6,188	
Micro	4,600	5	0	800	145	57	93	5,500	93.4
Small	420	0	0	90	10	75	8	603	5.5
Medium	95	0	0	30	10	2	4	141	1.3
Large	20	0	0	20	5	0	1	46	0.4

Source: ONS NOMIS Business Statistics (*) adjusted for edibles - 50% for 01130 and 10% of total for 01300 and 3% of the total for 82920.

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According to the British Growers' Association (BGA), British horticulture² represents 25% of all agricultural output in the UK. The sector sustains around 100,000 full-time and seasonal workers across the sub-sectors and contributes over £3bn to UK's GDP.

These figures include both ornamental and edible horticulture and match with an estimate of around 40,000 staff in permanent roles and 60,000 staff in seasonal jobs³.

Statistics from the Institute of Employment Research (IER) at University of Warwick⁴ estimate approximately 83,000 people working in the horticulture industry as a whole (i.e. all horticulture) in an estimated 7,745 businesses.

This survey – see the following sections – returned detailed responses from 556 businesses in the edible horticulture sector. These companies employ around 60,000 people of whom around half are seasonal staff. The survey response rate from this sector is, therefore, around 7.5%. It over-represented larger companies so it would be wrong to use the average employment figure to arrive at a sector total employment figure

The current survey found an average staff employment of 94 staff but this was heavily influenced by the larger companies in the sample. The most common number of staff reported was two, and half of the respondents employ less than 21 staff. If we take reasonable average staff sizes for each business-size band and assume a total number of businesses of just 6,188 (i.e. the adjusted number returned by the ONS NOMIS data) the estimate of employment in the sector would be as follows:

Table 2: Modelling Sector Employment

Business size	Number of employees	Proportion of all NOMIS Companies	Average size	Number of companies based on 6,188 total	Number of employees
Micro	1-9	93.4	2	5772	11544
Small	10-49	5.5	30	340	10197
Medium	50-249	1.3	150	80	12051
Large	250+	0.4	1500	25	37080
					70872

² The BGA represent primarily food growers/producers (i.e. not ornamental horticulture). The statistical estimates given by BGA give a reasonable guide to the overall size/shape of edible horticulture sector.

³ Countryside Online (<https://www.countrysideonline.co.uk/food-and-farming/feeding-the-nation/horticulture/>)

⁴

<https://warwick.ac.uk/fac/soc/ier/ngrf/lmifuturetrends/sectorscovered/agriculture/sectorinfo/industries/producing-horticulture/>

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As we will see below, however, the survey gained responses from 58 large companies – twice as many as predicted above. In view of the fact that the figures may not reflect employment in packhouse activities, etc. **the overall employment in the sector is likely to be between 100,000 and 120,000 people.**

In terms of value the British Growers Association puts the output of the sector at around £3bn per year which matches reasonably well with our own detailed findings drawn from older DEFRA Statistics.

Table 3: Modelling Sector Contribution to GDP

	Tons	Implied average price per ton	£m
Soft Fruit	173,000	2,694	466
Tree Fruit	545,300	446	243
Mushrooms	70,000	1,614	113
Field Vegetables	2,100,000	524	1,100
Protected Vegetables	274,000	1,200	331
Packhouse			330
			2,583

Source: DEFRA, Horticulture Statistics, 2018,2019, 2020⁵

Note: The UK Packaging sector contributed around £11bn to the national economy in 2018. As with previous calculations we have taken a percentage of 3% of this total to represent the edible horticulture element⁶.

It would seem reasonable therefore to accept the British Grower’s Association estimate of a GDP contribution of at least £3bn per year; implying a productivity figure of around £25,000 per year per employee.

⁵ <https://www.gov.uk/government/statistics/latest-horticulture-statistics>

⁶ The UK Packaging Industry – A Strategic Opportunity: A Landscape Review and Technology Roadmap Report; June 2018

2.2 Business Activities

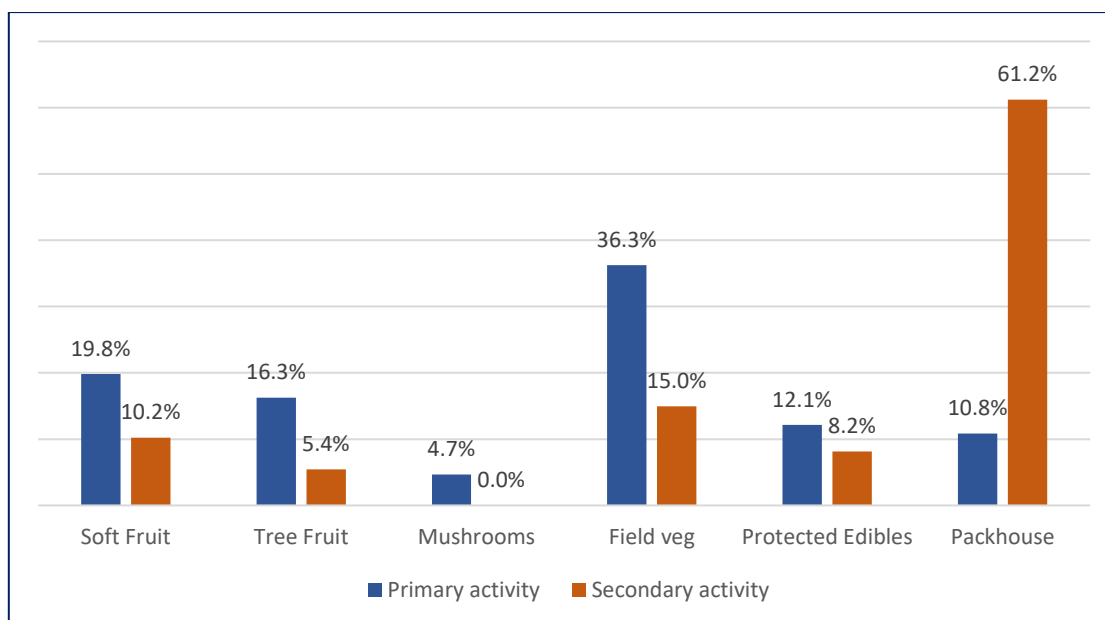
In the course of this research, 556 businesses with primary activity in either production or packhouse were interviewed.

These respondents told us that they also undertake 168 secondary activities, of which packhouse accounted for over 60%. The survey returned data for a total of 724 distinct business activities.

The respondents to the depth interviews revealed that at least some of these secondary packhouse elements also provide packhouse services to other growers in their local area.

Figure 1 illustrates the proportions of responses for each broad type of activity that are related to specific sub-sectors. For example, of all responses giving primary activities 36.3% were in field vegetables; and of the responses relating to secondary activities 61.2% were for packhouse as shown in the figure below.

Figure 1: Proportion of responses by businesses on primary and secondary activities (%)



Base: 724 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

2.3 Business size

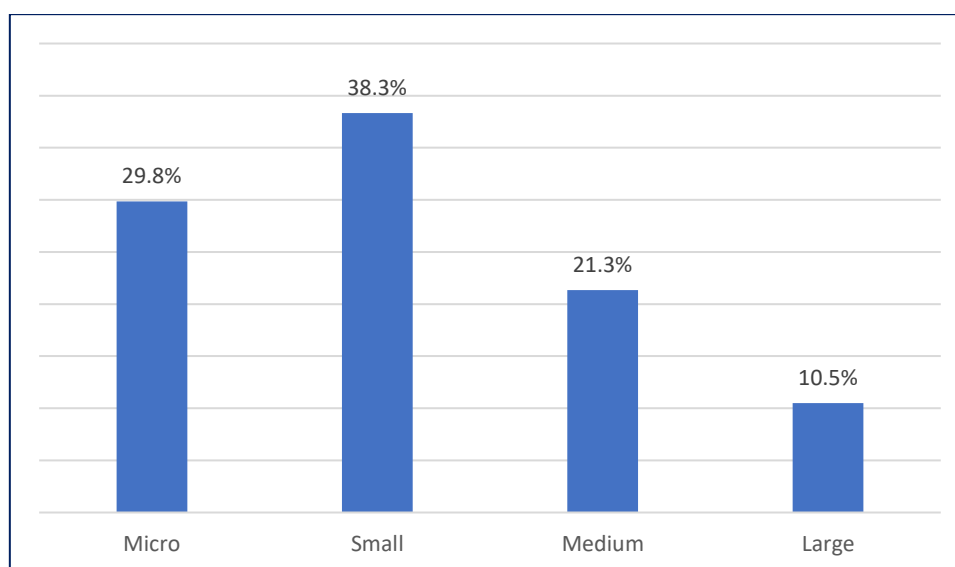
The overall margin of error in a survey of this size is $\pm 4\%$ (any survey of between 500 and 700 responses for a population of between 6,000 and 50,000 will return the same margin of error).

Our survey returned 556 businesses and revealed an average size of company of around 94 staff. However, the mode for all respondents was two employees and the median was 21. The overall mean was distorted by several quite large companies in the response set – seven firms with over 1,000 staff including one with 4,000 staff (taken together these companies employ 13,300 people, representing just under 26% of the total reported employment). Most respondents employ just two staff and exactly half of the respondents employ 21 or fewer people.

Table 4: Number of responding businesses by size

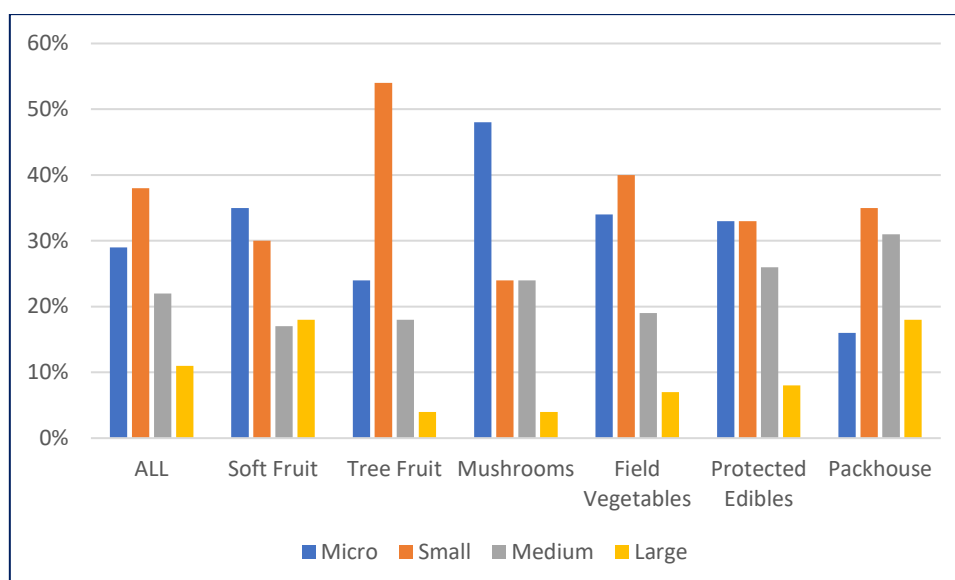
Business size	Number of employees	Number of responding businesses	Proportion of Respondents	Proportion of all NOMIS Companies
Micro	1-9	165	29.8	93.4
Small	10-49	212	38.3	5.5
Medium	49-250	118	21.3	1.3
Large	250+	58	10.5	0.4

Figure 2: Proportion of surveyed businesses by size



Base: 552 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Figure 3: Business size by sub-sector



Base: 552 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

2.3. Affiliation with Accreditation schemes

A majority of businesses (401 – 72%) confirmed being affiliated to a least one food quality standard or sustainability accreditation scheme. Of the companies that were affiliated to such schemes the average number of membership of such schemes is 2.4.

Table 5: Affiliation - Production and Packhouse sectors

Red Tractor Fresh Produce Scheme	85%
LEAF	55%
Field to Fork	32%
BRC	32%
SALSA	23%
Other, please specify	17%

Base: 401 respondents (multi-choice question).

Two accreditation schemes were particularly prominent: the “Red Tractor Assurance for Farms” (RTFA)⁷ scheme, which enables business to use the Red Tractor label as proof that food quality has been assured during the production and packing phases according to the standards set by the scheme; and LEAF (Linking Environment and Farming)⁸, which promotes sustainable practices in cultivation and propagation as well as farming.

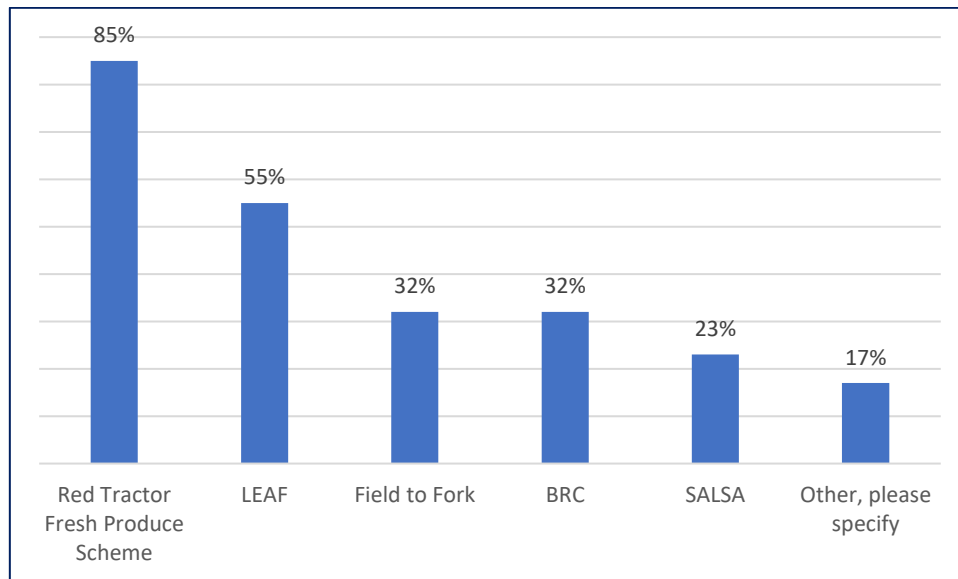
⁷ <https://www.redtractor.org.uk/>

⁸ <https://leafuk.org/>

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Further schemes, subscribed to by more than 10% of companies, are the British Retailer Consortium (BRC)⁹ food safety standard and the Field to Fork¹⁰ initiative.

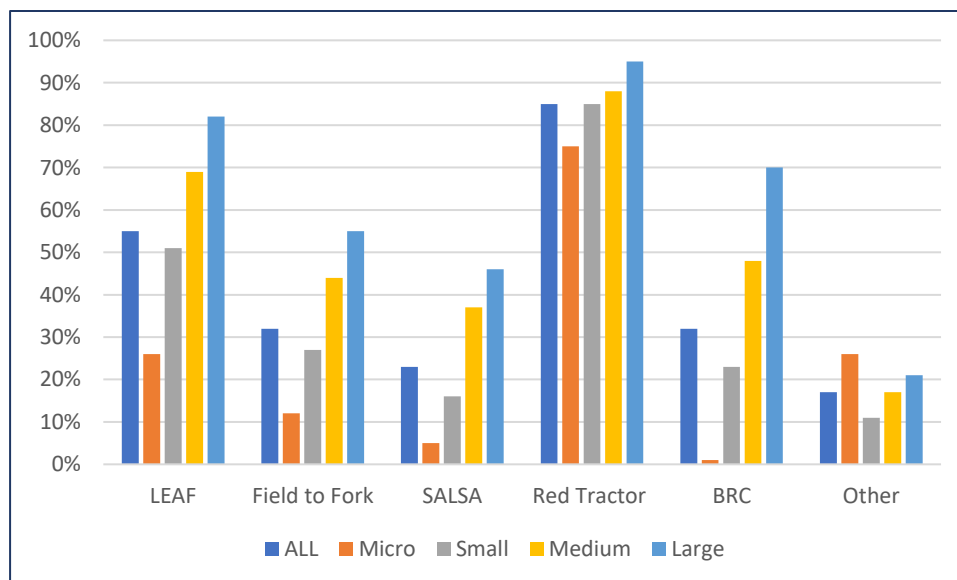
Figure 4: Affiliation with Accreditation schemes - Entire EH Sector



Base: 401 respondents, (multi-choice question), Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Six businesses mentioned Global Gap as an “other” accreditation scheme, while four businesses listed the Organic Soil Association, and two listed their membership of Nurture.

Figure 5: Affiliations by Business Size



Base: 399 respondents, (multi-choice question), Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

⁹ <https://globalfoodsafetyresource.com/brc-certification/#>

¹⁰ <https://corporate.marksandspencer.com/sustainability/quick-reads/from-field-to-fork-our-farming-standards>

3. People

This section presents an overview of demographic and workforce data for the Edible Horticulture sector.

We know that the NOMIS data do not accurately represent the UK edible horticulture sector (due to the fact that many companies extend across two or more SIC codes) but as stated earlier, as a rough approximation of the sector NOMIS gives a number of total business units of 6,188.

The likelihood is that NOMIS under-estimates the sector by a small amount due to edible horticulture businesses being classified under alternative SIC codes. For example some packhouse companies may well be contained within general warehousing or food production codes and, as some horticultural businesses are subsidiaries of larger agricultural enterprises, they may be subsumed within broader agricultural SIC codes.

Based on the twice as many responses from larger businesses than expected, and in view of the fact that the figures may not reflect employment in packhouse activities, etc. we estimate **the overall employment in the sector is likely to be between 100,000 and 120,000 people.**

The edible horticulture businesses we surveyed reported a workforce of 51,006 people. If the number of workers engaged in secondary activities is added, this workforce figure rises to 61,464.

None of the sub-sectors seems to employ more than about 15% of additional staff to service secondary activities – with the exception of packhouse activities in which 60% of the total reported workforce are employed by firms to service packhouse as a secondary activity.

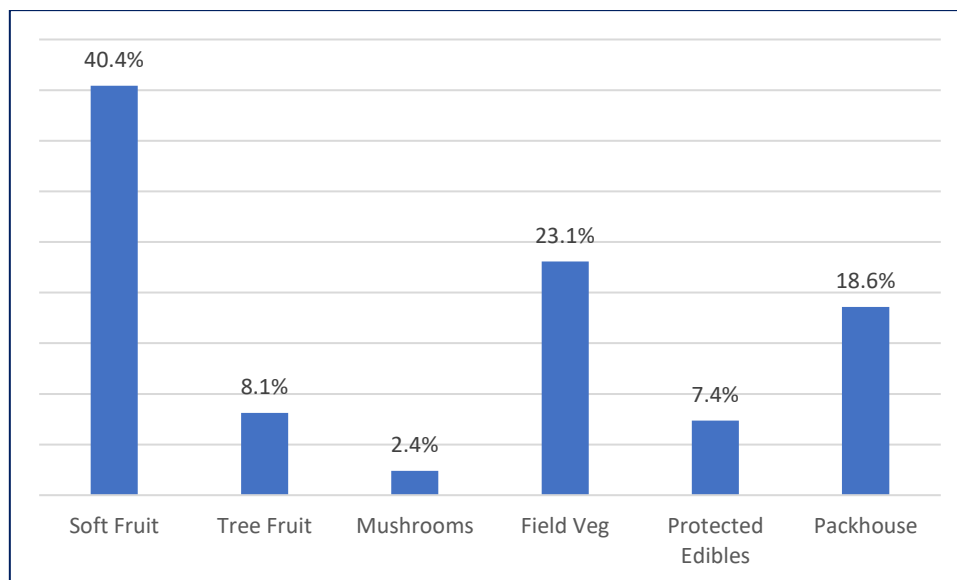
Table 6: Workforce Numbers broken down by primary and secondary activities per Sub-Sector

	Total Primary Staff	Additional Secondary Staff	Total
Soft Fruit	20625	2557	23182
Tree Fruit	4143	349	4492
Mushrooms	1222	0	1222
Field Veg	11778	1200	12978
Protected Edibles	3753	585	4338
Packhouse	9485	5768	15253
Total	51006	10458	61464

Base: 552 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

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Figure 6: Employment by sub-sector - proportions



Base: 552 respondents. Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

As Table 7 shows, and in common with general employment profiles for most sectors in the UK economy, the largest proportion of workers in the edible horticulture sector works for the small minority of large businesses.

Table 7: Sample Size Profile

Size	Nos in sample	% of sample	Total staff	% of staff	Av. size of companies of this size
1 to 9	165	29.8	729	1.4	4
10 to 49	212	38.3	4848	9.4	23
50 to 249	118	21.3	13179	25.5	112
250+	58	10.5	32954	63.7	568

Base: 553 respondents

Almost 70% of the firms in our sample employ just under 11% of the total workforce, while the top 30% employ almost 90% of the national workforce in the

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sector (the top 10% of companies provide employment to almost 64% of the sector's total workforce).

The bare statistics may however be misleading as to the value of the micro and small company components of the edible horticulture market. Research in other sectors has shown that these companies, although they employ a small minority of the total workforce, contain the seeds of future growth, of new and innovative ideas and of entrepreneurial ambition.

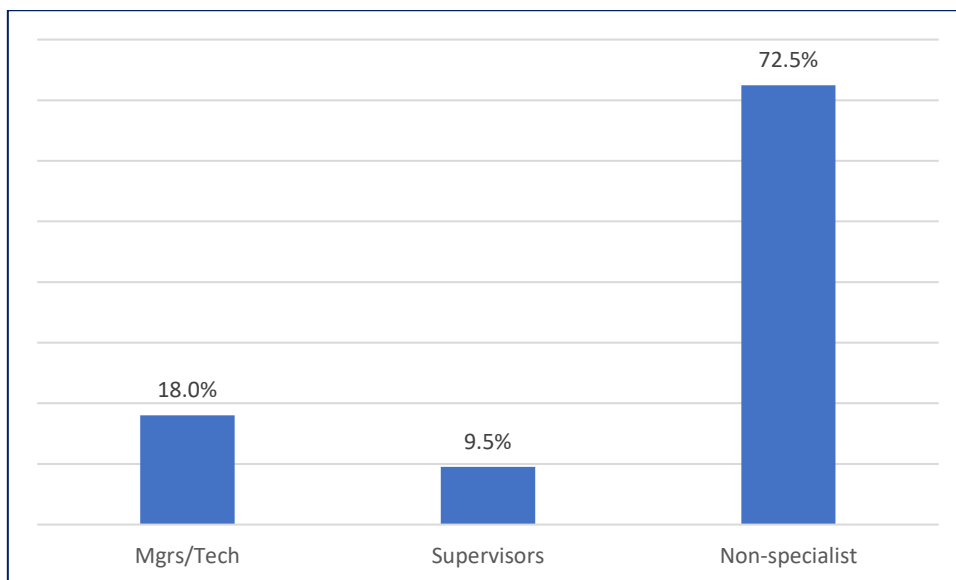
3.1 Staff job roles and work regime

The figures and tables below present the numbers of staff by job role and work regime, i.e. salaried/permanent and seasonal/agency. The job roles are sub-divided by manager/technical, supervisory and non-specialist roles. Non-specialist employees are workers that may not have a technical occupation, but still have skills in food production and hold certified competences such as forklift driving or spraying.

Figure 7 showcases this for salaried/permanent staff, while Figure 8 does so for seasonal/agency workers for the entire Edible Horticulture sector.

3.1.1 Salaried/Permanent staff – Entire Edible Horticulture Sector

Figure 7: Salaried/Permanent Staff by Job Role



Base: 556 respondents, 1191 responses, over 20,000 employees. Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

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Table 8: Salaried/Permanent Staff

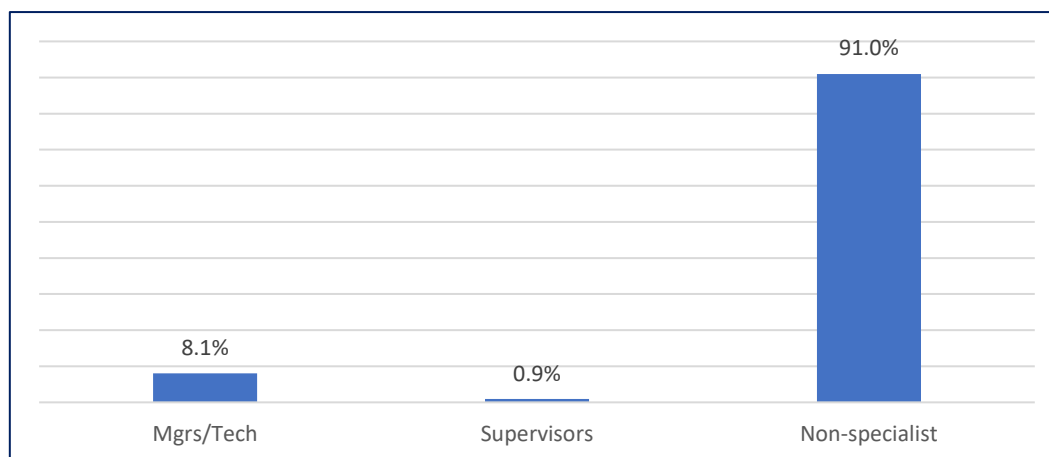
Sub-sector	Managers and technical occupations	Supervisors	Non-specialist employees
Soft Fruit	952	561	3180
Tree Fruit	262	263	1150
Mushrooms	187	60	618
Field Veg	891	418	3836
Protected Edibles	344	262	1063
Packhouse	987	350	4729
Total	3623	1914	14576

Base: 556 respondents, 1191 responses, over 20,000 employees. Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

3.1.2 Seasonal/Agency staff

Around 9% of seasonal workers work in managerial and supervisory roles.

Figure 8: Seasonal and agency staff

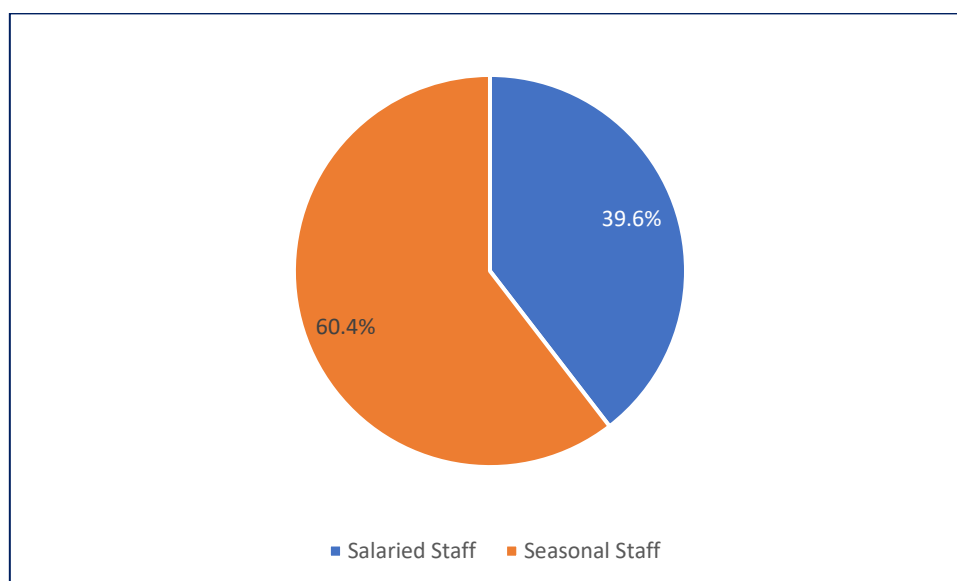


Base: 556 respondents, 374 responses, around 30,000 staff, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Table 9: Seasonal/Agency Staff

Sub-sector	Managers and technical occupations	Supervisors	Non-specialist employees
Soft Fruit	1034	183	14694
Tree Fruit	1	37	2345
Mushrooms	0	0	357
Field Veg	225	54	6298
Protected Edibles	21	5	2068
Packhouse	1200	7	2208
Total	2481	286	27970

Figure 9: Workforce salaried and seasonal workers



Base: 556, 1565 responses on all types of staff. Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

3.1.3 Apprentices and Trainees

The number of apprentices in the sector may be quite low in relative terms.

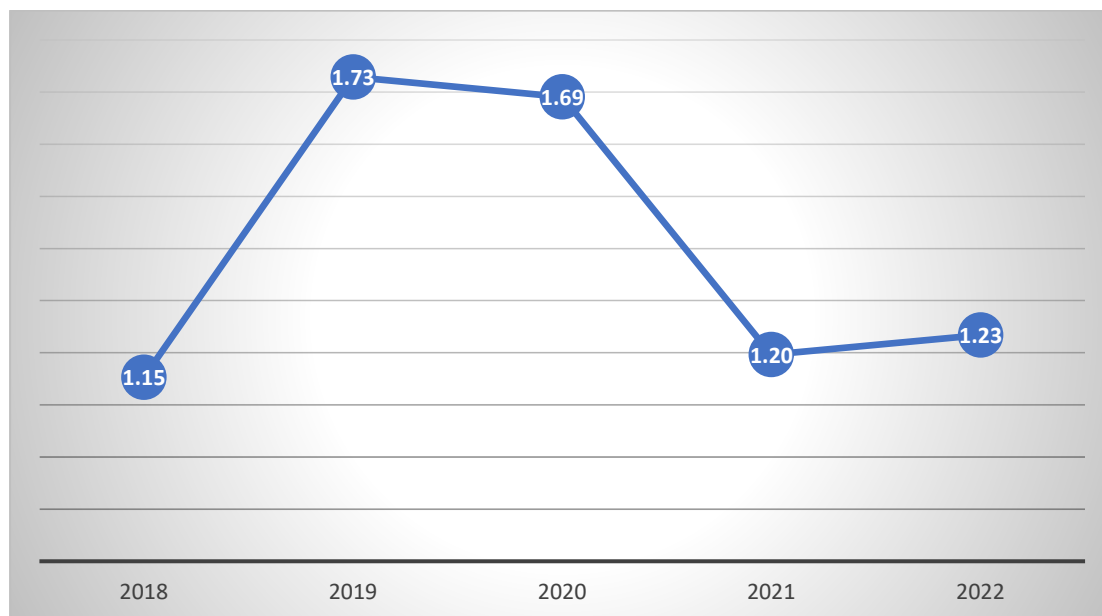
Of the sample of 556 businesses, 178 reported employing one or more apprentices (32%). These companies employ a total of 247 apprentices, an average of 1.4 per business across the entire sector. When taking into account the overall employment numbers of the companies in the sample, apprentices constitute 0.5% of the workforce or roughly 1 per 200 staff. This compares with an England-only average of 2.8% of the national workforce.

Several of the survey respondents stated that they are looking to take on apprentices. However, they almost all mentioned difficulties in finding good-quality apprentices and what they regard as a lack of horticultural apprenticeships specific to their sector.

In answer to a specific question concerning intentions with respect to apprentices a small proportion of employers (averaging around 20% of all those in the sample) said that they intend to employ slightly fewer apprentices in 2020 and considerably fewer in subsequent years. Further questions were not asked in the survey itself but anecdotal evidence from the in-depth interviews seems to indicate that the anticipated decline may be connected to general business pessimism in the context of Brexit.

Figure 10: Apprentice Employment Intentions

(Average numbers employed in given years)



Base: between 107 and 122 companies (response rate varied by year), Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

3.2 Staff by Age Group

Around a quarter of the edible sector’s salaried permanent staff are aged over 50 (compared to 13.5% of the seasonal workforce). The former has an average age of 41.3 years while seasonal staff average 36.4 years.

Although there is a strong perception in the industry that the workforce is “ageing” this is more to do with smaller companies which form the majority of businesses (but employ a minority of staff) than a reflection of the situation overall. As an industry edible horticulture has some 34% of its people aged under 35 and 75% aged under 50.

The average of around 25% of the workforce aged over 50 compares favourably with the UK national average of over 32%.¹¹

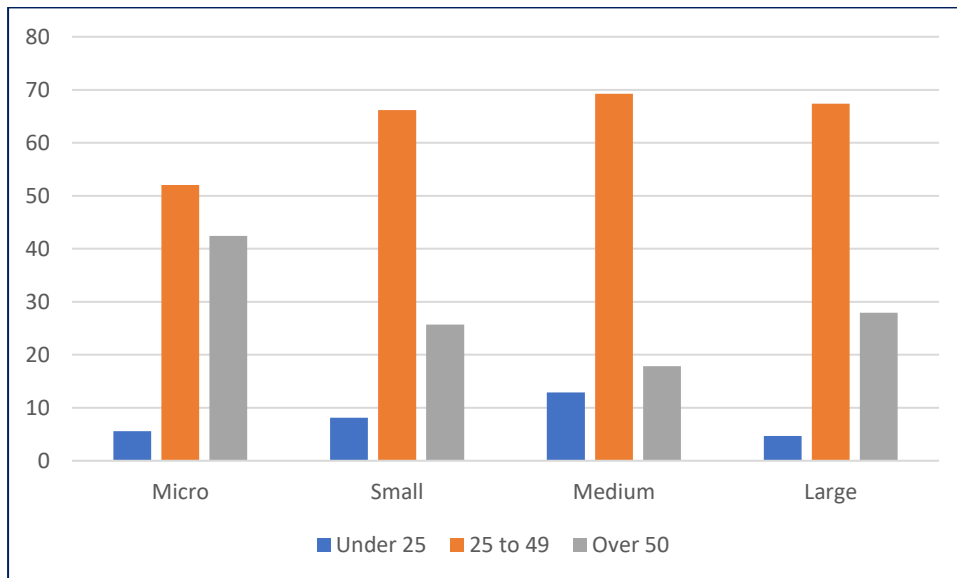
As can be seen from Figure 11, around 42% of the staff of micro-businesses in the sector are aged over 50 (compared for example to an average of around 20% for other sizes of business and this emphasises the importance of taking this issue seriously. Although micro enterprises employ only a small proportion of the total

¹¹ ONS *People in Work*; December 2019; and CIPD *Labour Supply and the Ageing Workforce*; 2015 In the April 2020 Bulletin the ONS reported a total of 10.7m people in the workforce aged over 50 – 32.3% of the total workforce of 33.1m

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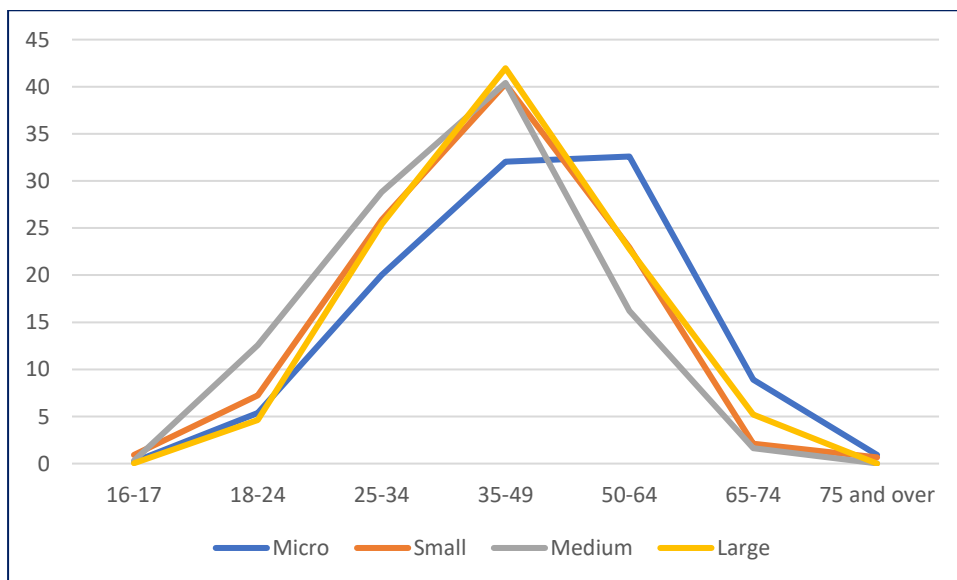
workforce (around 11%) they constitute an important part of the supply chain and, it could be argued, a vital source of experience.

Figure 11: Age Profile by Size of Business



Base: 375 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

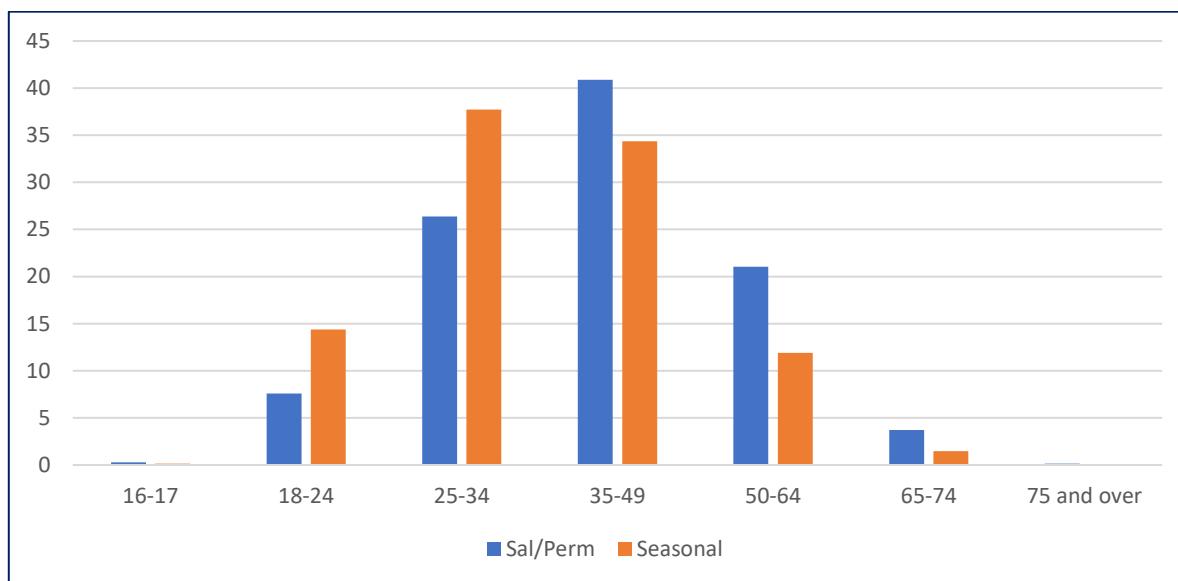
Figure 12: Age Profiles- Illustrating Older Profile for Micro-Businesses



A small number of the in-depth interviewees mentioned the issue of an ageing workforce. One individual claimed to be still recruiting 80-year-old workers! Several others argued that a poor industry image is hindering recruitment from younger people. Outdoor work and unattractively low wages were cited as additional issues.

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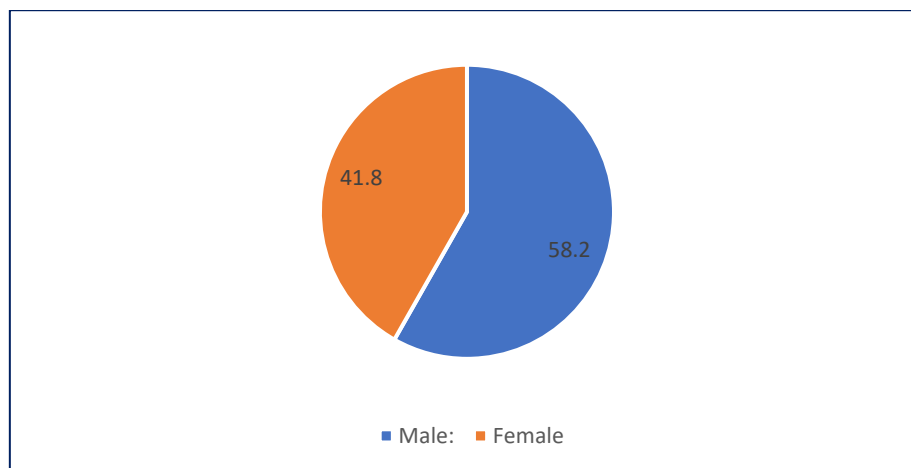
Figure 13: Age profile by broad staff type (in percent)



Base: 375 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

3.3 Gender balance

Figure 14: Gender balance in Edible Horticulture sector (Salaried/Permanent staff)

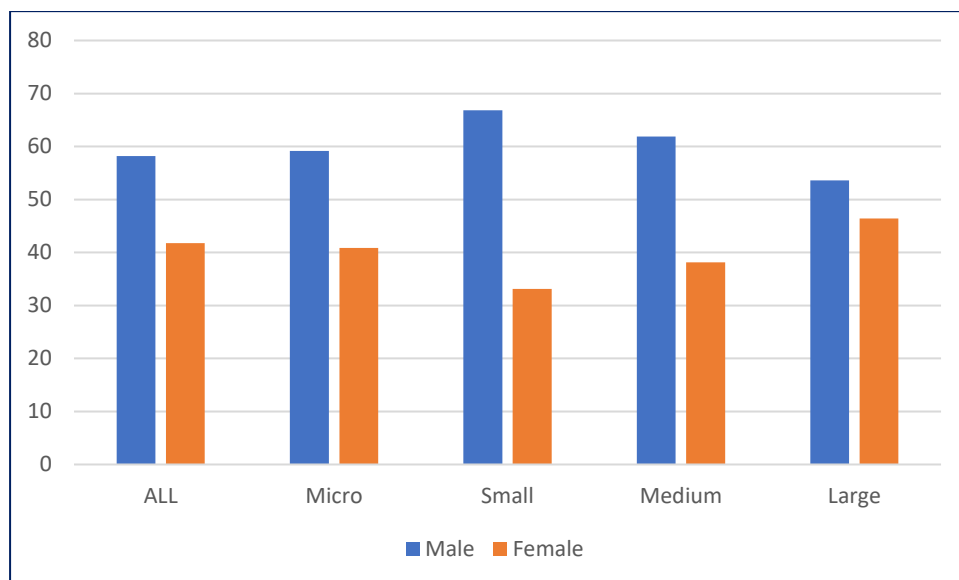


Base: 507 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

As Figure 14 shows, the edible horticulture sector employs a relatively high proportion of women in its salaried/permanent staff. The national equivalent statistic is around 47% but over a third of that proportion is employed on a part-time basis¹².

¹² ONS People in Work; April 2020 - 15.6m females in employment = c47% of the national workforce. 6.3m women work part-time.

Figure 15: Gender Balance by Size of Company



Base: 556 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

3.4 Workforce Origins

Around 300 companies were able to provide details of the broad makeup of their workforces for permanent employees. Respondents to this question represent just over half of the total sample, but oral feedback to the survey interviewers revealed that the question was extremely difficult for medium and large companies to answer in that they argued that it would necessitate them getting detailed statistics from their HR departments.

Those that were able to respond gave details for a total of 17,686 people (just over a third of the total numbers of employees reported by respondents to the survey) of whom 51% were UK citizens and 47% EU citizens.

Most seasonal workers appear to come from three main European countries – Bulgaria, Romania, and Poland in order of volume. These three account for some 87% of all seasonal workers reported for the survey. This finding reflects the survey of seasonal labour supply to British farms, conducted by the NFU¹³.

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https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/692743/Supply_of_Seasonal_Labour_to_British_Horticulture_Farms_2017.pdf. This survey has been run by the NFU since 2013

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Table 10: Sources of Seasonal Workers from EU Member States

Seasonal Staff Nation of Origin	Numbers reported	Percentage
Bulgaria	5356	42.1
Romania	3568	28
Poland	2212	17.4
Lithuania	637	5
Latvia	334	2.6
Hungary	217	1.7
Czech Republic	182	1.4
Slovakia	97	0.8
Belgium	42	0.3
Portugal	38	0.3
Estonia	24	0.2
Slovenia	7	0.1
Spain	5	0
The Netherlands	3	0
Croatia	2	0
Denmark	2	0
Ireland	1	0

Base: 106 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

In answer to a more detailed question about ethnic origin, a little over 300 respondents provided information as listed in Table 11. The data show that some 60% are of “any other white background” – in this context meaning EU or possibly from Australia/New Zealand/USA/Canada.

Just under 28% of total workforce numbers as reported by this sub-sample are of English, Scottish, Welsh or Northern Ireland origin.

The statistics underscore how possible restrictions in new immigration laws may impact negatively on the sector and its access to labour.

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Table 11: Ethnicities Employed

Ethnicity	Number of workers
English/Welsh/Scottish/Northern Irish/British	4939
Irish	1
Gypsy or Irish traveller	10
Any other white background	10680
White and Black Caribbean	3
White and Black African	1
White and Asian	101
Any other mixed/Multiple ethnic background	168
Indian	-
Pakistani	1
Bangladeshi	-
Chinese	4
Any other Asian background	4
African	12
Caribbean	-
Any other Black/African/Caribbean background	10
Any other ethnic group	1752
Total	17686

Base: 308 respondents for the English/Welsh, etc. question and 166 responses for the question on “any other white background”. None of the other options had more than 8 responses except “Any other ethnic group” which had 14.

4. The Labour and Skills Challenges

As late as the end of February 2020 few people in the UK expected the severity of the Coronavirus epidemic as it affected (and, at the time of writing, is continuing to affect) the UK. For the edible horticulture sector the combination of two events – Brexit and Covid-19 – will have major impacts stretching well into the future. The sector's dependence on European seasonal labour was already an issue in the light of Brexit, but the addition of the virus to the mix has made the task of anticipating the future incredibly difficult.

An industry, more than half of whose total workforce consists of seasonal workers who are mainly drawn from the mainland of Europe will be seriously impacted by anything which prevents the recruitment and use of that workforce – whether in terms of immigration restrictions following Brexit, or restrictions which might be imposed as a result of the epidemic.

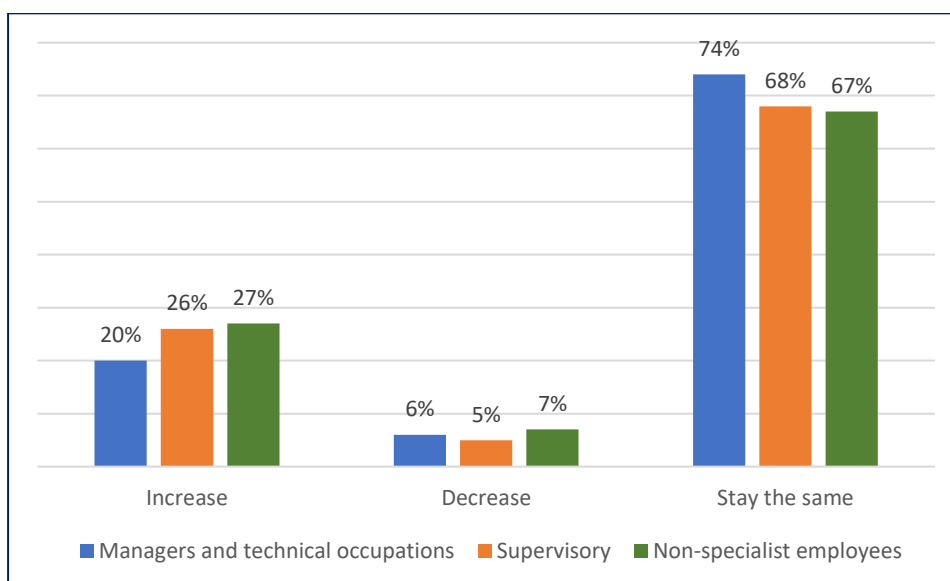
A proportion of the responses to questions on workforce and skills issues were gathered before the lockdown began in March. Consequently, everything in this section of the report has been re-examined in the cold light of the epidemic and the possible implications for future immigration – even of a temporary nature.

A good example of the need for caution is the reaction of the industry to the expected changes in salaried and permanent staff. While around three-quarters of employers expected numbers of such staff to remain constant, around a fifth were optimistic and expecting these to increase. In-depth interviews which were conducted towards the end of the research (in April 2020) suggest that the industry is now a great deal more pessimistic about seasonal workers and permanent staff numbers.

4.1 Workforce projections

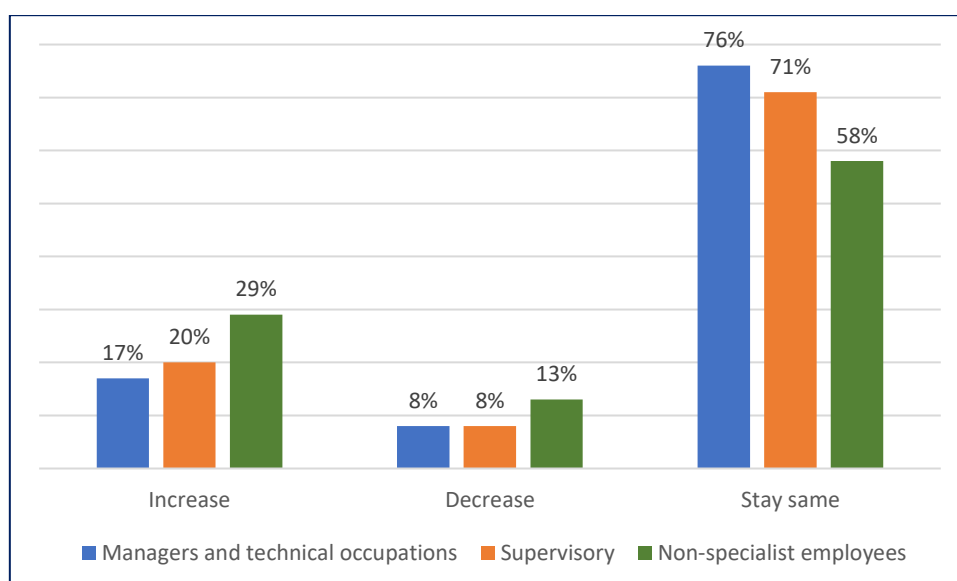
The anticipated changes in employment in the sector are similar for both salaried/permanent and seasonal staff (with the caveat that while these results are set in the context of an impending departure from the EU in December 2020, they do not fully take into account the impact of the epidemic).

Figure 16: Predicted change in numbers of salaried/permanent staff by job role



Base: 531 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

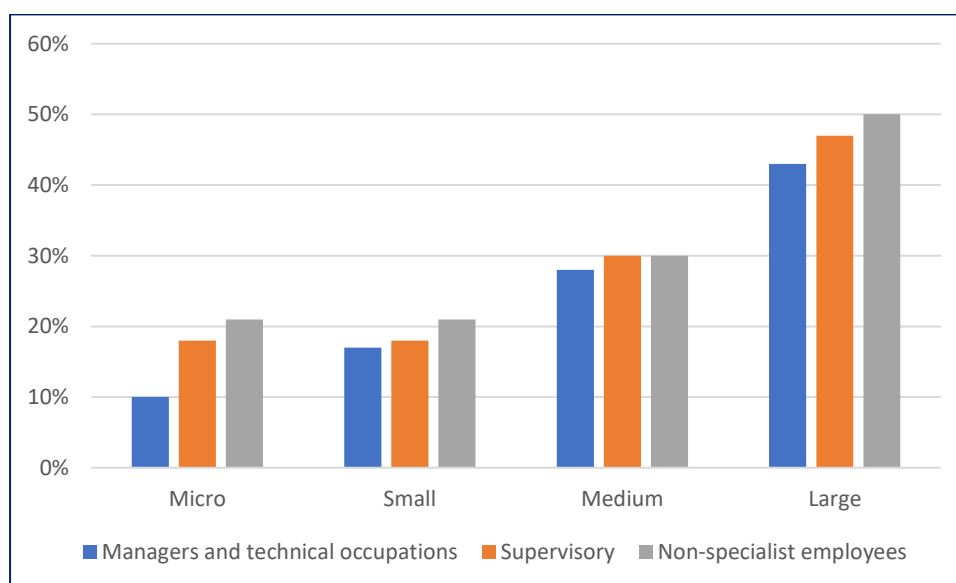
Figure 17: Predicted change in numbers of seasonal and agency staff by job role



Base: 531 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

The optimism in the sector is not, however, uniformly spread by business size. Micro and small businesses are considerably less optimistic than larger companies. In view of the fact that over 60% of employment in the sector is situated in the small number of large companies this finding would normally lead to some overall optimism about expansion in the sector. However, the results do not take fully into account the impact of the Covid-19 situation.

Figure 18: Employers Predicting an increase in employment (by business size)



Base: 556 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

The most common response of survey participants regarding recruitment was the issue of Brexit and the effects potential policy changes will have on low-skilled European labour entering the country after the UK finally leaves the European Union. Many respondents claimed that they rely heavily on EU nationals for seasonal work and some had already seen numbers starting to decrease. They fear the UK is becoming less appealing in the foreign labour market.

'We rely on migrant workers and EU citizens in this particular sector and Brexit is going to make it increasingly difficult to bridge the shortfall in workforce numbers.'

The concern regarding Brexit parallels another concern that some respondents referenced which was the difficulty in recruiting UK and/or local workers. Respondents worry that, if EU numbers decrease, they will find it difficult to make up those lost EU workers with UK nationals as they already experience difficulties attracting and recruiting UK citizens into the sector. This was confirmed by all participants of the in-depth interviews.

Some respondents claimed that, from their experience, UK nationals want to make more money than is offered in the farming/agricultural sector and, generally, they are not interested in manual or seasonal labour. Eastern European nationals, by contrast, are more willing to work in manual roles. One respondent stated:

'British people seem interested in specialised roles (i.e. automation, etc) than the basic manual/picking roles, but these still need to be filled somehow. Picking is a more skilled job than people give it credit for.'

There is uncertainty in the sector regarding the UK Government's plans on immigration. Growers hope that they will still be able to freely recruit EU nationals from all EU Member States.

Some 24 respondents however claimed to have no concerns regarding recruitment citing a good source of local labour and a good consistency of seasonal workers returning (under pre-Covid conditions).

4.2 Vacancies & Hard to Fill Vacancies

Vacancies among salaried and permanent staff appear to be a little higher than the national average. Only 188 companies (34%) mentioned having such vacancies for managers and 116 for supervisors. The average reported number of vacancies for managers and supervisors (for the minority of companies that reported such vacancies) is around four in the reporting companies.

The 717 managerial vacancies that were reported represent around 19% of the total managerial workforce provided by respondents as part of the survey. The equivalent figure for supervisors is 24%. These results can be compared with the national turnover average of between 15% and 20% in permanent staff¹⁴.

Seasonal vacancies were given by 164 respondents as 11,569. Employers reported that around 30%-40% of seasonal workers return each year on average and across the sector and this figure for "vacancies", if interpreted as newly-employed seasonal workers, would seem to match this figure.

A vacancy which is "hard to fill" is defined as a "skills shortage" and a large proportion of respondents said they were having difficulty finding and recruiting workers with specialised skills and qualifications to fill certain roles. These include operational roles such as

- tractor drivers with certificates,
- qualified spraying operators,
- tele-handlers,
- seasonal crop harvesters,

¹⁴ This proportion is extremely variable however depending on sector. For example annual average turnover in retail is around 35%.

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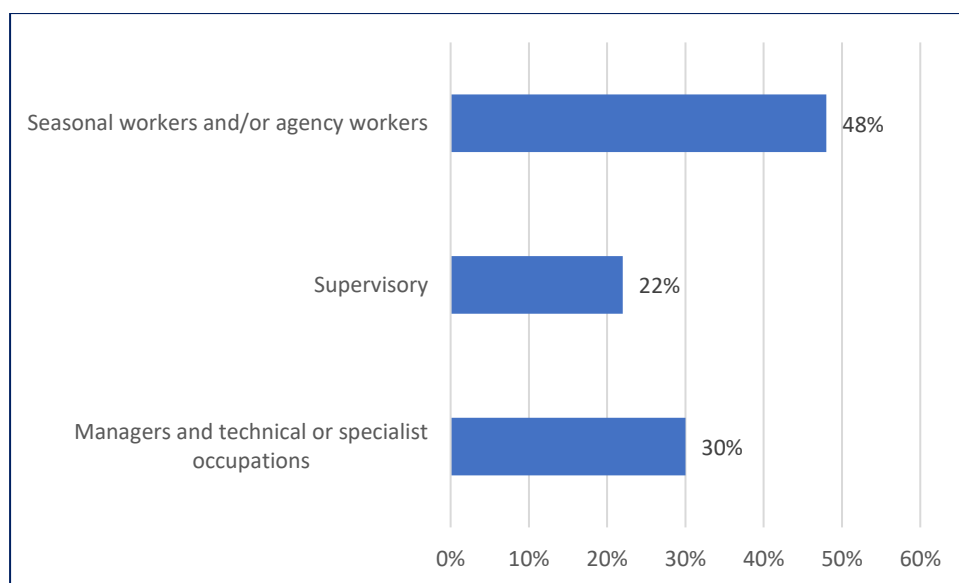
- technical managers and supervisors with Food Safety and Hygiene qualifications,
- technical growers, and
- agronomists.

Some respondents claim it is difficult to find “semi-skilled workers who are reliable and interested in a career in the sector”.

A common issue with respect to recruitment (rather than specific skills shortages) is that new workers lack quality, interest, and an appropriate attitude towards working in the sector. A number of respondents say that some people do not even turn up to interviews that they have agreed to attend. Respondents feel this may be due to a negative industry image of low wages and labour-intensive work.

Just over 300 companies reported 470 “hard to fill” vacancies of which almost half – 48% - were seasonal/agency and 30% management.

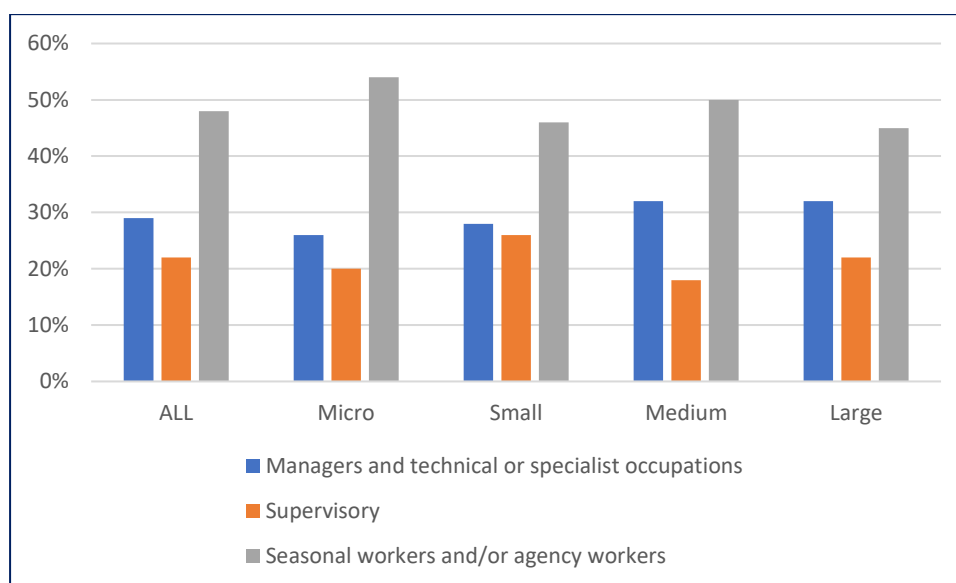
Figure 19: Vacancies that have been hard to fill



Base: 303 respondents, 470 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

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Figure 20: Hard to Fill Vacancies by Size of Company



Base: 301 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

4.3 Barriers to recruitment

4.3.1 Apprentices

In addition to the earlier question on the numbers of apprentices in the sector which returned a figure of 247 employed by 178 companies in the entire sector, respondents to the qualitative survey questions and to the in-depth interviews were asked whether they intended to take on any apprentices and what, if any, barriers might be preventing or hindering such recruitment.

A number of respondents did say they are thinking about taking on apprentices. Of these, a noticeable number mentioned difficulties in finding good-quality apprentices and some talked about a lack of horticultural or agricultural apprenticeships specific to their sector. Several employers also complain about limited funding for training, both for staff and for apprentices.

“There is shortage of horticultural and agricultural apprenticeships specific to the cultivation and propagation of fresh produce. Also, there is not enough funding available for smaller businesses to access.”

Key barriers to apprentice recruitment seem to be related to the soft skills of candidates and to their attitudes and behaviours as well as a generally low interest in the Edible Horticulture sector. This corresponds with observations of businesses interviewed after the survey that the sector is not very well perceived as a career and has to be heavily promoted. One business pointed to the relatively recent change in the minimum age at which people could work in the sector (to 18 years)

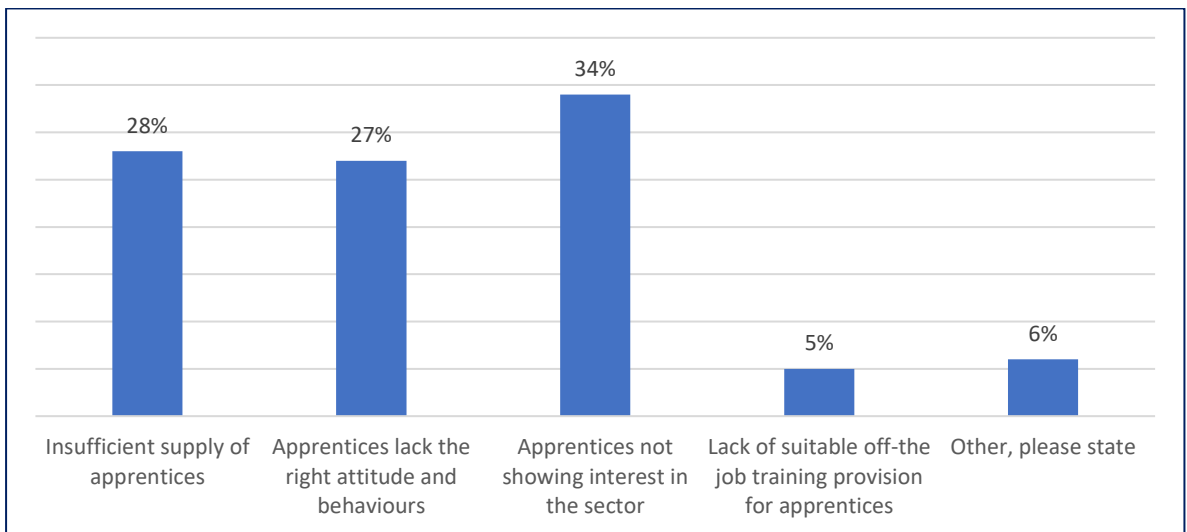
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resulting in less opportunities for young people to get an early insight and develop an interest in careers in the Edible Horticulture sector.

Almost a third of responses to a question on barriers to apprentice employment said that “interest in the sector” was a problem while over a quarter said that potential apprentices lack the appropriate attitudes and behaviours.

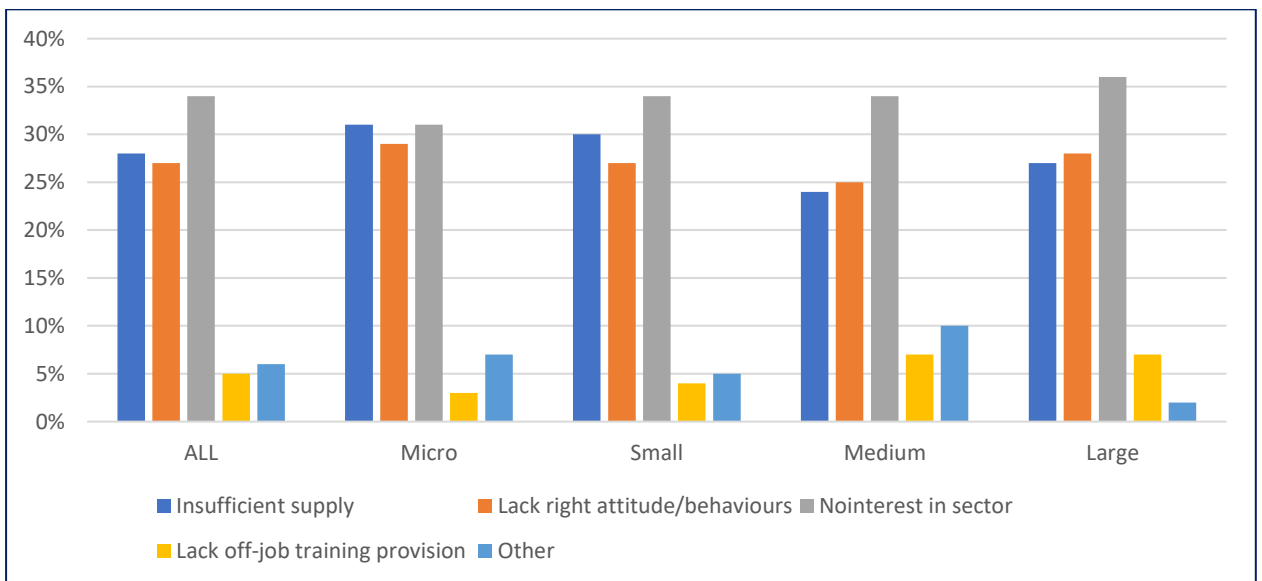
The sobering bottom line is that around two thirds of employers (61%) regard attitudes, behaviours and interest as being the major barrier to the employment of apprentices in edible horticulture.

Figure 21: Barriers to apprentice recruitment



Base: 533 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Figure 22: Barriers to recruiting apprentices by size of company



Base: 528 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

4.3.2 Young People

A majority of respondents commented on their inability to attract young people to the sector. Some argued that young people do not possess a good work ethic, are too busy on their mobile phones, or are not interested in working hard. This ties in with comments made specifically about apprentices and mirrors what Pye Tait Consulting has found in recent research in a number of sectors including construction, engineering and retail.

Others felt that relatively low pay and a poor image for the sector are contributory factors.

4.3.3 Legislative Barriers

Interviewees confirmed that, in their experience, UK nationals have avoided the sector in the last few years because it is not seen as attractive or skilled.

A field vegetable business mentioned that in the past, the sector had provided good starter jobs for young people who may not have been interested in an academic route through school. Some of these would then later be taken on to pursue a career in the sector.

The sector has adapted well to legislative changes related to the need for young people to be in education or training (or employment) up until the age of 18¹⁵, the EU Working Time Directive, strict health and safety. To increase the availability of labour, the sector may need to adapt further to attract workers, for example by being more flexible when it comes shift work.

4.4 Reasons for skills gaps

Skills gaps are skills and competences that are not present in the existing workforce (as opposed to skills shortages which are skills not present in the wider population for recruitment purposes). Respondents were offered a number of possible “reasons” related to such things as training cost, quality and availability, lack of internal mentoring capacity, loss of experienced staff due to retirement and to other employers, etc.

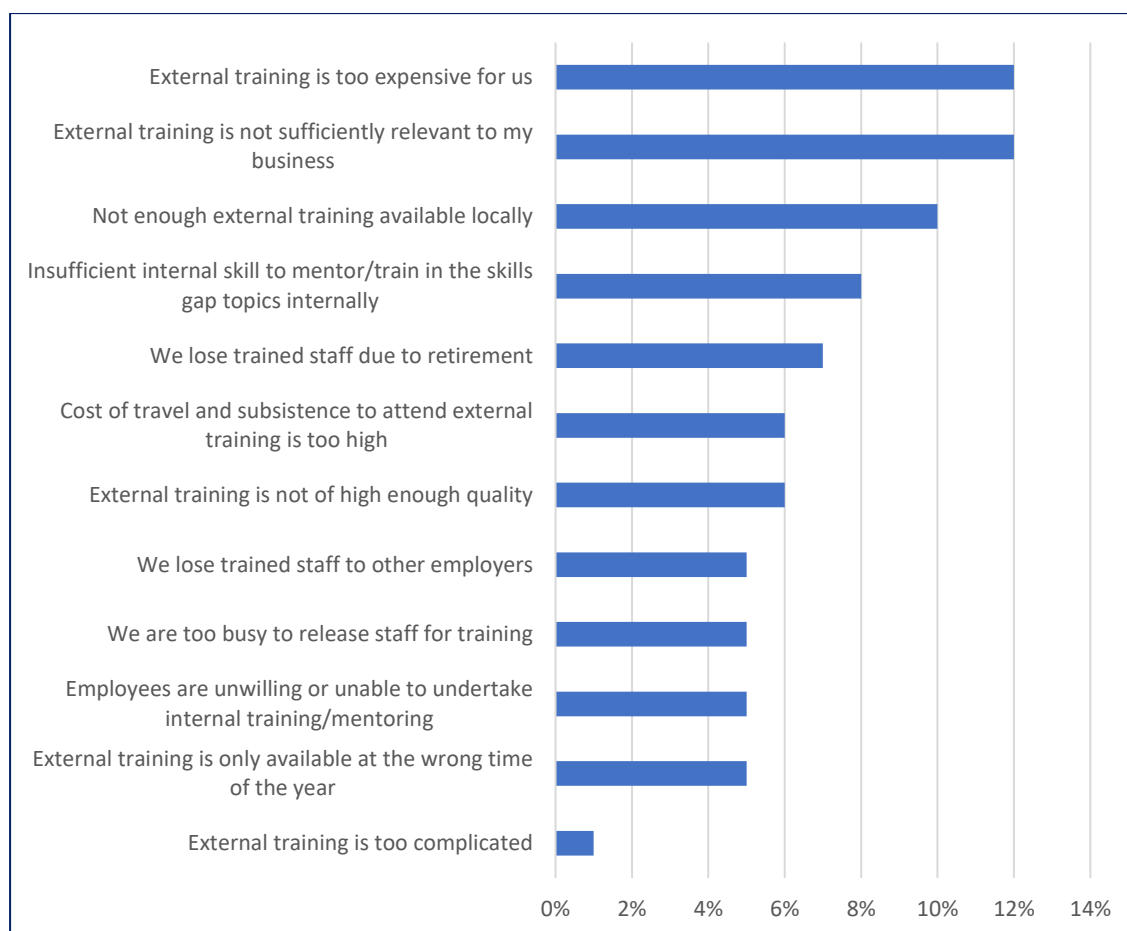
The two most common reasons for gaps mentioned by respondents was the lack of skills, or low skills and standards, the current workforce possess compared to workers from previous years and their growing concerns around the shortage of available workers.

¹⁵ As a result of the full roll out of Raising the Participation Age from 2014.

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As can be seen from the figures below – problems associated with external training (whether rightly or wrongly) account for almost half of the reasons given for skills gaps in the existing workforce. Some 46% of the reasons are associated with training being too expensive, not relevant, of insufficient quality, too complicated, offered at the wrong time of year, or not available locally. Around an eighth of answers referred to gaps being due to the loss of trained and experienced staff to retirement and to other employers.

Figure 23: Reasons for skills gaps



Base: 746 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

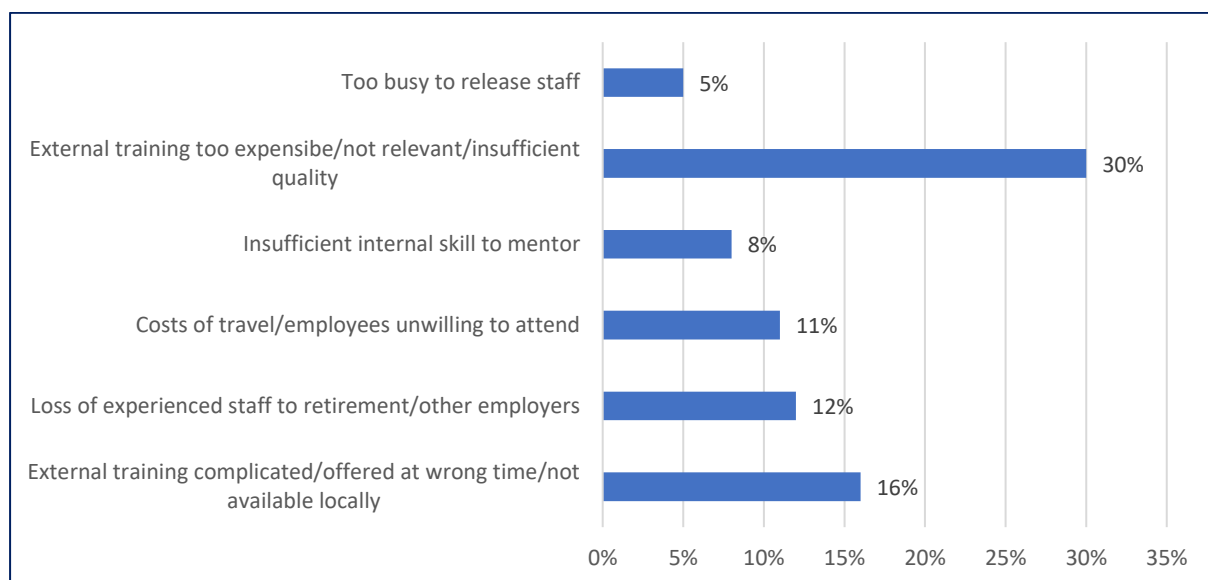
A small but notable proportion of qualitative responses argue that the level of skills, especially of new workers joining the sector, is deteriorating year on year. These respondents are concerned about the future of their business as well as the future of highly specialised growing techniques which could be lost, they believe, in the next ten years.

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'We are not seeing workers with the same skills as a few years ago.'

One respondent acknowledged what they called “the unattractively low pay” that is offered even though the job requires a certain degree of skill and attentiveness.

Figure 24: Skills Gaps Reasons - Grouped



Base: 746 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

There was very strong feedback from open-text additions to the survey and from in-depth interviews that attracting more young people and achieving a better public profile for the edible horticulture sector are major priorities.

'We need to find a way of attracting more people to the industry, particularly young people, by adapting and paying fairly and creating user-friendly workplaces.'

Two respondents claimed that the problem was not with skills per se but with the inability of younger recruits to work hard and not having the correct attitude and mindset to the work.

Eighteen respondents mentioned language barriers. The poor English language skills of seasonal European workers was a concern for them as this affects communication and teamwork. Two respondents would like to see more English language training available to tackle this problem with another respondent highlighting the importance of understanding English in relation to health and safety training and understanding basic instructions. Another respondent claimed that some non-UK workers will exaggerate their ability to speak English when applying for the job however when they arrive their level of English is not what it was claimed to be.

'Language barriers are a real problem because it leaves gaps in training - you don't know what they have and haven't understood.'

4.5 Skills Scoring

As a key component of the Edible Horticulture Skills Survey, respondents from all sub-sectors were asked to score the current level of skills for a selection of job-role groups such as managers or skilled trades on a scale from 1-10 – where one is the lowest score and ten the highest.

Respondents were also asked to assess the future demand of the skill from 1-10, with “5” meaning that the demand of the skill will stay the same, that is at the current level.

The results below are related to the Production sector only. The skills scoring for the packhouse sector is illustrated in the separate packhouse sub-sector report.

The two questions provide a great deal of data for AHDB – for current skill levels, and what employers’ scores show to be the most important priorities in skills for the future. Where the capabilities of their current workforces are concerned, employers rate most of the listed skills with scores of 8 and above. These range from the mechanical process skills of grading, packing, weighing and order fulfilment through the vital skills of food safety and hygiene and health and safety, to the scientific skills of agronomists.

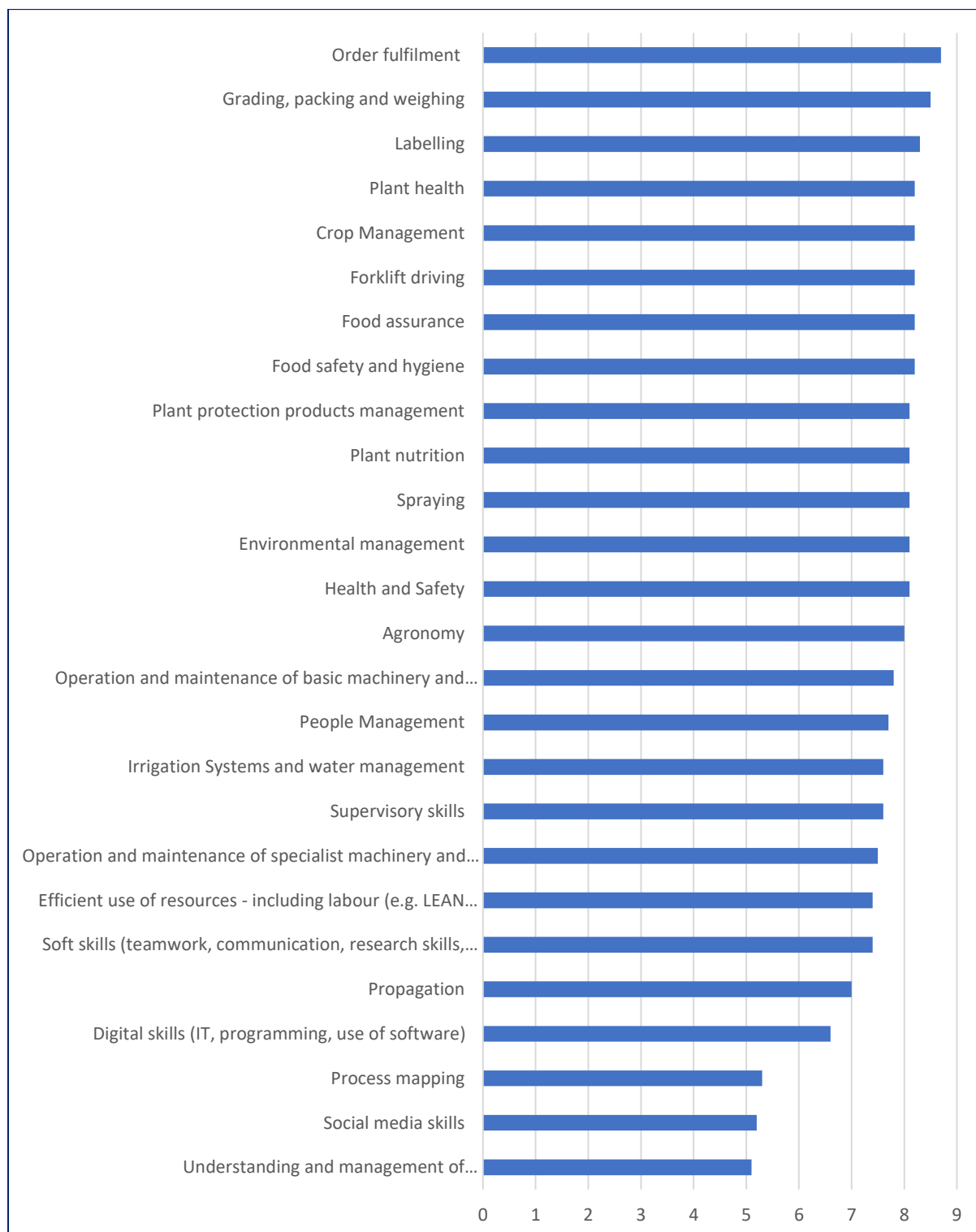
All of these skills could be considered as being at a “very good” level.

Skills that are scored from 7 to 8 would usually be regarded as acceptable or good. In this case these include such skills as propagation, supervisory skills, equipment handling and people management.

Competences rated below 7 can be regarded as relatively poor. These include digital skills, social media skills, process mapping and automation and robotics.

Edible Horticulture Skills 2020

Figure 25: Current Skills Scores – Salaried workforce



Base: 526 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Edible Horticulture Skills 2020

Employers were also asked to rate the future demand for the same skills against the same 1 to 10 scale (where a score of five would mean no change in demand). These are listed in Table 12. The table compares how skilled employers believe their current workforces to be with how important they believe those same skills will be in the future.

Table 12: Future Change in Demand for Specified Skills

	Current skills	Future Demand	% change
People Management	7.7	7.7	0.0
Supervisory skills	7.6	7.8	2.6
Soft skills (teamwork, communication, research skills, sales, customer services, etc.)	7.4	8.1	9.5
Social media skills	5.2	7.1	36.5
Digital skills (IT, programming, use of software)	6.6	7.8	18.2
Understanding and management of automation/robotics/AI	5.1	7.3	43.1
Operation and maintenance of basic machinery and equipment	7.8	8	2.6
Operation and maintenance of specialist machinery and equipment	7.5	8.1	8.0
Health and Safety	8.1	8.3	2.5
Food safety and hygiene	8.2	8.3	1.2
Food assurance	8.2	8.5	3.7
Environmental management	8.1	8.7	7.4
Efficient use of resources - including labour (e.g. LEAN Management)	7.4	8.2	10.8
Forklift driving	8.2	8.2	0.0
Crop Management	8.2	8.5	3.7
Irrigation Systems and water management	7.6	8.1	6.6
Propagation	7	7.5	7.1
Spraying	8.1	8.3	2.5
Plant health	8.2	8.3	1.2
Agronomy	8	8.3	3.8
Plant nutrition	8.1	8.4	3.7
Plant protection products management	8.1	8.3	2.5
Process mapping	5.3	7	32.1
Labelling	8.3	8.4	1.2
Grading, packing and weighing	8.5	8.4	-1.2
Order fulfilment	8.7	8.6	-1.1

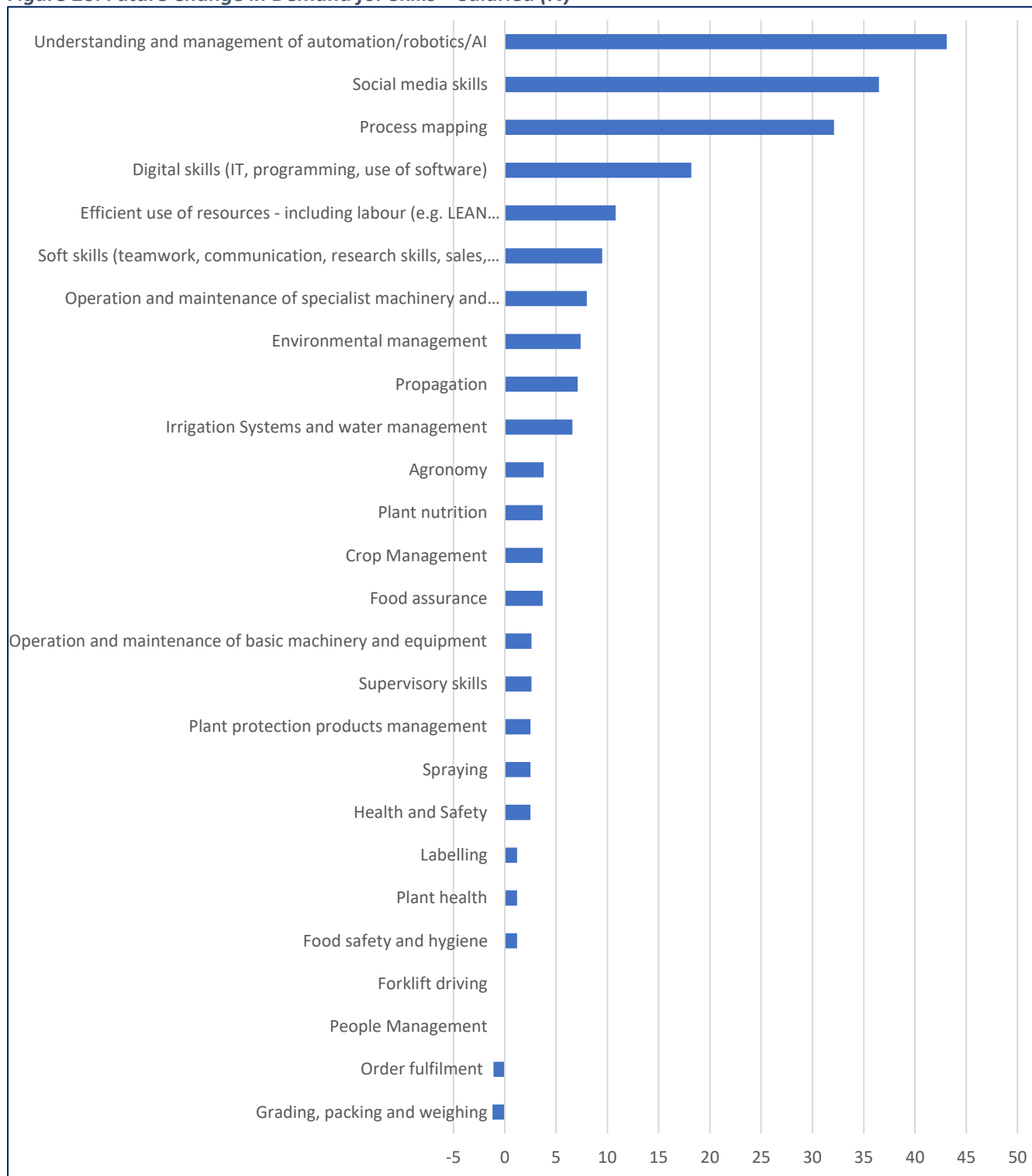
Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Respondents highlighted the need for higher level skills in the percentage changes they attributed to certain skills but particularly digital, automation, social media and process mapping – all of which were accorded changes in demand exceeding 18%.

Edible Horticulture Skills 2020

Employers believe that a number of other skills will increase in importance by a significant amount over the coming years. These include soft skills, propagation, irrigation systems, environmental management, specialist machinery operation,

Figure 26: Future Change in Demand for Skills – Salaried (%)



Base: 526 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

When asked the same questions about skills in the seasonal workforce employers were less confident about current skills and graded all categories as poor or very poor. Only two sets of skills were scored at 7 or above – grading, packing and weighing, and order fulfilment. A number of others were scored at 6 or above including both safety and health skills, labelling, fork-lift driving and food assurance. All of the other skills were graded as below 6 – that is, poor or very poor.

Further work might be required to identify and match against these scores the skills that employers believe are necessary for, and applicable to, the seasonal/agency workforce. However, an insight into employers' needs might be gained from their answers to the question about future demand for skills in the seasonal workforce.

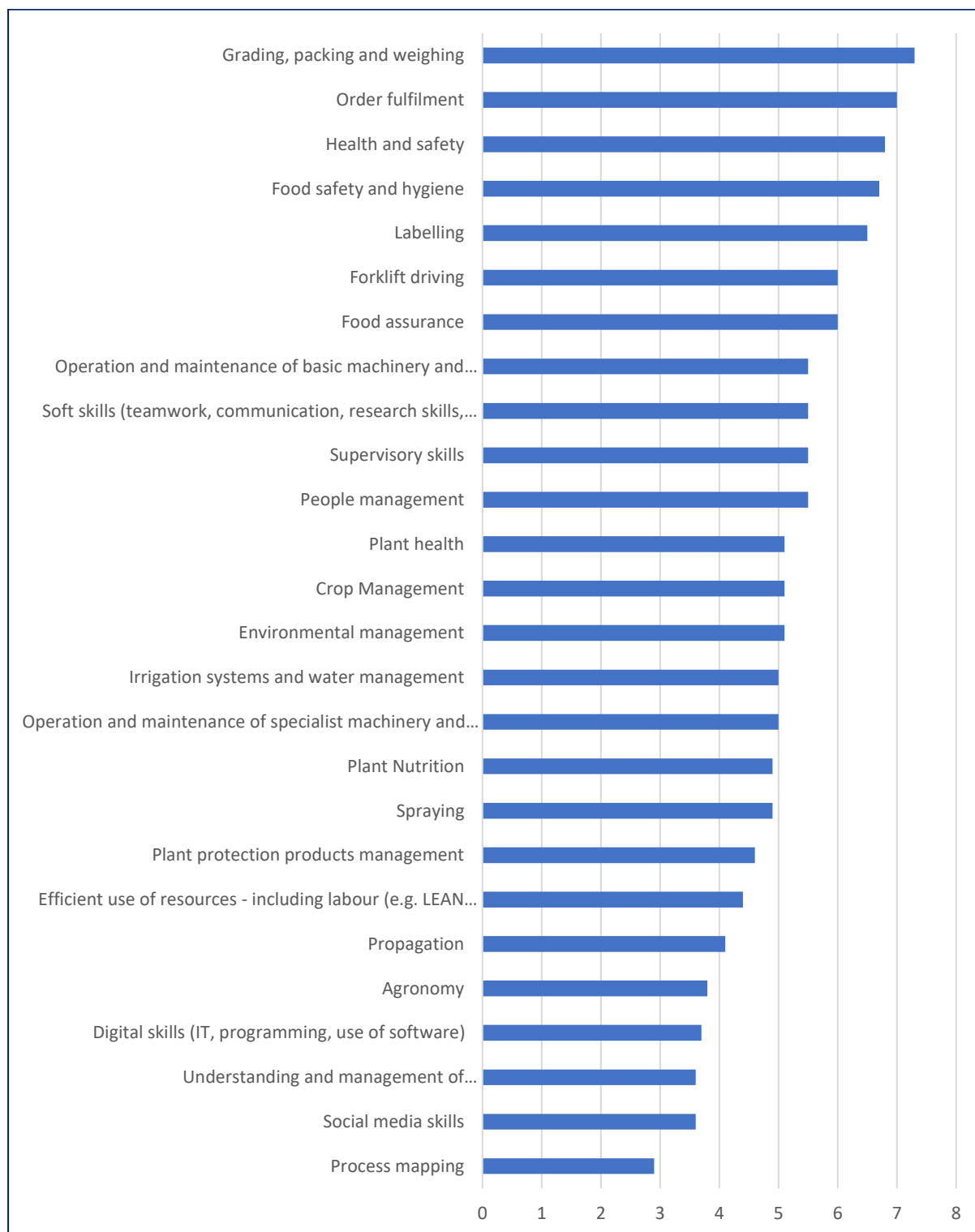
Employers are clearly seeking significant improvements in the skills of the seasonal workforce and this may well be related to anecdotal evidence we obtained from the in-depth interviews which indicated that many employers see their seasonal employees as a major potential source of “informed” skills for the future. One employer put this succinctly when he said that

“These people are keen and hard working and enjoy the work. We’d love to be able to train them up to replace the UK people who simply don’t want to work.”

In contrast to future demand for skills in the salaried workforce which peaked at around 43% increase in demand, the demand for seasonal skill improvements peaked at over 70%. Seven skills scored over a 40% increase in demand and no less than twenty skill-sets scored above a 20% increase in demand.

Edible Horticulture Skills 2020

Figure 27: Current Skills Scores – Seasonal Workforce



Base: 289 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Edible Horticulture Skills 2020

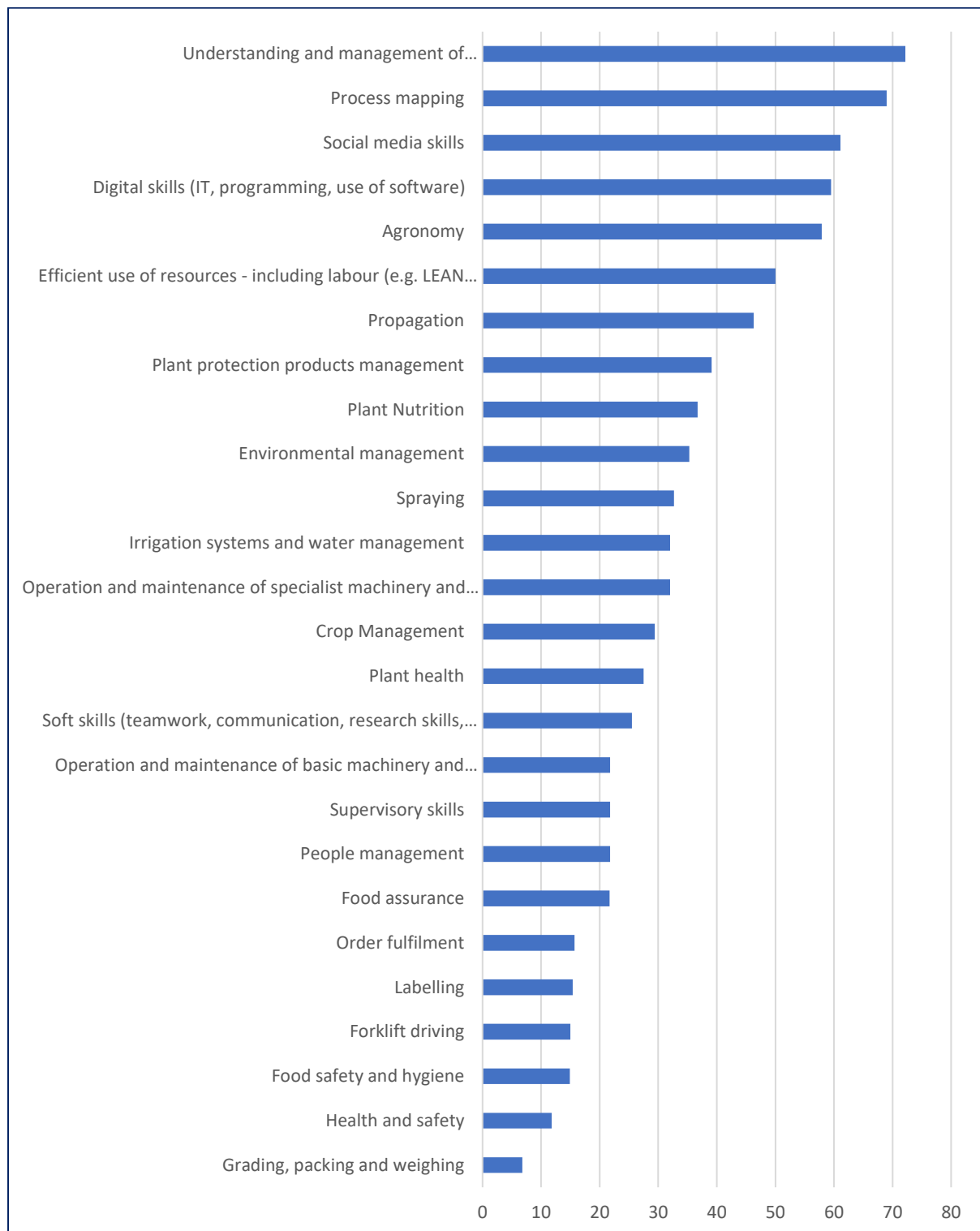
Table 13: Future change in demand for specified skills (seasonal workers)

	Current Skills	Future Demand	% change
People management	5.5	6.7	21.8
Supervisory skills	5.5	6.7	21.8
Soft skills (teamwork, communication, research skills, sales, customer service, etc.)	5.5	6.9	25.5
Social media skills	3.6	5.8	61.1
Digital skills (IT, programming, use of software)	3.7	5.9	59.5
Understanding and management of automation/robotics/AI	3.6	6.2	72.2
Operation and maintenance of basic machinery and equipment	5.5	6.7	21.8
Operation and maintenance of specialist machinery and equipment	5.0	6.6	32.0
Health and safety	6.8	7.6	11.8
Food safety and hygiene	6.7	7.7	14.9
Food assurance	6.0	7.3	21.7
Environmental management	5.1	6.9	35.3
Efficient use of resources - including labour (e.g. LEAN management)	4.4	6.6	50.0
Forklift driving	6.0	6.9	15.0
Crop Management	5.1	6.6	29.4
Irrigation systems and water management	5.0	6.6	32.0
Propagation	4.1	6.0	46.3
Spraying	4.9	6.5	32.7
Agronomy	3.8	6.0	57.9
Plant health	5.1	6.5	27.5
Plant Nutrition	4.9	6.7	36.7
Plant protection products management	4.6	6.4	39.1
Process mapping	2.9	4.9	69.0
Labelling	6.5	7.5	15.4
Grading, packing and weighing	7.3	7.8	6.8
Order fulfilment	7.0	8.1	15.7

Base: 289 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Edible Horticulture Skills 2020

Figure 28: Future Change in Demand for Skills – Seasonal (%)



Base: 289 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

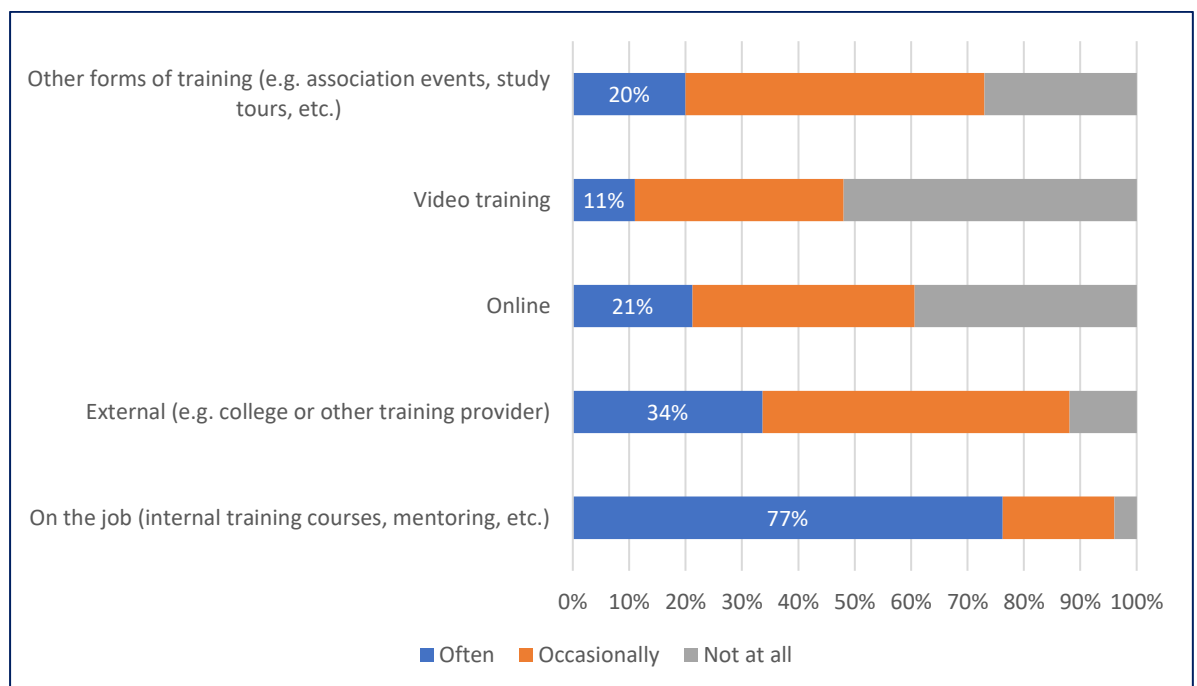
5. Workforce training and development

5.1 Training Approaches

5.1.1 Types of training

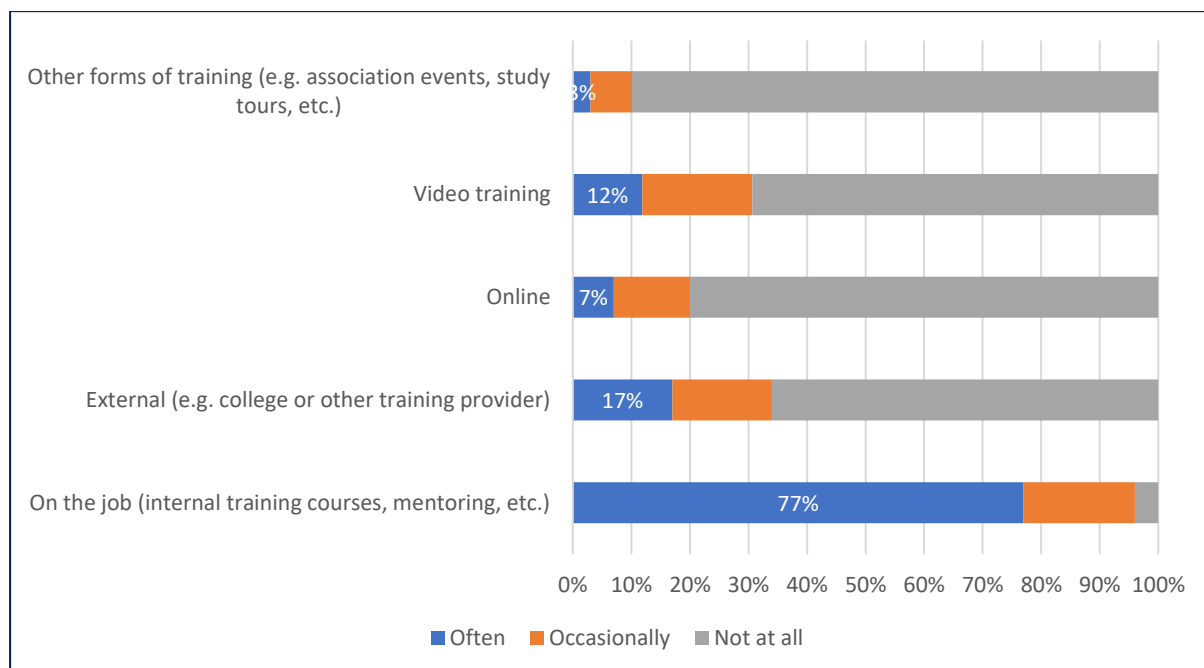
As in most other sectors of the UK economy, the majority of employers in the edible horticulture sector use on the job training for both permanent and seasonal workers. Around a third of employers use external training and around a fifth say that they use online systems for their salaried and permanent staff but only 17% of employers say that they use external training sources for their seasonal workforce,

Figure 29: Training systems used - Salaried/Permanent staff



Base: 1955 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Figure 30: Training systems used - Seasonal staff



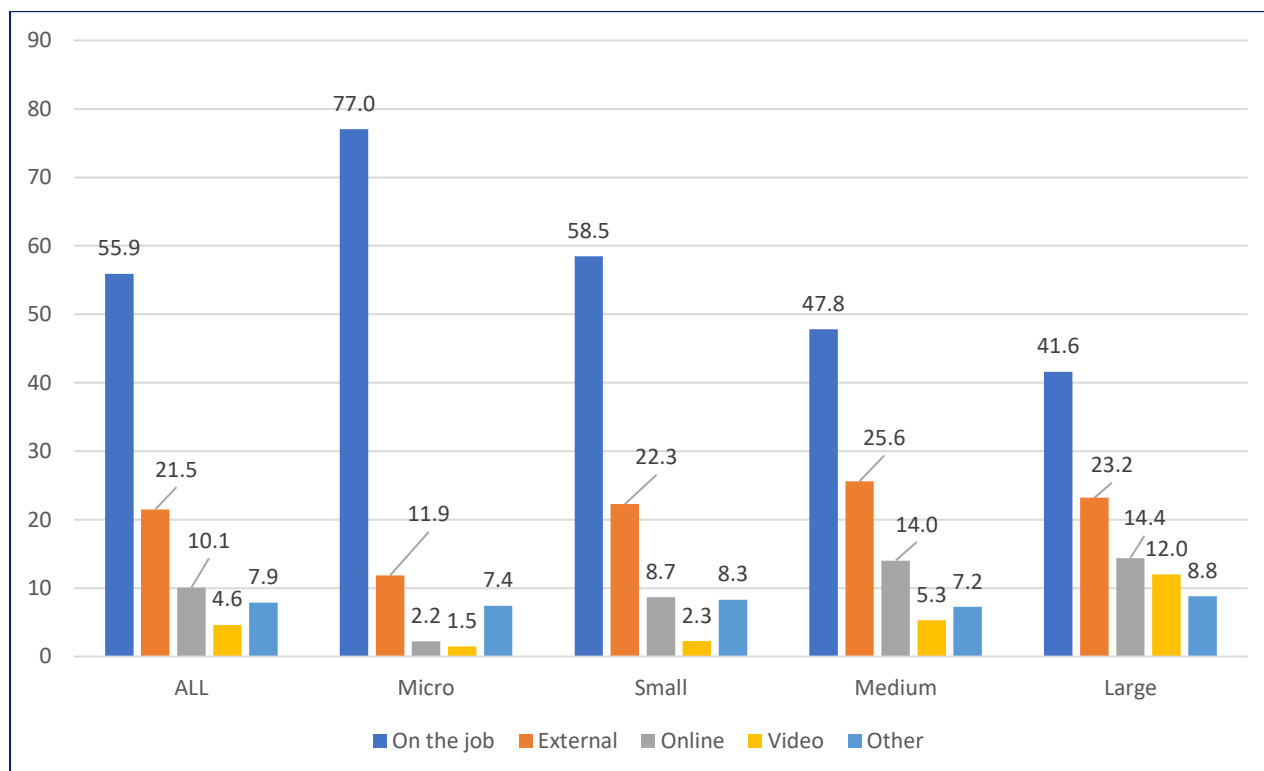
Base: 1169 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Our in-depth interviews revealed that online and video training is mainly used for more basic training like health and safety or food safety. Some interviewees felt that there may be opportunities for online language training. They were aware that face to face training in languages is usually more effective but recognised that cost issues would probably make that approach uneconomic.

In terms of video training, AHDB DVDs are regarded as being useful to teach basic concepts to seasonal workers. Interview participants were unsure if these forms of training could be expanded but several expressed a wish to see the topics covered increased and enhanced. Basic pest control training could be offered remotely and to a certain extent already is. The AHDB provides updates on pests and how to best handle them, according to the businesses interviewed.

Internal training is clearly more widely utilised among micro and smaller companies than medium and large. External training is used by around a quarter of small, medium and large companies.

Figure 31: Types of Training (by size of company)

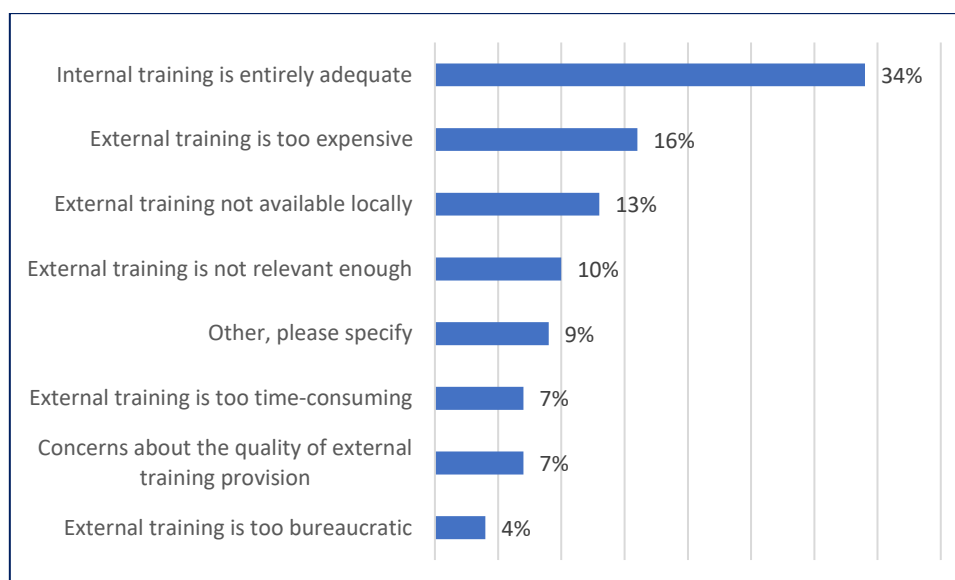


5.1.2 Reasons for not using external training

Employers’ reasons for not using external training resources are extremely familiar to Pye Tait Consulting from work in many other UK sectors. They break down into four major areas of concern:

1. The preference for internal training because it is viewed as entirely adequate – **34%**
2. External training being seen as too expensive/too time consuming/too bureaucratic – **27%**
3. The perceived inadequacy of external training in terms of relevance or quality – **17%**
4. No suitable external training being available locally – **13%**

Figure 32: Reasons for not using external training



Base: 645 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

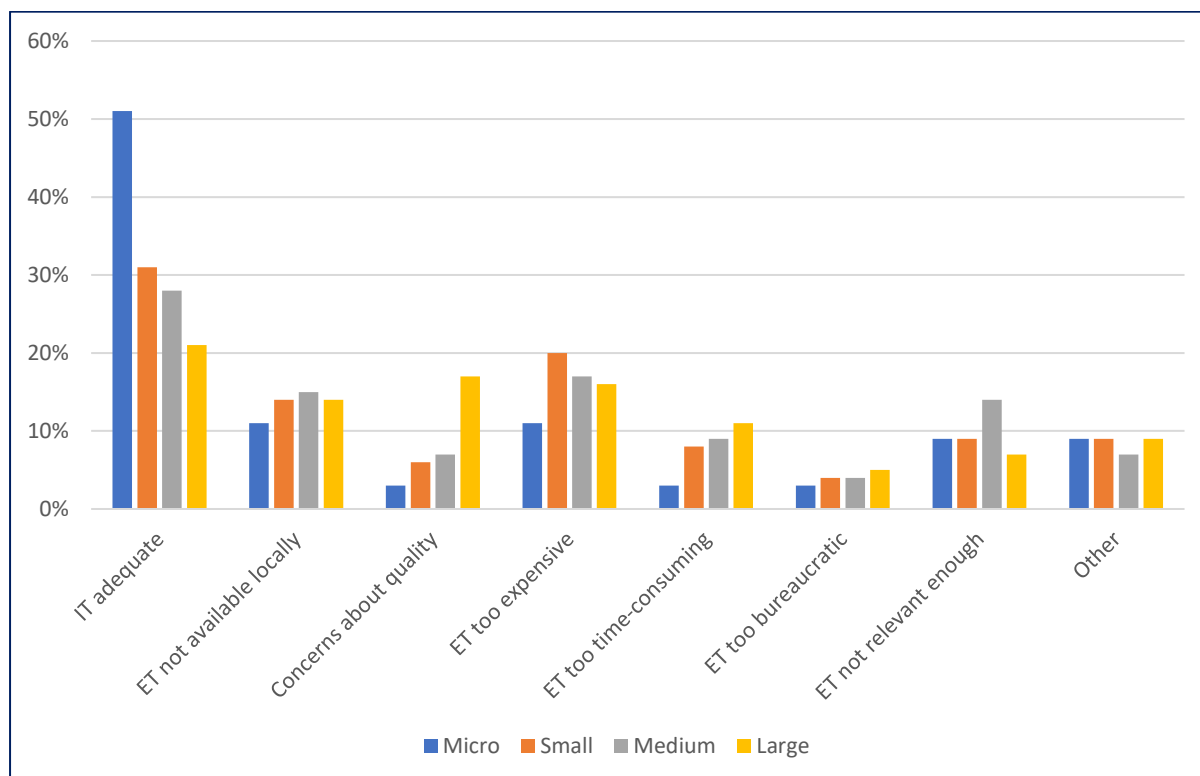
Perhaps the most pressing of these responses are those pertaining to quality, relevance and local availability (which probably translates into cost-effective access). The feedback is that almost a third of employers in the sector are not accessing external training provision because they cannot access it easily or cost-effectively enough. This may also connect with the view of a further 16% that external training is too expensive), that the training that is available is not relevant to their needs, or that such external training as is available is of inadequate quality.

The qualitative responses to the survey and the in-depth interviews provided more insights into employers' reasoning surrounding the topic of external versus internal training.

Some survey participants told us that internal training is generally entirely adequate for basic tasks and skills. They tend to send people out for externally-sourced training for specialist training such as forklift driving or spraying which may require a licence. Similarly, operation of machinery and equipment may require similar formal training.

The availability of training is also affected by the challenge of organising training with sufficient numbers of participants. Local area specifics may also play a role. For instance, growers situated in regions dominated by dairy farming may struggle to find suitable training. On occasion, growers cooperate to facilitate external training, but there may be practical difficulties to match individual business' training needs. A grower noted that, in the past, specialised horticultural colleges would provide training, but these have been closed. They argue that the present system of land-based colleges cannot fill the gap this has created because they are too focused on farming.

Figure 33: Reasons for not using external training by size of company



Note: IT = Internal Training; ET = External Training. Base: 638 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

5.1.3 Specific Training Needs

In their comments, survey respondents identified a wide range of training needs reflecting the broad, varied, and highly specialist nature of the edible horticulture sector.

Of those respondents who identify a training requirement, the majority state that training in the use of new or advanced technologies will be important to their business. Of these, the majority specify that training is (or will soon be) required in the use of automated systems, most typically autonomous and semi-autonomous tractors, crop harvesters, and packhouse processing systems. Several of those who mention automation link it to the need to keep up with advancing technologies and several noted the link to possible problems with accessing seasonal workers.

“Due to the shortage of seasonal workers we are looking into automation of tractors, sprayers and veg crop harvesters.”

After training in new technologies, the most common training needs are agronomic in nature, relating to the cultivation and technical growing of specific crops. Some of these agronomic training needs are quite generic in nature – a notable number of

respondents mention the need for more training in spraying and pesticides – while others are more specialised and speak to the highly specialist nature of many sectors of edible horticulture. Respondents talk about the need to improve training in gourmet mushroom cultivation, watercress growing, the production of organic fruit and soil improvement (to name but a few).

A large number of respondents also point out that more training could be provided to tackle the issue of language in the edible horticulture sector. While some respondents state that improved English language training could remedy the language barrier and improve the skills levels of non-UK workers, roughly equal numbers of respondents also suggest that more training (especially generic training such as manual handling and forklift driving) should be offered in different languages.

5.1.4 Training apprentices

A good many survey respondents said that they work with their local agricultural college, nearest college, or a university to train their apprentices. Others said that although they do not currently have apprentices, they are planning on doing so in the future.

The most popular college (mentioned by seven respondents) was Hadlow College in Kent and the most popular university cited by seven respondents was Harper Adams University in Shropshire. However two of these respondents said they use Harper Adams University more for promoting their business at events days and for recruitment rather than for training purposes. One of these respondents said:

'In general, we've found working with colleges not that helpful. Recruits are few and far between - maybe a lack of interest in vegetable growing or simply a smaller pool of agriculture/horticulture students at present.'

Some respondents stressed that instead of working with colleges or universities they have worked with other training providers such as IPS International in Kent, Gen2 and Jobs Growth Wales. One respondent suggested that they would like AHDB to offer more training for the sector.

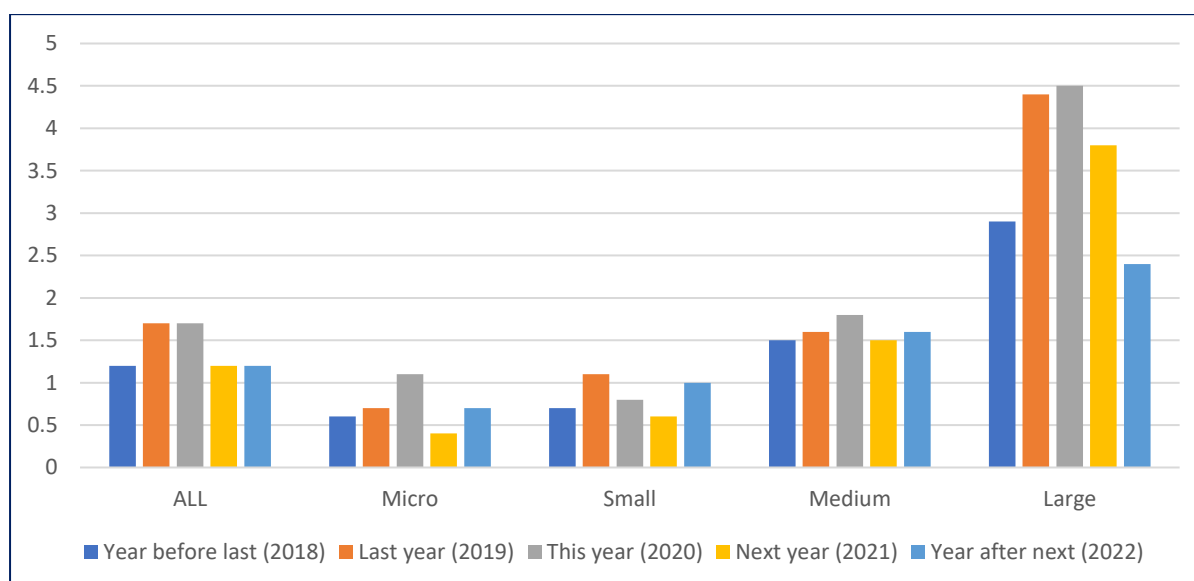
All colleges, universities and other training providers mentioned by respondents are listed in the table (14) below (showing the number of respondents who have trained apprentices at each).

Edible Horticulture Skills 2020

Table 14: Training providers and colleges used for apprentice training

Provider	Number of businesses
Hadlow College, Kent	7
Harper Adams University, Shropshire	7
Eastern & Otley College, East Anglia	6
University of Lincoln	4
Reaseheath College, Cheshire	3
Pershore College	3
Myerscough College, Preston	3
Cirencester college	2
Merrist Wood College, Surrey	2
University of Nottingham	2
York College	2
Sparsholt College, Hampshire	2
Askham Bryan College, North Yorkshire	2
Berkshire College of Agriculture	1
Wyvern College, Hampshire	1
Boston & North Wash training college	1
College of East Anglia	1
Bishop Burton College, Yorkshire	1
Scottish Rural Agriculture College	1
Kings College	1
University of Exeter	1
Cardiff University	1
University of Bristol	1
IPS International, Kent	1
The Farming Advice Service	1
Nuffield College, University of Oxford	1
Gen2	1
Runshore College, Lancashire	1
The Duchy College Rural Business School, Cornwall	1
Bangor University	1
Aberystwyth University	1
University Academy Holbeach, Lincolnshire	1
Hartpury College, Gloucestershire	1

Figure 34: Numbers of apprentices employed and projected by size of company



Base 122: Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

5.1.5 Trainers, Verifiers and Assessors

When considering the in-house training capacity of businesses, at a first glance average numbers of trainers, verifiers and assessors seem to be quite substantial. Almost 450 trainers. And over 100 each of verifiers and assessors.

The companies that reported such staff – around a third of the total for trainers, and less than one in ten for verifiers and assessors – employ an average of between two and three each (the mode, however, is one and the median two).

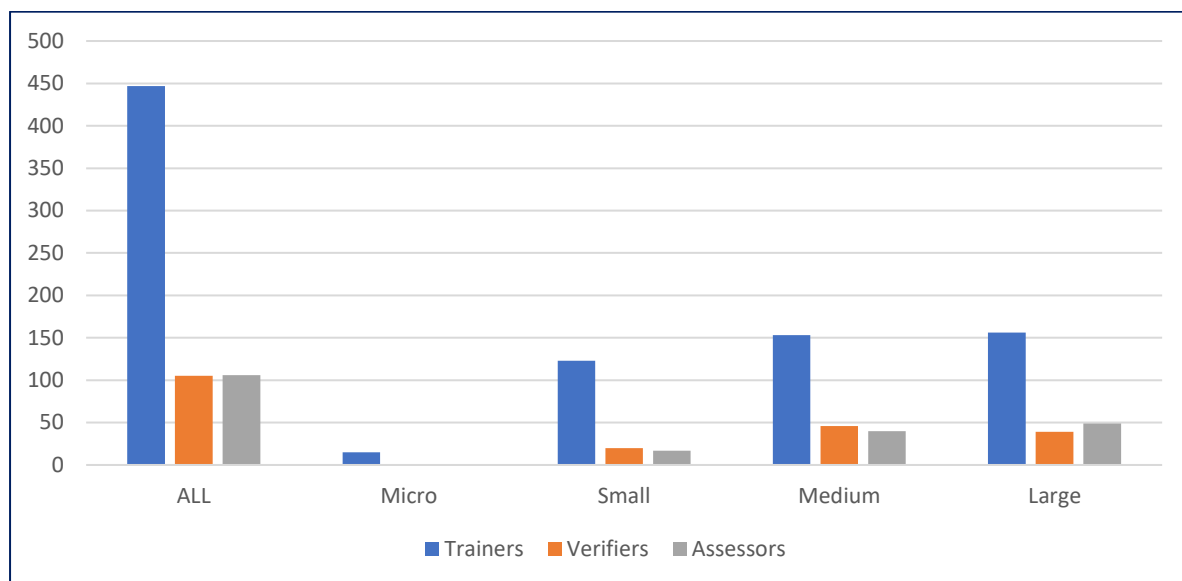
The edible horticulture sector employs just over 2% of its salaried staff as trainers but only around one in two hundred is a verifier and a further one in two hundred an assessor. Both of the latter categories are likely (judging by the number of companies reporting such staff) to be employed by the large companies in the sector.

Table 15: Trainers, Verifiers and Assessors

	Base	% of the sample employing each role	Average number employed	Total reported	% of salaried/permanent staff
Trainers	161	29.0	2.8	447	2.2
Verifiers	46	8.3	2.3	105	0.5
Assessors	41	7.4	2.6	106	0.5

Base 269: Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Figure 35: Trainers/Assessors/Verifiers by Size of Company



Base 267: Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

5.2 Funding

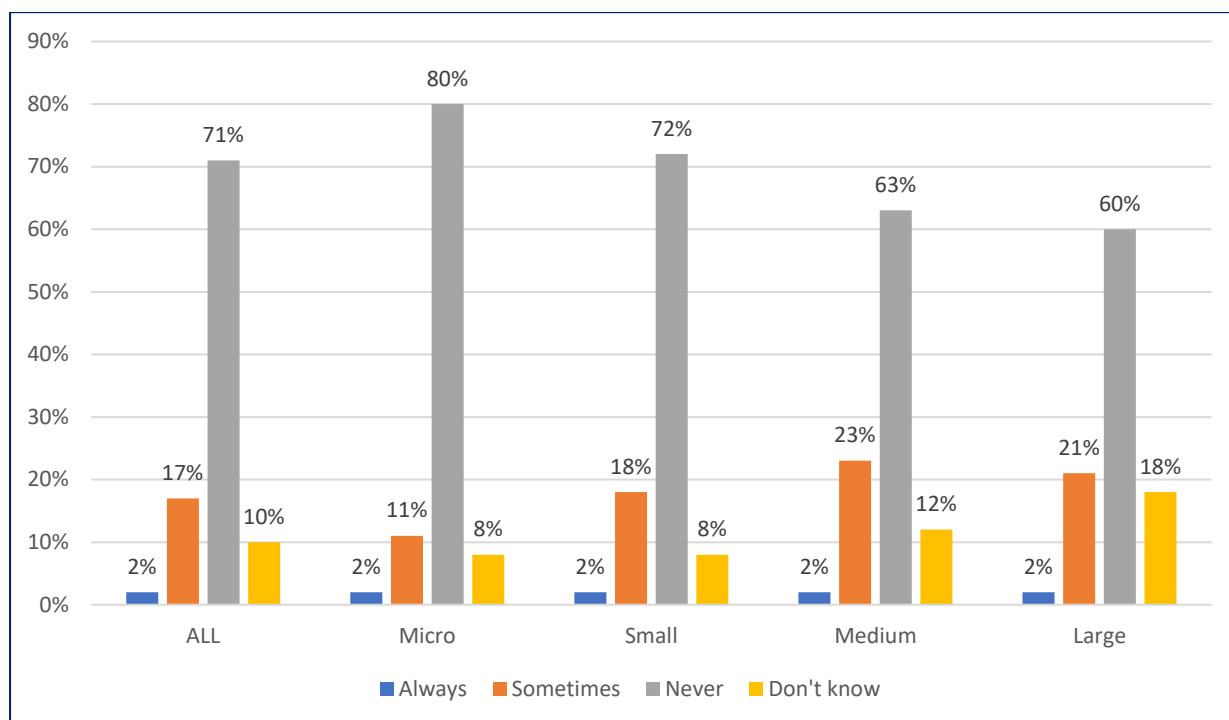
A number of questions in the survey sought information on how companies in the sector fund training whether for upskilling or for apprentices.

5.2.1 Upskilling

Funding for upskilling may support businesses struggling with the costs of external training. As the figure below suggests, however, the majority of businesses (71%) never access related funding and less than a fifth sometimes or always access funding for training.

Edible Horticulture Skills 2020

Figure 36: Use of funding for upskilling (by size)



Base: 542 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

The proportions of companies “always” accessing funding is constant across the size bands but the proportion “sometimes” accessing it increases, and the proportion of companies “never” using such funding reduces a little as size increases.

5.2.2 Apprenticeship levy

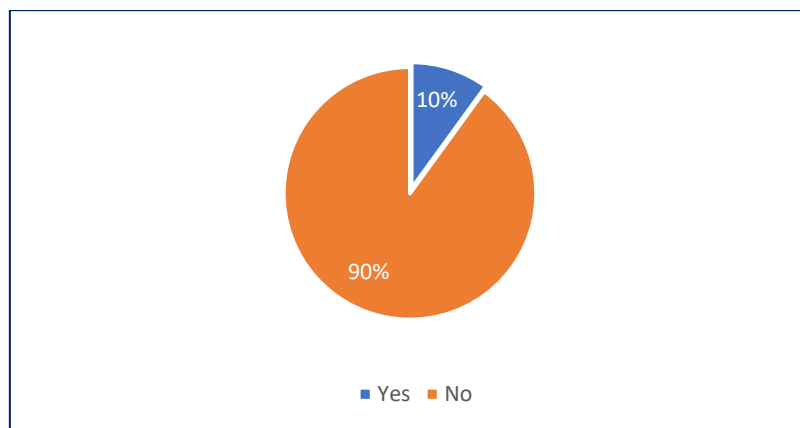
The figure below shows the proportion of respondents to the survey who pay the apprenticeship levy. The proportion for the sector as a whole will be much lower because the survey deliberately over-represented larger companies.

The levy itself is paid by employers with a wage bill of over £3m per year. These employers pay 0.5% of their total annual wages total (i.e. £15,000 per year for a company at the lower threshold). The government says that only 2% of employers pay the apprenticeship levy, but that the funding directly supports almost 50% of all apprenticeships (2017/18).

Smaller employers – with a wage bill of less than £3m per year can employ apprentices and receive support from the government which amounts to 95% of the cost of the apprentice.

Edible Horticulture Skills 2020

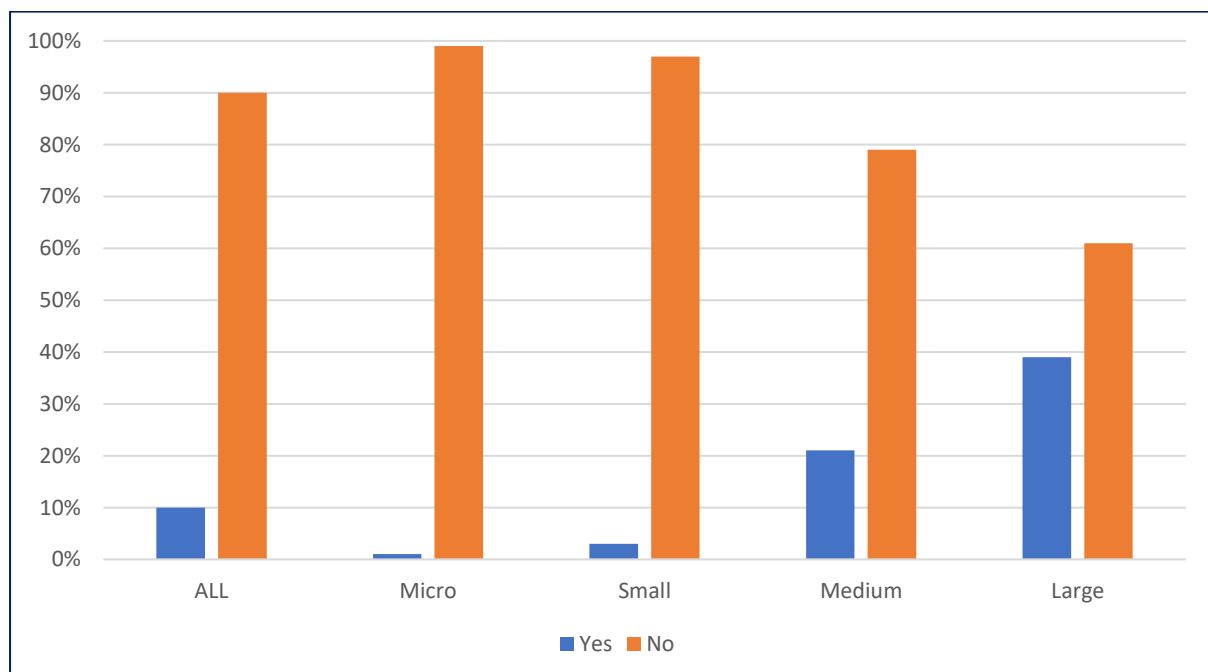
Figure 37: Businesses paying Apprenticeship Levy (Survey respondents)



Base: 532 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

When examined by size of company around 20% of medium and 40% of larger companies pay the levy. Although a small number of respondents in the micro and small categories said they pay the levy, these companies may well be mistaken, perhaps by being in receipt of government support for apprentices, but nevertheless falling below the levy threshold.

Figure 38: Payment of the Apprenticeship Levy (by size of company)



Base: 532 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

The majority of survey respondents who commented on the Apprenticeship Levy said that they did not use it, either because they do not employ apprentices or because their businesses are below the Levy threshold.

About a quarter of medium and larger companies say that they have had a negative experience of the levy. Their comments tend to focus on its financial impact. Several of the employers say that the levy imposes too great a financial burden on them and that they do not see a sufficient return on investment. A handful of other respondents mention that the paperwork is too time consuming, while others are more concerned with the quality of the apprentices themselves. Four of the respondents say that they are disappointed with the quality of apprentices they have had in the past.

A few respondents also mentioned more specific challenges associated with the levy and with the system of apprenticeships more generally. One employer said that they have seen no benefit because they have been unable to find a training provider to partner with; another said that training apprentices is made difficult by the fact that it is often not easy to insure under-21s on farm equipment.

Those who have had a positive experience of the levy (around a third of medium and large companies) mentioned the high quality of the apprentices they have recruited. Four respondents say that they are generally happy with the apprentices they have taken on. Others said that the system has been helpful as it has enabled them to develop bespoke training and upskill their current workforces.

5.3 Qualifications

T Levels

T Levels or Technical Levels are a UK government initiative aimed at increasing post-16 vocational and technical education in colleges at Level 3 and offering an alternative two-year programme for pupils who do not wish to undertake A Levels.

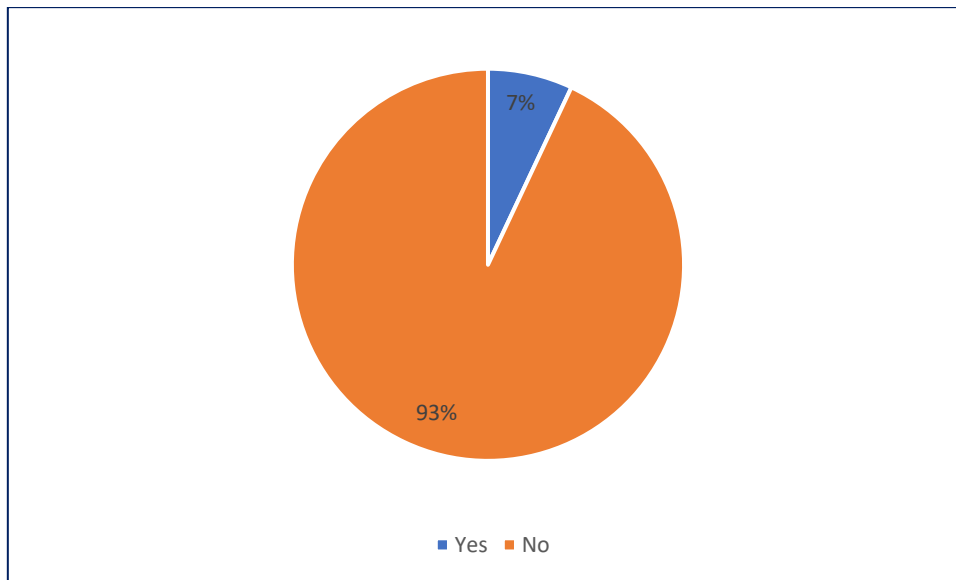
Initial T Levels will be launched in the autumn of 2020 but, from September 2023, pupils will also be able to take T levels in the subject of agriculture, land management and production. This means that pupils may specialise in production, which may have close links to the edible horticulture sector. Pupils will need to complete a total of 315 hours of work placements in the sector of their choice.

One employer who was interviewed suggested that the upcoming T levels may serve as a source of new labour and may increase awareness of the sector and the opportunities it offers for young people.

The survey has, however revealed that very few businesses in the sector are aware of T levels. Indeed, nine out of ten businesses are not aware of the new qualifications as of June 2020.

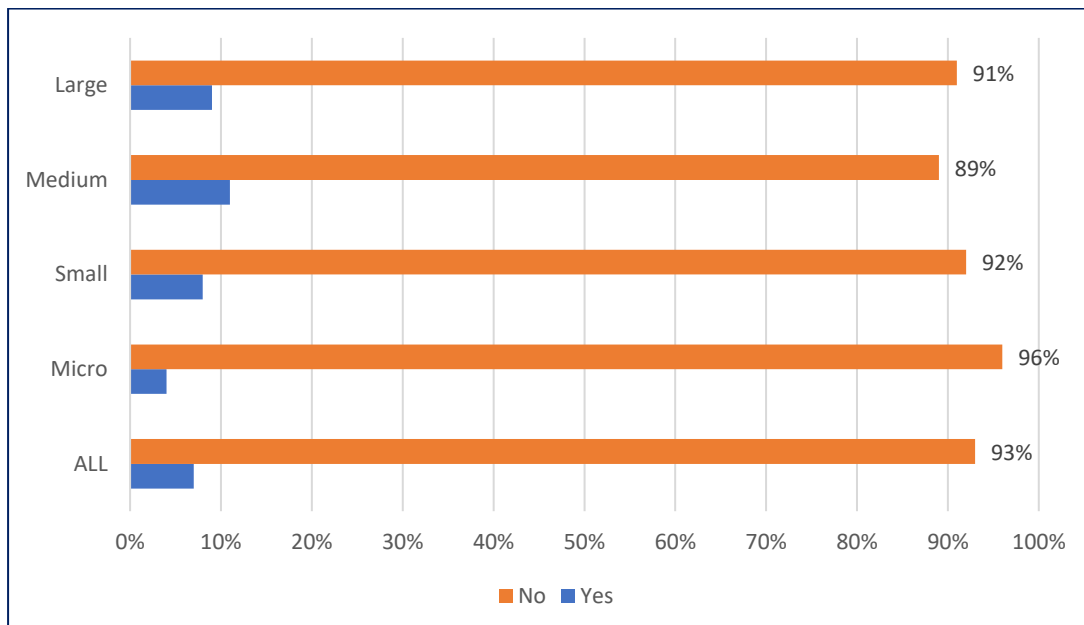
Edible Horticulture Skills 2020

Figure 39: Awareness of T-Levels (All businesses)



Base: 550 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Figure 40: Awareness of T Levels by Size of Business



Base: 547 respondents, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

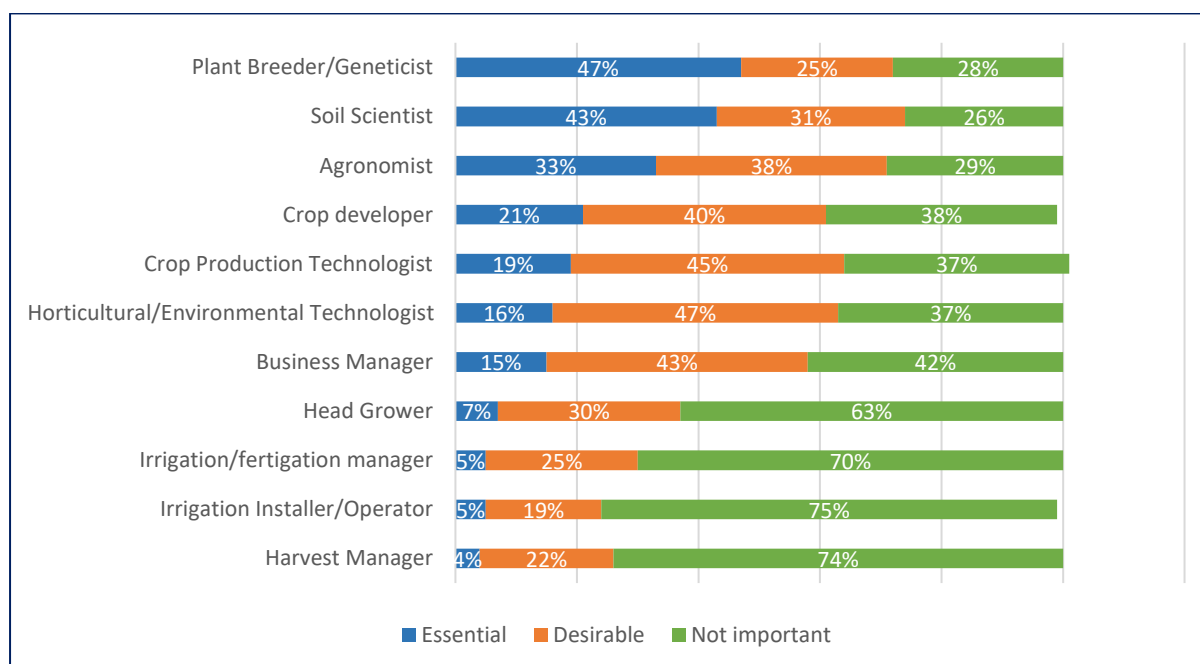
Edible Horticulture Skills 2020

Degrees

Apart from exploring training needs and skills, this research also sought to understand business perceptions regarding occupations requiring degree levels. The findings on these perceptions are set out below:

- Occupations requiring scientific knowledge are mostly seen as requiring a degree or benefitting from a degree;
- The high proportion of “desirable” and “not important” for more technical or business focused occupations may be a sign of low related awareness;
- It is more likely, however, especially given the age structure of the sector that respondents assumed that these occupations or roles may also be open to senior workers, with a high amount of experience. Traditionally, many workers now in leading, managing or supervisory roles may have risen through the ranks of their company;
- As recruitment and availability of labour are essential concerns of the sector, awareness may need to be raised on the level of qualification required per occupation;
- The results for essential and desirable are not enough to suggest that there may be appetite in the sector for the introduction of degree apprenticeships, combining higher and vocational training. Nevertheless, as part of future staff planning, this may need to be considered as a potential route as well.

Figure 41: Perceptions about occupations requiring degree level skills/knowledge



Base: 5158 responses, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

Edible Horticulture Skills 2020

It should be noted that this question sought to understand business perceptions regarding occupations requiring degree levels. The responses reflect individual company views on related degree requirements in general. The responses do not reflect the extent to which the listed occupations are relevant to the respective edible horticulture sub-sector. For instance, soil scientists may be less relevant for the Mushroom and Protected Edibles sectors and this role may be known as “crop nutritionist” in other sectors.

6. Change & Technology

In the third decade of the twenty-first century change remains a significant issue for UK businesses. The speed of technological, economic and social change is making it ever more vital that companies keep up and adapt.

Businesses in the Edible Horticulture sector were asked to rank drivers of change and to give their view on how current job roles might change in the future and what future job roles may look like.

6.1 Drivers of change

Employers were asked to score twenty-two potential drivers of change on a scale from 1-10. The drivers of change covered issues related to labour and skills, commercial factors like consumer demand and margins, as well as legislation/regulation.

As Figure 42 below suggests, the top-five drivers of change identified by the Edible Horticulture sector are:

1. Pressure on margins
2. Availability of labour
3. Consumer demand
4. Change in consumer habits
5. Skills shortages

Technological developments (e.g. automation and robotics) score relatively lower than the variables mentioned above but this may simply be a reflection of the fact that employers see more immediate factors as being of greater concern. Our questions on the scoring of the future demand for certain skills indicate very clearly that employers are fully aware of the need to adjust and adapt to new technology.

The top five drivers of change can each be attributed to a combination of social and economic factors with varying levels of contribution from technological change. For example, consumer demand is being affected not only by pure economic drivers but by social and attitudinal change as well as by the impacts of new technology as seen in the move towards online shopping and the use of social media quality reviews.

6.1.1 Pressure on margins

Businesses that were interviewed generally confirmed that margins are tight in the sector. They explained that retailers dominate the market and are able to set prices. Often, prices are fixed per growth season. In addition, retailers may also heavily rely on competitive imports.

While UK production in Soft Fruit can, according to the interviews, fully supply UK demand from May to October each year, this is less the case for protected edibles such as cucumbers and tomatoes, where large quantities are imported. One grower went so far as describing the UK as the “dumping ground” for foreign produce.

Feedback indicates that the sector is competing heavily on price and that only a minority of companies marketing their produce in quality terms.

This is further underlined by feedback suggesting that the employers we interviewed regard margins as being badly impacted by the minimum wage.

6.1.2 Availability of Labour/Skills Shortages

The main and pressing concerns for the majority of the sector can be summarised under two headings:

- Seasonal labour, and
- Recruitment of UK-based people

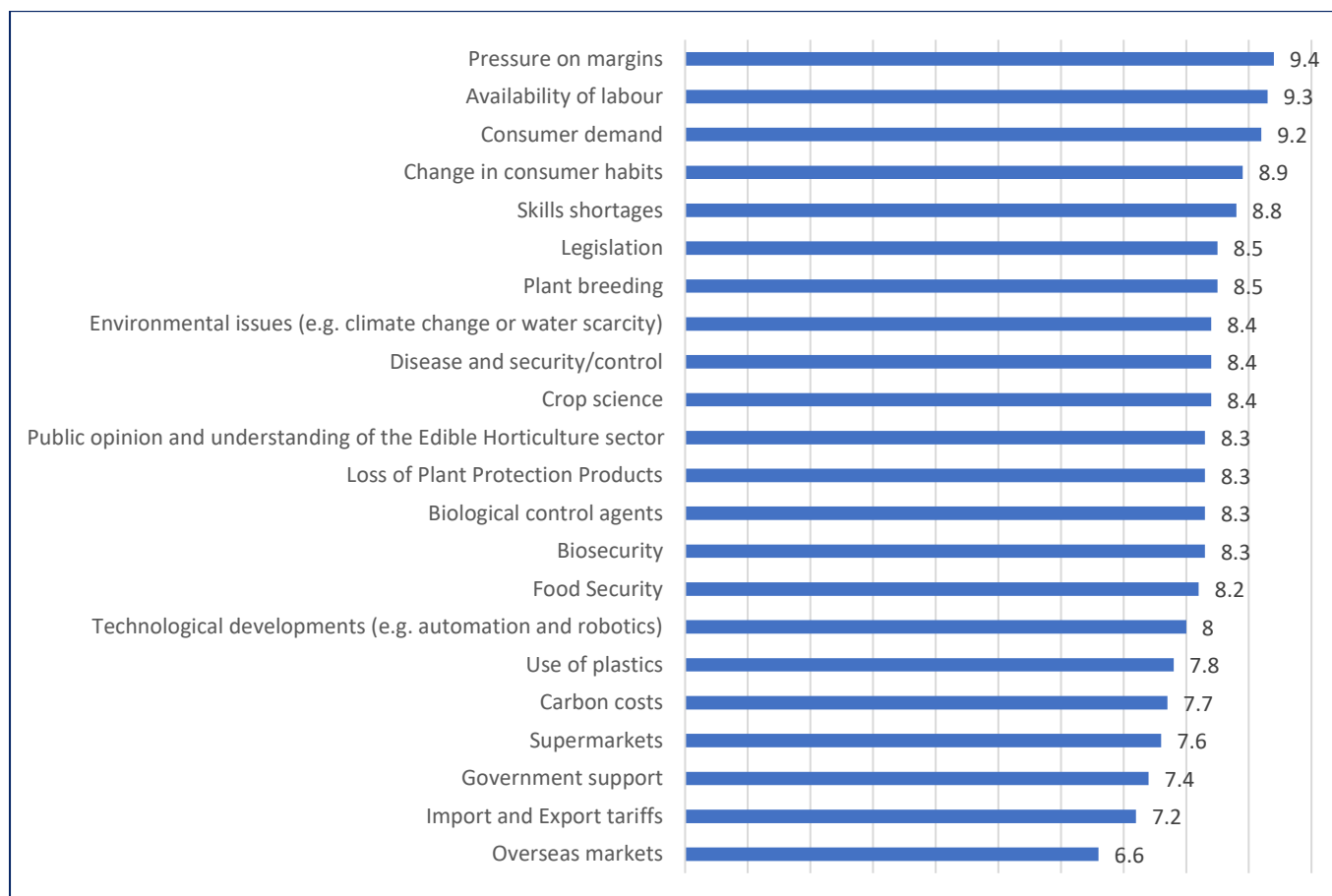
Issues with seasonal labour have been discussed earlier in the report. They focus on immigration regulations as we move forward into the post-Brexit era. Businesses are extremely worried that tighter regulations will choke-off the flow of seasonal labour from the EU with almost no alternative sources of such labour.

Of almost equivalent importance are the industry’s concerns about an “ageing” workforce and the need to recruit UK residents into the industry. Interviewees believe that the sector has a poor image and that young people do not understand the sector, its role, or the careers which are available.

Several interviewees bemoaned the “quality” of young people and their attitudes and behaviours. Comments on this topic were not confined to micro-firms but were heard from all sizes of companies in the form of comments that young people do not have an understanding of work-ethics and do not know how to behave in a work context. One executive in HR for a large employer commented:

‘We’ve been hearing about “work-readiness” for what seems like decades but young people in general are still simply not ready for the work environment when they leave school and college.’

Figure 42: Drivers of change



Base: 556 responses, 9714 responses, multiple choice question, Survey of 556 businesses in the Edibles sector, Pye Tait, 2020

6.1.3 Consumer demand/Consumer habits

There has been a great deal of change in consumer attitudes and behaviour in recent years and this has been the case for almost every UK sector. Two contrasting trends can be broadly identified: the increased impact of the “consumer society” as evidenced in increasing consumer expectations of year-round supplies of edible horticulture products; and the gradual effect of environmental issues on consumer behaviour.

Interviewees suggest that consumers in the UK expect food to be cheap and available independently of growing seasons and this would seem to be the result of highly successful supermarket practices driving prices down and attracting suppliers from all over the world using ever-less-expensive air freight for fresh produce.

In more recent years, however, a counter trend has been identified and this may well be strengthened by outcomes from the Covid-19 epidemic. This trend is towards environmentally-friendly production and transport and the government-

supported focus on locally-produced food. Covid-19 may also reinforce this trend if the UK government begins to prioritise strategic strength in the form of food security. These factors, as well as the increasing focus on food quality, may also result in an overall increase in food prices in the shops

A grower suggested that imported produce has often not been cultivated according to UK standards. He argued that retailers should take a more rigorous approach to food assurance and take into account the higher quality (as he sees it) being produced by UK providers. Another grower said that the quality required by UK food assurance schemes represents a competitive advantage in the market as it is developing in the UK at present.

Several growers called for more promotion of such schemes, further awareness raising of the quality of British produce and encouragement of consumers to buy locally grown food.

6.1.4 Legislation/Government support

As mentioned previously, of major concern to businesses in this sector are government plans to change immigration legislation once the UK officially leaves the EU. It features as the sixth most important driver of change.

The businesses we interviewed suggested a few avenues for government support, including the promotion of the consumption of food grown in Britain and more delegation of wage policies to the sector.

Perhaps the most important take-away from this scoring exercise is the fact that almost all of the listed drivers of change are scored as being very important (i.e. at or over 8). Only a few drivers score less than 7.5.

Government support is clearly not seen as the most important driver for change in the sector and there also appears to be a lack of any significant attention on exports.

6.2.5 Automation

Competitive factors and well as labour supply issues have the potential to address – at least in part and in the medium to longer term – two of the sector's most pressing concerns: margins/competitiveness, and seasonal labour.

The survey results and the interviews indicate that automation will in the long term alter the way the sector operates. A survey participant predicted:

“Use of manual labour will reduce, taken over by automation to cut costs and increase efficiency.”

Automation scores as one of the very important drivers of change (a score of 8) but interviewees explained that there may be barriers which will need to be overcome.

Automation will need to be cost-effective and more efficient than human labour and some interviewees mentioned that this was not the case at present in some of the new technology. The significant costs of investing in related technology are also a prominent barrier to automation.

While conceding that there is potential for automation, growers argue that technology meeting the sector's requirements and significantly reducing the need for labour is not readily available but may be introduced in five to ten years or at a later time. Growers generally assume that automated technologies will be introduced in a hybrid way, meaning that work processes are unlikely to be fully automated. Autonomous robots are seen as unlikely for the foreseeable future. For instance, for a harvesting robot to be fully autonomous, GPS accuracy would need to be increased to match the need of the sector. At present, GPS is accurate within 20mm, but the Edible Horticulture sector requires an accuracy of within 5mm.

Nevertheless, businesses predict that automation and innovation will alter job roles and skills requirements. For instance, a growing need for robotics and automation specialists in the sector is envisaged and businesses expect that upskilling will be required to operate upgraded existing technology like forklifts (which can now be made to be semi-autonomous in certain situations).

Aside from financial resources and technological developments needed for automation, cooperation and coordination with retailers will also be needed to facilitate automation. At present, production and harvesting processes are not streamlined due to diverging retailer requirements. An example of this is retailers requiring leek crowns to have different lengths or having no crown at all. This approach demands manual labour as machines are not able to meet these diverging requirements in a cost effective way. Simply chopping the whole leek up and then bagging it may be a way forward, but consumer habits and attitudes towards the appearance of vegetables and related quality assumptions would also have to be changed.

6.2 Future job roles

In response to a text-response question on future job roles the respondents were split between the large number who foresee the creation of new roles centred primarily on technology, and the smaller number who do not believe that there will be much change in job roles due to the nature of their businesses. In the latter cases their main concerns are with recruiting sufficient numbers of human labour.

Of those who predict that new job roles will be created, the majority believe that these roles will be related to new technologies, in particular automation. By far, the most commonly cited new roles are automation and robotics specialists, notably technicians, operatives and engineers. A handful also mention that data management and general IT roles will be needed.

‘Putting lots of automation in place so there will be a need for engineers to manage this.’

This split between the respondents corresponds to the broader division within the edible horticulture sector between growers and packers who are able to exploit automated systems, and those – generally soft fruit growers – who depend on manual picking.

Several respondents also believe that new job roles will result from environmental and climate change. While some predict that climate change will impose a need for more protected cropping (such as use of greenhouses and indoor farming), others see a pressing need in the future for new roles based on environmental management, controlling carbon emissions and in reducing the overall environmental impact of horticulture. A smaller number of respondents also see biodiversity as a notable driver of change, predicting that new job roles will be created around activities such as soil management and the need to protect biosecurity.

‘The changing environment and advances in Biosecurity science will create new technologies and training needs for the future.’

‘More Protected Cropping due to Climate Change.’

A handful also believe that new roles will be based around more scientific knowledge of soil and crop management, and there will also be need for more innovative techniques, such as vertical farming.

It is also worth pointing out that a noticeable number of respondents also predict that need for labour will ultimately decline with increased automation. These employers see automation as replacing human labour.

6.3 Job roles that will radically change in the future

The survey responses to the question about which job roles will radically change broadly echo those given to the question about new job roles and general trends related to automation.

The largest number of respondents see new technologies, especially automated systems, as having a major impact on existing job roles within the edible horticulture sector. In particular, respondents tend to believe that those working directly with machinery will have to become more skilled in the use of intelligent and autonomous systems. These include mechanics and technicians but also general machine operatives, such as tractor and forklift drivers, who will need to become more knowledgeable in advanced computerised and GPS-based processes. Several respondents also point out that the role of agricultural engineer will become more important with advancing automation.

'Forklift drivers will have to become more specialised because forklifts will become automated.'

As well as technician and operative roles, numerous respondents also believe that the roles of manager and supervisor will need to adapt to new technology. Managers will need to become more technically competent and adept at managing intelligent automated processes rather than human labour. Similarly there will be a need for upskilling in the use of chemicals and biological interventions.

'Chemicals used for pesticides are changing and more training will be required to use these new pesticides.'

Many respondents also predict that the number of jobs in the sector will decline as a result of automation. Respondents say that unskilled manual roles and seasonal labour will see the most noticeable declines in numbers, as these roles are most susceptible to replacement by intelligent machines.

Related to this point is the belief that the number of seasonal workers will decline if travel between the UK and Europe is disrupted post-Brexit.

Several respondents also believe that many existing roles in edible horticulture will need to change in light of growing environmental concerns. Employers who mentioned the environment say that there will need to be a higher level of general environmental awareness among current workforces, and that growers will need to make their practices more environmentally friendly, through the use of organic and biological methods rather than using chemicals. Similar numbers of respondents also believe that the role of skilled agronomists and pesticide sprayers will change in response to environmental concerns and subsequent changes in chemical usage. These kinds of skilled workers will need to become trained in new agrochemicals and techniques in soil management, as older chemicals are outlawed.

7. Covid-19

Arguably the most important global event since 1939, the Covid-19 epidemic will have profound impacts on the economic and social fabric of the UK. This will certainly be true in the short to medium term but there may also be significant long-term changes to social life, to the way businesses operate, to consumer behaviours and preferences, and to government policies. Very few of these can be reliably predicted at this point in time.

The epidemic hit the UK in late February 2020 – in the middle of the fieldwork for this study – and at the time of writing the lockdown of almost all economic and social activity is still in place. Nevertheless, the study was completed and – in addition – the interviews were amended to invite respondents to discuss the impact of the Covid-19 pandemic on their business, the sector, and access to labour.

Based on the feedback of interviewed businesses, it is very likely that the results of this survey and related comments are valid and representative. It may be too early to tell what kind of lasting impact the Covid 19 pandemic may have on the sector, but, as the following section outlines, businesses at present cannot discern significant effects which would substantively affect the general patterns of labour needs, skills, business conditions, change drivers, and consumer preferences presented in this report.

7.1 Impact on availability of labour

Production businesses contacted for in-depth interviews also commented on how their business and, to an extent, the sector has been affected by the Covid 19 pandemic. While it is too early to discern any long-term trends, the comments suggest that businesses anticipate a return to business as usual over time.

For instance, regarding the availability of labour several businesses confirmed that there have already been more applications from UK nationals. For instance, one Protected Edibles business said that there has been a spike in applications for jobs from UK nationals since the outbreak of the epidemic. During the lockdown period the government appealed for people who had been furloughed to apply for seasonal jobs in the agricultural and horticultural sectors and this may have had an effect on the numbers of UK nationals applying for work.

It is not clear if this trend will continue once the lockdown is lifted and economic recovery begins but preferences for office/shop versus outdoor work may well shift slightly in the immediate period afterwards.

When probed if this may lead to a potential decrease of foreign labour in the Edible Horticulture sector, businesses expressed doubts as to whether this is a trend that may continue or is just a temporary phenomenon during the Covid-19 crisis, while expressing hope that some of the workers may wish to stay and pursue a career in the sector. All businesses agreed, however, that it was still too early to make any serious predictions.

In terms of seasonal labour, businesses largely confirmed that at present they are not facing any shortages. For instance, a soft fruit business confirmed already having hired the seasonal labour it needs prior to the pandemic. Impact on seasonal labour may therefore be felt at a later stage, but businesses interviewed were in general more concerned about the impact of pending UK immigration legislation on access to seasonal labour. Furthermore, one grower observed that companies providing accommodation to seasonal workers in dorms on site may face challenges due to social distancing rules.

7.2 Social Distancing

Assuming that the current lockdown is relaxed in various ways, the one major element of the fight against Covid-19 which will remain until a successful vaccine is fully deployed will be social distancing (this may or may not include hygiene measures such as masks, gloves, and hand-washing).

Certain sub-sectors of the edible horticulture sector will have greater problems meeting the social distancing requirements than others. Employers in soft fruit, tree fruit, and some vegetable production were fairly confident that these regulations would not be a massive barrier to business. Most of their work is outdoors and separation of workers is less difficult there than in sub-sectors like protected produce and packhouse activities.

One employer on the latter activity said that they were trying to learn from the way that the automobile industry is planning to separate workers (by the use of screens on production lines) and with carefully scheduled work rotas which require only one member of staff to be in certain areas at certain times or for prescribed activities.

7.3 Impact on margins and demand

There were mixed responses when businesses were asked if they were experiencing a growing demand for UK produce or any loosening in the tight margins expected from them.

Several had observed demand spikes immediately following the outbreak of the pandemic due to the thankfully short-lived “panic buying” period. For instance, there was a surge in demand for cucumbers. Yet following this, a large quantity of produce had to be destroyed due to lack of demand.

Others, however, emphasised that demand from the bulk of the retail and hospitality industries has almost completely disappeared.

The UK is self-sufficient for 30% of cucumber consumption, meaning that retailers have access to a global supply chain, which has not been significantly affected by the pandemic due to the efficiency of air freight which is used for high value to weight produce.

A tomato grower confirmed a similar pattern for tomatoes. They were anticipating that excess produce would be destroyed. When asked if the excess production could be used to supplement the increased demand for tinned products, the tomato grower pointed out that food processors use relatively cheap global supply and generally tend to not purchase high quality UK produce to manufacture items like tinned tomatoes or tomato-based condiments.

In addition, drops in demand in other markets, for instance for tomatoes in the Netherlands, where leading supermarkets have reduced their demand for fresh tomatoes, may have an adverse effect on the UK market due to a higher volume of imports. Furthermore, as one Protected Edibles business observed, retailers fix their prices in advance for a season, meaning that prices have not significantly changed thus far.

Commercially therefore there are conflicting trends: an apparent excess of UK production in key edible horticulture products which could in theory be used to replace imports, but a manufacturing and production sector which – for cost reasons – is tending to stick to traditional overseas supplies of lower quality produce.

7.4 Consumer Behaviour

The long period of lockdown has had a number of impacts on consumer behaviour but it is impossible to be clear as to which of these changes will be short-lived and which might lead to longer-term shifts.

Usually demand for salads would go up in Spring with consumers spontaneously buying lettuces and tomatoes, etc. This does not seem to have been the case during the lockdown and it is not clear why demand has fallen.

The lockdown has had a number of short-term impacts on consumer habits. It will be important for the edibles sector to try to understand to what extent these changes are very temporary or perhaps permanent. The closure of restaurants, pubs, bars, and cafes has meant that food supply and public calorific intake has been shifted entirely onto supermarkets. Consumers have also responded to lockdown by choosing foods which are perceived to be long-life, less perishable and therefore less vulnerable to shortages. This may explain the decline in demand for salad products and the increase in demand for pre-packed frozen vegetables (and a consequent increase in packhouse activities).

It cannot be predicted what impact this may have in the medium term. One grower expressed hope that the pandemic will increase understanding of the importance of food security and the UK Edible Horticulture sector. Similarly, another grower expressed hope that the crisis may change attitudes towards food grown in the UK and that an overreliance on global supply chains may not be as secure as we could wish. This grower also said that the government post-Brexit plans for food production are too focused on imports.

One supermarket who we contacted said that they felt people were drawing away from unpacked fresh produce in the mistaken belief that it would be more prone to carrying the Covid-19 virus.

A similar set of consumer beliefs could also be behind the growing demand for packhouse activities. This sector seems to be benefitting at present from whatever changes in consumer attitudes are driving the preference for packed foodstuffs. A tree fruit grower that also operates as a packhouse confirmed that demand for packing had increased in the past month (to the end of April 2020) to higher levels than during the very busy Christmas season. Other growers in the area are also commissioning more work from this packhouse facility. It is impossible to predict how long this may last, though.

7.5 Summary

Conversations on the potential impact of the Covid 19 pandemic suggest that businesses:

1. do not expect large-scale disruptive effects due to the Covid-19 virus itself - either in positive ways, for instance through more interest of working in the sector or growing demand by retailers, or negative effects in terms of such things as access to seasonal labour, etc.;
2. believe that the survey results presented in this report will retain their validity, beyond the present crisis;
3. are aware of the need for continuing change to the way they operate their businesses and particularly in terms of social distancing and hygiene requirements;
4. are fairly confident that once a successful vaccine is developed the sector will return to “normal” – that is to its existing concerns and issues;
5. do not seem to be in any doubt that a successful vaccine will be developed and launched;
6. are not optimistic about the possibility but would certainly wish the UK government to use the lessons of the epidemic to underpin a drive for national food security and locally-produced produce.

8. Conclusions

The conclusions have been set out according to these 4 headings: people, training and qualifications, skills and drivers of change.

8.1 People

1. The edible horticulture sector in the UK consists of approximately 6,200 businesses, employing an estimated 100,000 to 120,000 workers.
2. Even before the Covid-19 epidemic the edible horticulture sector was facing skills shortages in key occupations – especially those of high skill levels.
3. The situation may be exacerbated by any immigration regulations introduced following the UK's official exit from the EU, in view of the fact that around 60% of the workforce consists of seasonal labour drawn mainly from EU nationals.
4. Of particular concern is the potential loss of significant numbers of “returners” – experienced seasonal workers who come back year on year.
5. The appetite among employers for a significant increase in the skills of the seasonal and agency workforce may constitute a vital element for future policy. There are significant advantages in being able to demonstrate the highly skilled jobs available in the sector and an opportunity to provide the necessary training and upskilling for this.
6. Many in the sector believe that it is struggling to attract younger recruits due to a poor industry image (especially a wide and erroneous external view that it is entirely unskilled), and a general lack of knowledge in schools and young people about what the sector does and what careers are available. This maybe one potential reason behind the sector employing a relatively low number of apprentices (247 employed by 178 surveyed companies). It is important to note that there was an implication these companies would take on more if they could find the quality they sought.
7. Most hard to fill vacancies are in the managerial and supervisory grades but specifically in technical and scientific roles.
8. Micro and smaller companies have relatively older age profiles. The industry's concerns about an “ageing” workforce are of high importance but an equal concern is the need to fill the skills shortages.
9. Employers are generally optimistic about the future (pre-Covid-19) and a number of interviews towards the end of the study, which focused particularly on the experience of the epidemic, showed that employers generally do not expect the crisis to have changed the overall condition or outlook of the sector in the long term.

8.2 Training & Qualifications

10. As in most other UK sectors, on-the-job training is the most prevalent form of training for both salaried/permanent and seasonal workers. External training is mainly used for mandated and regulated training most of which is either a legislative requirement (e.g. health and safety) or requires a licence (mainly equipment handling).
11. Most training described as in short supply requires a licence - spraying and forklift driving, although there is an undercurrent of need in smaller quantities for specialised and technical training (e.g. process management, plant genetics, general agronomy, digital skills, etc..)
12. English language training for seasonal workers is also not cost-effectively available.
13. The reported top barriers to firms using external training include relevance, local availability and cost.
14. Online and video training are seen – mainly by larger companies – as effective for basic concepts (health and safety, food hygiene). AHDB video training is welcomed and there are calls for more to be made available.
15. The most important reason for not using external training is that internal training is seen as entirely adequate (around one third of employers). This however conflicts with the fact that extensive skills gaps continue to exist.
16. Skills gaps in the sector's existing workforce are perceived by employers to be mainly due to a lack of relevant training (although most training is conducted in-house), and the loss of experienced and skilled people to retirement.
17. A relatively small proportion of the overall salaried/permanent workforce are certified as trainers, verifiers and assessors, and these are almost entirely located in the medium and larger companies.
18. The majority of employers (71%) do not access funding to upskill their workforce and this proportion does not differ much across the various size bands of businesses.
19. There is low awareness that the Apprenticeship Levy may be used for re-skilling and up-skilling. There is some anecdotal reason to believe that small and medium-sized businesses in the sector may be unaware that they can get 95% of the cost of an apprentices paid for by the government whether they pay the levy or not.
20. There is very low awareness of T-levels and their need for work-placements as a potential source of recruitment (90% of businesses of all sizes are relatively unaware of the new qualifications).

8.3 Skills

21. As a sector the edible horticulture industry is highly skilled. The demands of plant propagation, plant health, food assurance, spraying, environmental management, irrigation, plant nutrition and much more – not to mention the sophisticated skills of management - require high levels of knowledge and competence.
22. Most of these skills are required in both salaried and seasonal workers. The industry is not importing unskilled labour for the most part but takes advantage of high levels of experience and skill in its returning seasonal workforce.
23. Skill levels related to more specialist technical skills like propagation, spraying, plant health etc., are higher among salaried and permanent staff, potentially due to regulated and licensed training requirements to carry out these tasks or requiring specialist technical qualifications. At the same time, employers expect a significant increase of demand for these skills in the seasonal workforce. For instance, the demand for skills in propagation is anticipated to increase by 46.3%, while the increases for spraying and plant health are expected to be 32.7% and 27.5% respectively.
24. Employers predict that most technical and biological skills will increase in importance. Frequent comments that training in these areas may not be readily accessible at present, suggest that skills shortages and gaps, which may ultimately undermine food safety and security and the production capacity of the sector, will persist.
25. In addition, the sector has high levels of need for crucial technical skills like forklift driving, digital management (e.g. control systems, and monitoring of crop condition and treatment), and the operation of increasingly complex machinery and equipment.
26. Should immigration be restricted in broad-brush terms, survey responses and interviews indicated concerns, as mentioned in sections 3.5, 4 and 6, that limited access to experienced and skilled seasonal workers (including returners) may lead to severe skills shortages in the sector and will likely exacerbate skills gaps.
27. Skills related to technology are set to increase in importance in the future. Employers are only too aware of the need for their staff to acquire skills in automation, robotics, and relevant AR/VR technologies.

8.4 Drivers of change

28. The sector is most immediately concerned with drivers of change related to labour, skills and commercial factors like margins and consumer demand. More long-term oriented issues such as legislation and environmental issues are also seen as important.

29. Clearly a proportion of companies are struggling with margins and are feeling the pinch created by high competition and increasing cost of production. There is evidence from the responses to the survey and in-depth questions that price factors are driving most of the business models for the sector.
30. Growers interviewed confirmed that there appears to be an increasing awareness of drivers of change such as the importance of food safety and quality and the importance of food security to the UK by the general public. They say retailers and supermarkets are the driving factors behind this. Environmental factors may work in favour of the UK industry by encouraging a focus on high quality home produced, low carbon-footprint produce.
31. Surveyed businesses see significant potential for automation in the sector, while interviewed business on sharing these views also highlighted barriers to automation: such as costs of the technological requirements or retailer specifications for produce.
32. The sector has suggested (as of March 2020) the Covid-19 epidemic is not anticipated to have a long-term impact on the key challenges highlighted (for example, labour, skills, business conditions, etc). However, there may be a need for considerable assistance from stakeholders during the next few years as companies struggle to adapt to whatever changes the epidemic prompts.