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Key staff:	Camilla Strawbridge, University of Reading (UoR) Penny Evans, Horticultural Trades Association (HTA) Martin Emmett, University of Reading (UoR) Professor Paul Hadley, University of Reading (UoR)
Location of project:	Horticultural Trades Association, West Berkshire.
Industry Representative:	Ian Ashton, Lowaters Nursery
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AUTHENTICATION

We declare that this work was done under our supervision according to the procedures described herein and that the report represents a true and accurate record of the results obtained.

[Name] Tim Briercliffe
[Position] Director Business Development
[Organisation] Horticultural Trades Association

Signature  Date 17.09.12

[Name]
[Position]
[Organisation]

Signature Date

Report authorised by:

[Name]
[Position]
[Organisation]

Signature Date

[Name]
[Position]
[Organisation]

Signature Date

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This Grower Summary constitutes the full and complete HDC report. Please refer to supporting document: *“21st Century Training for Commercial Ornamental Production - May 2011”* (appendix 1) for more information.

GROWER SUMMARY

Headline

The project has:

- worked closely with industry to define an outline training and qualification framework to meet industry skill gaps.
- has demonstrated the importance of technical/non-technical skills within Ornamental Production.
- has piloted the use of technology for delivering learning
- has supported the transference of learning materials into e-learning formats.

Background

The project was developed in order to address the lack of accredited vocational training in commercial horticulture skills, available to the UKs ornamental plant industry. Initial research soon validated the original assumption that the limited amount of formal training available in horticultural skills was not integrated and in some parts of the country non-existent, apart from the training provided by employers themselves.

The development of a suite of training recognised formally through a qualification would create a progression pathway supporting the attraction and ability to retain the high quality workforce required to drive the industry forward. Such a structure will also support recruitment and promotion decisions and facilitate a professional approach to managing talent and succession planning.

Delivering training through enhanced methods, will support learners' ability and wish to engage with training, meet accreditation needs and provide a less-bureaucratic way of administering the training/qualification.

The project would also seek to re-engage the industry, through its approach, to identify core future training needs and ascertaining preferred training delivery mechanisms, to provide a practical, sustainable solution. This collaborative style of working would be embedded and encouraged for future training design processes.

Summary

An industry facing ever increasing economic challenges strengthens the need for ornamental producers to have a workforce that are knowledgeable and highly effective. The Knowledge Transfer Partnership (KTP) was set up to bring together industry, academia and the latest research & development to create a new system of effective learning, delivery and assessment that was integrated into the Qualification Credit Framework and utilises HDC research and development outputs to best effect.

The KTP partnership included The Horticultural Trades Association (HTA), Horticultural Development Company (HDC) and the University of Reading, drawing on their expertise to meet the overriding aims.

The KTP project began in June 2010 with the appointment of a KTP Associate (a recent graduate), working full time delivering the project. The project objectives were:

1. To develop an effective qualification structure at Level 2 and Level 3.
2. To create training materials and assessment which support a qualification structure.
3. To pilot, evaluate and implement the new structure at a national level.

The project was planned and implemented over two stages. Stage 1 focused on understanding the current marketplace and working closely with industry to define future requirements. Stage 2 aimed to use that research and analysis to define and develop the learning qualification structure.

Stage 1 – Ornamental Grower Consultation

The consultation consisted of two phases, the initial stage being an online survey and the second phase a number of nursery visits (x17) across England and Wales where grower managers were interviewed and staff guided through a questionnaire. A variety of nurseries of different sizes growing different types of products were visited, to provide a representative sample. The 17 nurseries included growers of hardy nursery stock (HNS), herbaceous perennials, pot liners, ornamental trees, bedding plants, shrubs, ferns, grasses and alpine. The questions aimed to gather more in-depth knowledge of the profile of ornamental producers, identification of skills gaps, barriers to delivering training and to gain details about employees' experiences of working in horticulture and the training and development they have received.

The key findings from Stage 1 included:

- A core staff is maintained throughout the year, providing a more focused use of temporary workforces than previously experienced. Attention should be placed on these staff for training purposes.
- It is not necessary to deliver training products in alternative languages, as core staffs are fluent in English or English is relatively strong as a second language.
- The diversity of the industry, with its unique mix of practical skills and commercial scope, represents the type of training that is required, covering both technical skills and commercial awareness.
- The key priority skills gaps identified for both the horticultural worker and supervisor/team leader were Plant Nutrition, Crop Identification, Crop Irrigation, Pest & Disease and team leader/management skills.
- Accessibility of computers for staff and the use of technology to support learning were discussed with the conclusion that the industry is moving forward in its use of technologies, with caution.
- Whilst the use of technology to deliver training will be considered, more traditional styles of delivery such as practical training on a nursery are still preferred by the industry.
- The training needs to be flexible, affordable and engaging providing training and assessment of a high quality.

The findings from this consultation are detailed within the HTA report, 21st Century Training for Commercial Ornamental Production Report, which can be accessed through the HTA website, or provided upon request.

Stage 2 – Defining and delivering a learning framework

Following the completion of the consultation phase the project turned its attention to turning the findings into reality. The HTA had already taken on-board the need to deliver cost-effective and accessible training to all its members in the future and the KTP was an opportunity to validate this approach with ornamental producers, whilst considering the cautious optimism detailed within the consultation report findings. The benefit of delivering training on-line is a reduction in the cost of training to levy payers/members as opposed to more traditional training courses.

In September 2011 the KTP project faced operational difficulties with the departure of the KTP Associate. A thorough review of the project's status and a planning activity took place

to understand how the project could continue using a different resource model. This review resulted in a trainer/subject matter expert(s) design team being formed, who could begin to design the outline learning framework and start to collate and write learning materials to support the piloting of an on-line delivery approach. This team, while successful in continuing the project, was not able to match the resource levels planned originally, therefore the development activity needed to be refined to reflect this.

The design team developed a small section of e-learning in support of two modules (Plant Growth and Development and Crop Observation and Identification Skills) to be piloted in February 2012. The pilot was conducted with 5 nurseries, engaging 32 staff with the training. The pilot evaluated both content to ascertain if the learning outcomes had been reached (content included, e-learning and practical nursery exercises), but also user experience and accessibility. The result of the pilot from the representative sample was positive across all areas.

Following the pilot it was clear that the use of technology as a way of delivering training, that included both e-learning, assessment and practical nursery exercises was the most beneficial approach for industry.

Following this design process, it was clear that the time required for designing each module and then building each module was going to be extensive and more complex than more traditional design methods, ultimately resulting in a need to re-focus on the outcomes achievable under the KTP Project.

To maximize the remaining time, it was agreed that the design team would focus on clarifying learning outcomes, assessment needs and content for 3 of the 8 modules.

KTP outcomes:

- A clear understanding of the profile of the industry, challenges they face and training delivery preferences.
- An industry list of prioritised skill gaps for both the Horticultural Worker and the Team Leader/Supervisor.
- Overarching outline learning framework for the Horticultural Worker (Level 2, GCSE equivalent, and the Team Leader/Supervisor, Level 3, A-level equivalent)
- Successful pilot engaging with a number of industry partners.
- A full set of learning outcomes have been produced for all Level 2 modules, using national occupational standards. On-line delivery has been tested under pilot conditions for the Crop Observation and Identification Skills and Plant Growth and

Development Modules. Further design work has also been completed for the Crop Irrigation Module, but all these modules will require further design and build work.

- Validation that using technology to access training is feasible and supported.
- Breadth of possible resources available to support the training is good, with the challenge being to draw this together and translating to meet the different audiences.
- Increased understanding and capability within the project team in designing training for on-line delivery.

Following the outcomes attained under the KTP project, it is proposed will be carried forward under a joint partnership between the HTA and HDC, to develop and build the training qualification framework, providing level 2 training modules that reflect the most up to date knowledge and practice for the Horticultural Worker. Level 3 (supervisor/team leader) training would require a further project and investment and will be reviewed whilst the Level 2 training was being developed.

Financial Benefits

The KTP outcomes have not provided current financial benefits. Ornamental Growers will benefit from receiving cost-effective training (compared to more traditional methods) that provide both e-learning and practical training for their staff, should the proposed development go ahead. The industry will benefit from having the infrastructure and processes in place to provide industry relevant, sustainable training.

Action Points

- A proposed collaborative partnership between HDC and HTA is currently being considered.
- Growers' engagement and input for the proposed next stage will be critical to ensure the development and build of the training modules are fit for purpose and up to date.

Knowledge and Technology Transfer

The partnership provided a great opportunity to begin translating raw materials into learning content to support the design of the Level 2 training for the Horticultural Worker.

The next phase of this work, post-KTP will provide the opportunity to take advantage of all raw materials currently available. This knowledge will be reviewed and mapped against the training module learning outcomes to gauge applicability and then either signposted as a resource, or the research will be re-written to support the Horticultural Worker under the training design.

Glossary

KTP – Knowledge Transfer Partnership

HTA – Horticultural Trades Association

UoR – University of Reading

References

Strawbridge, C (2011), 21st Century Training for Commercial Ornamental Production, Horticultural Trades Association website.

Appendices

21st Century Training for Commercial Ornamental Production, May 2011.

For further information please contact, Penny Evans, HTA Training and Careers Manager on 0118 9303132 or email, penny.evans@the-hta.org.uk



21st Century Training for Commercial Ornamental Production

May 2011



**Knowledge
Transfer
Partnerships**

Author:

Camilla Strawbridge

Training & Development Project Manager

0118 930 3132

The Horticultural Trades Association

Horticulture House

19, High Street

Theale

Reading

RG7 5AH

Website: www.the-hta.org.uk

This Partnership received financial support from the Knowledge Transfer Partnerships programme (KTP). KTP aims to help businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK Knowledge Base. KTP is funded by the Technology Strategy Board along with the other government funding organisations.

Knowledge Transfer Partnerships (KTP) is Europe's leading programme helping businesses to improve their competitiveness and productivity through the better use of knowledge, technology and skills that reside within the UK knowledge base. For further details see <http://www.ktponline.org.uk/>

21st Century Training for commercial ornamental production – What the Industry Really Needs.

INTRODUCTION

The aim of this consultation was to get in touch with the industry and find out about their experiences of training, and what training and qualification provision would aid them in developing their staff and reaping business improvements as a result.

The consultation forms part of the development of new training programmes and qualifications for those working as general nursery staff and supervisors in commercial ornamental production. The Knowledge Transfer Project is being led by Camilla Strawbridge and is a collaborative project between the Horticultural Trades Association (HTA), the Horticultural Development Company (HDC), and the University of Reading which aims to engage with industry on the topic of training and development. This joined up approach provides a wealth of knowledge which can be used to create training programmes that really work for growers and their staff.

Currently the design phase of the project is about to proceed hence an online consultation and a number of nursery visits have been completed to ask grower managers and their staff what content and delivery format would aid business improvement and individuals' abilities within their job roles. Over 100 nurseries have been involved in the consultation and our most sincere thanks go out to all those who have been involved and have contributed towards creating quality training programmes and qualifications for the industry.

Additionally the consultation aimed to gain a real insight into the characteristics of the industry and those working within it; this should inform how best to design training for the 21st century. Furthermore, the findings can help uncover how to promote the industry and its varied careers to the public at large; this is particularly important when inspiring young people who will be the horticulturists of the future.

The team hope you enjoy reading the findings of this consultation and welcome your feedback to this report; the industry will be kept informed of how this data is being used and how you can use it to help develop your businesses, your staff and the industry.

METHODOLOGY

>Methods of obtaining data.

The consultation consisted of two phases, the initial stage being an online survey and the second phase a number of nursery visits where grower managers were interviewed and staff guided through a questionnaire.

The survey was administered using Survey Monkey (see appendix 1), an online survey software package and the questions aimed to ascertain:

- Average number of staff employed
- Characteristics and profile of employees
- Operational structure of organisations
- Perceived need for new training solutions
- Training currently being delivered
- Preferred training mechanisms
- The awareness of industry to training groups
- Use of training evaluation mechanisms
- Use of mentoring
- Desired provision of learning support
- Funding available for training
- Skill levels and skills gaps
- Preferred training period
- Existing and desired organisational and industry progression routes
- Perceived ability of staff to apply what they learn in training.

The second phase of the consultation consisted of visits to 17 nurseries spread throughout England and Wales, including a variety of nurseries of different sizes growing different types of products. Interviews were conducted with grower managers and a number of employees were guided through a questionnaire. The 17 nurseries included growers of hardy nursery stock (HNS), herbaceous perennials, pot liners, ornamental trees, bedding plants, shrubs, ferns, grasses and alpine. The questions aimed to gather more in-depth knowledge of the issues surrounding the delivery of training to meet industry needs and to gain details about employees' experiences of working in horticulture and the training and development they have received (see appendix 2).

Overall the methodology aimed to engage with a representative range of organisations and individuals and high response rates make this more likely to have occurred. Despite this, it is the case that both samples were self-selected and this may have caused some bias by accessing those with an interest in training or those who have strong opinions on the topic.

>Methods of analysing the data obtained.

The data obtained was evaluated using three main methods to accommodate the mix of qualitative and quantitative data obtained.

For quantitative data the spreadsheet application Excel was used to analyse the material in order to identify trends and to score and weight some of the data sets. The scoring involved using a Likert Scale whereby responses were coded and assigned a numerical value; by summing the total of the scores assigned for each category or response visual illustrations was produced to represent attitudes and preferences.

For quantitative data the information provided was scan read to ensure the use of consistent terminology within the hand-recorded accounts to ensure accuracy and identify key themes. This information was then input into an online application called Wordle (Feinberg, 2009) which was used to visually represent the most commonly received phrases to individual questions by displaying them in larger, more prominent, text and less commonly used phrases in smaller text.

These methods of evaluating the data were used as they were sufficient to provide an accurate and accessible picture of the findings of the consultation for numerous and diverse audiences.

CONCLUSIONS

Importantly, all stages of the consultation identified that there is a need for new training solutions specifically for ornamental horticultural production and that there is both enthusiasm and the willingness to find funds for training that is both relevant and of a high quality.

The profiles of the horticulturists and organisations that participated describe some key characteristics of the industry; this information is very useful when considering how best to improve training provision, promote careers, improve staff retention rates and maximise opportunities to succession plan.

One of the key characteristics identified was the extent to which a core staff base is maintained throughout the year, and the misconception that the majority of organisations within the industry employ large numbers of temporary labour predominantly consisting of those who speak English as a second language. In relation to training this strengthens the argument to train the majority of core staff, as collectively the team can then work more effectively and efficiently throughout the year, thus, reaping cost benefits and opportunities to allow staff to use their initiative and be innovative.

Furthermore, the low number of those wanting training in an alternative language to English and the reduced temporary workforce who are often those whose second language is English, means that it is not necessary to consider whether to deliver new training products in alternative languages. However, the interviews with grower managers identified that materials need to be simple enough for those with English as a second language to understand using visual information where possible and cater for those with lower levels of numeracy and literacy. The level of IT literacy was also discussed and the opportunities and barriers that could arise by the use of new technologies and computer-based training solutions. The statistics relating to the accessibility of computers on the nursery and some employees' liking of the principle of online distance learning as a training mechanism, suggests that the industry is moving forward in its use of technologies and mechanisation, and that this change could be utilised to engage with the new generation of horticulturists who communicate and engage via computer media.

The employee questionnaire responses reaped a very interesting insight into the appeal of a career in horticulture and the challenges the industry faces in promoting its career paths. There is a lot for the industry to shout about and to use as a starting point for equipping, inspiring and motivating staff. Employees enjoyed many lifestyle factors such as being outdoors in the fresh air, and working with nature and plants; this may appear an idealistic 'good life' perspective on horticulture, but is part of the real story of both the people working in the industry and of the supply chain of living plant products. Furthermore, the production process involves working in a team; a setting where many people thrive and cherish the opportunity to work in a friendly environment where it is possible to chat, share a passion for plants and work towards a common goal. The diversity of the industry with its unique mix of practical skills and commercial scope (requiring business acumen), represents the type of training that is required in relation to both technical skills and commercial awareness.

This also conjures up new ideas for the face of horticulture which the industry may want to promote to the public at large and those seeking careers; it provides opportunities to tell the story of 'plug-to-park', the people and processes involved, and the benefits given to the public in providing supplies for all varieties of green spaces.

In contrast, the guided questionnaire also identified very real barriers to the promotion of a new image for the industry and the development of training products which really work. The most mentioned reasons for disliking working in the industry were the weather, the low salaries compared with other industries, the long variable hours and the working conditions. In relation to both the improvement of working conditions and to professionalising the industry image portrayed to new entrants, it would be beneficial for industry to show how they value their staff by investing in training and providing a mentor that nurtures staff. Lastly, it cannot be overstated enough that the industry is competing for high quality labour with other industries which offer higher financial rewards and less antisocial working conditions; the industries can partly promote its careers on the lifestyle, but we are in an era where people want a package and this does include good rates of pay, opportunities to progress, a friendly workplace environment, and some flexibility in terms of work life balance. For organisations this challenge poses real difficulties as limited funds are available, but it is short-sighted to think that things can be done the way they always have been but with different results obtained. High calibre employees will expect higher salaries and to be empowered.

The consultation also raised wider issues relating to the need for continuous professional development of all staff, and how this could be supported by the use of a training needs analysis and a training programme which actively promotes the evaluation of training and the application of knowledge and skills; this was an approach many grower managers seemed to support and were keen to explore different methods of achieving. Ideas included implementing buddy systems within staff structure, using the expertise of consultants and other industry figures, and the reinvigoration of extension services which would aid access and application of research, development and best practice.

More directly relating to the type of training that the industry wants and needs; it is clear that training on the nursery or at nearby locations is both preferable and practical and will need to form part of new training solutions. Additionally, a clearly defined period in which training should occur was identified - this was at the quieter times of the season between October and February. Despite this, both employees and grower managers expressed the value of wider experiences and a desire to undertake these learning experiences; this would support some training delivery beyond an individual's own workplace and could take many formats such as nursery visits or swaps, field trips, and the use of both outside industry experts and new learning environments. A blended training programme which uses a range of different learning mechanisms and materials gives learners some choice to suit their working situation and preferred learning styles; it would also promote independent study and problem solving. Training is about learning something new or developing your current skill level; this will involve challenge and may require individuals and industry to consider the real benefits and costs of varied training mechanisms. This involves evaluating the position of your organisation and the attitudes and behaviours of staff, as well as whether the improved efficiency and motivation obtained would outweigh the loss of work time and money.

The industry is ready for new training solutions but with the economic situation still looking fairly bleak and the market being unpredictable and reactive to changes in climate, the money available for training will be hard to find. It needs to be demonstrated that funding training is an investment not lost, but that reaps real rewards. For the successful development of training and for the promotion of careers in the industry this will require collaboration to occur to drive forward an integrated initiative which benefits from scales of economy and transfers knowledge across the industry. In particular, there was a general view from grower managers that they were keen to access external funding for training but that it had become hard to locate pots of money available. The assistance of extension services, sector skills councils, and trade associations was described by many to be a principle priority they would welcome, along with a source of knowing what training is available, where it is taking place to a quality standard, if there are others with similar training needs in their area with whom they could collaborate, and for a driver to administer and manage services such as this.

To summarise, the consultation has identified that the industry is changing and requires new training solutions; these training solutions need to form a part of the jigsaw in professionalising the image of the horticulture industry, creating progression routes for those wanting careers in horticulture and allied professions, and to fill skills gaps in both technical and business skills. The training needs to be flexible, affordable and engaging; this has to be combined with a choice of delivery mechanisms for organisations and learners which all provide training and assessment of a high quality. For this type of qualification to be feasible it will involve engaging with industry experts and using this network in collaboration with nurseries, private training providers and colleges to produce training programmes and qualifications which include exercises in Lean, mini-nursery trials, structured mentoring sessions, reflective diaries, regional in-house workshops, nursery visits, and online learning environments, materials and forums.

RESULTS

Characteristics of the Industry

Table. 1

Employee-guided questionnaire: Job Profiles

Total	FT	PT
% Agency	1.4%	0.0%
% Seasonal	1.4%	1.4%
% Permanent	87.8%	8.1%

Table one illustrates the low number of part-time and, in particular, agency and seasonal staff recorded in the sample of 74 employees guided through the questionnaire; this finding is also supported by the other parts of the consultation. For example, the grower manager interviews found that the 17 organisations had a difference in the number within the workforce ranging from 1 to 650 staff, with the average percentage of the workforce being 30% temporary (including both agency and seasonal employees). The online survey also gauged the extent to which the temporary workforce is being utilised and found that on average 41% of the workforce amongst the 92 organisations surveyed is temporary. These findings suggest that the extent to which the industry uses the temporary workforce does very much depend on the decisions of individual organisations, their nature and size, and their locality and associated employment opportunities. Despite this, it does show that there are numerous core staff members within the industry who would benefit from training and prove to be an asset to the industry.

It is also interesting to note that the proportion of supervisors within the guided questionnaire sample closely correlates with the employees who have formal qualifications for horticultural roles. The sample of 74 employees consisted of 41% general horticultural staff and 59% supervisors; table two below illustrates that over 40% of those in supervisory roles had completed at least one formal qualification. This strengthens the business case for continuous training and development as staff with formal qualifications may have a higher level of skill and this will allow organisations to plan ahead to ensure future success.

Table 2.

Employee-guided questionnaire: Formal Qualifications & Job Role

Total	Formal Qual	No Formal Qual
Supervisor (L3) %	40.5%	17.6%
Not Supervisor (L2)%	18.9%	23.0%

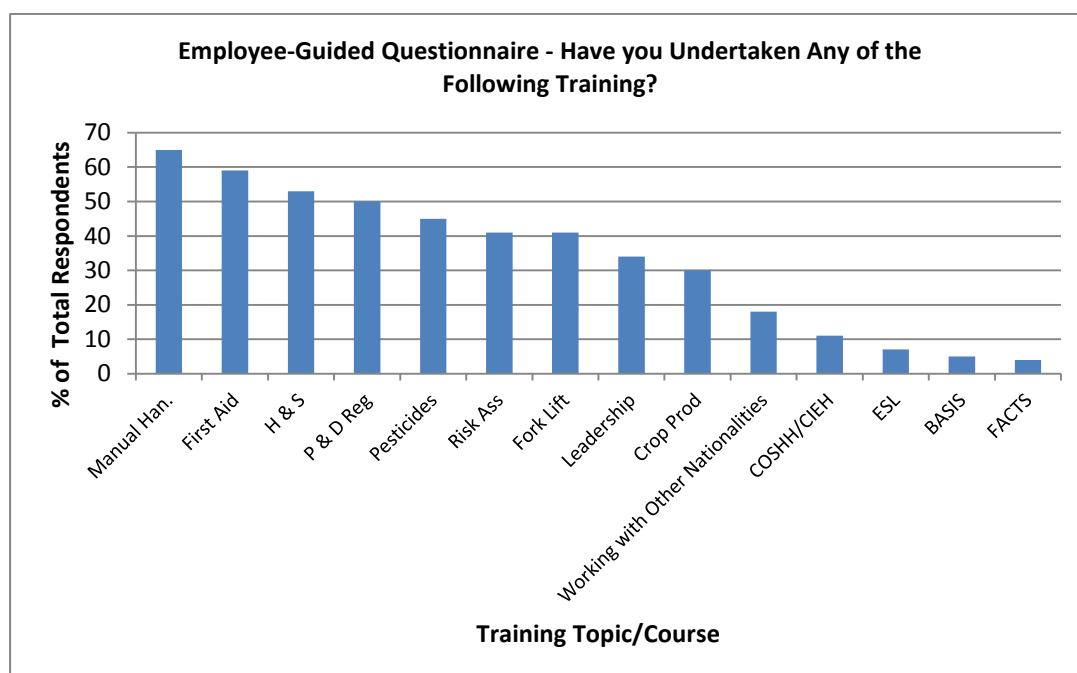
The formal qualifications relevant to horticultural roles, which 60% of respondents had acquired, were attained at various levels and the qualification types both historic and current were numerous; there were over 20 different accreditations which are listed in appendix 3.

The grower managers at participating organisations were also asked what formal qualifications they held and the findings were insightful in uncovering the wide range of backgrounds from which people originate to move into management in the industry. Qualifications listed included a range of vocational and academic qualifications from allied professions, applied sciences, business, and foreign languages; these are listed in appendix 3.

Despite the number of qualifications at level three and above, many of those interviewed stated that it has been their wider experiences, such as travel and work placements, which have impacted most greatly in allowing them to successfully progress in their careers within the industry.

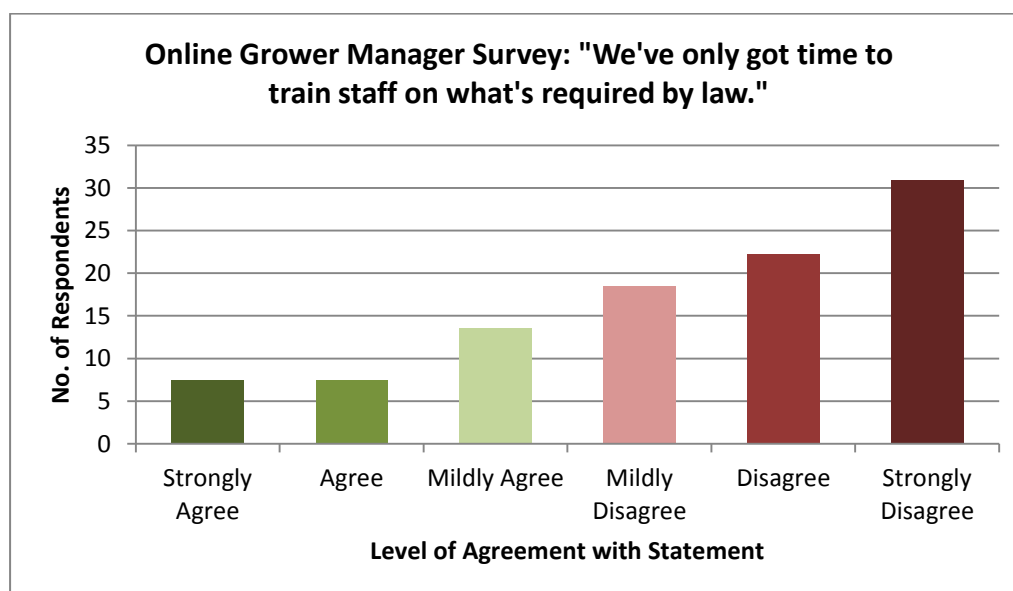
The employee questionnaire also asked respondents to identify whether they had completed a range of common training courses, some of which are mandatory, and it was found that the majority of employees recognised that they had received mandatory training such as manual handling and first aid even if it had been delivered in-house. However, more advanced training that is not required by mandate to be delivered to all staff is rarely provided, or recognised to be so; this is illustrated in figure 1.

Fig. 1



Despite this, the online grower survey identified that time was generally not a barrier to providing training beyond that which is mandatory, with only 28% of respondents agreeing limited time does play a part, as illustrated in figure 2; this suggests that other barriers exist or that training is not deemed to reap the necessary or desired benefits.

Fig. 2

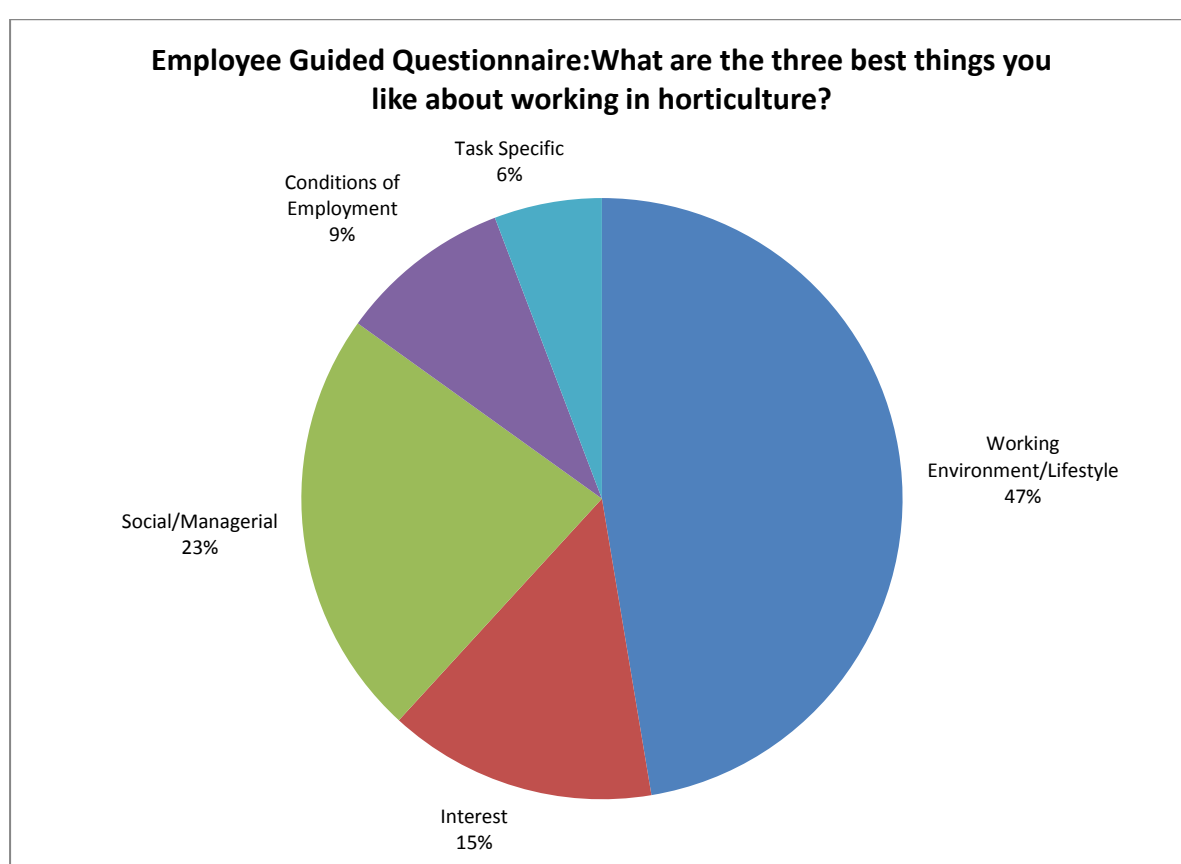


The results of the employee-guided questionnaire also established the age profile of the 74 respondents from the 17 different organisations; the sample consisted of 46% of respondents between the ages of 16 and 36, with the remaining 54% aged between 37 and 66. Furthermore, the average period of time spent working in horticulture for those with supervisory roles was 14 years.

The data also showed that respondents had been in their current role an average of six years which demonstrates that employees will remain within an organisation but are likely to want to change roles; this may involve moving organisations.

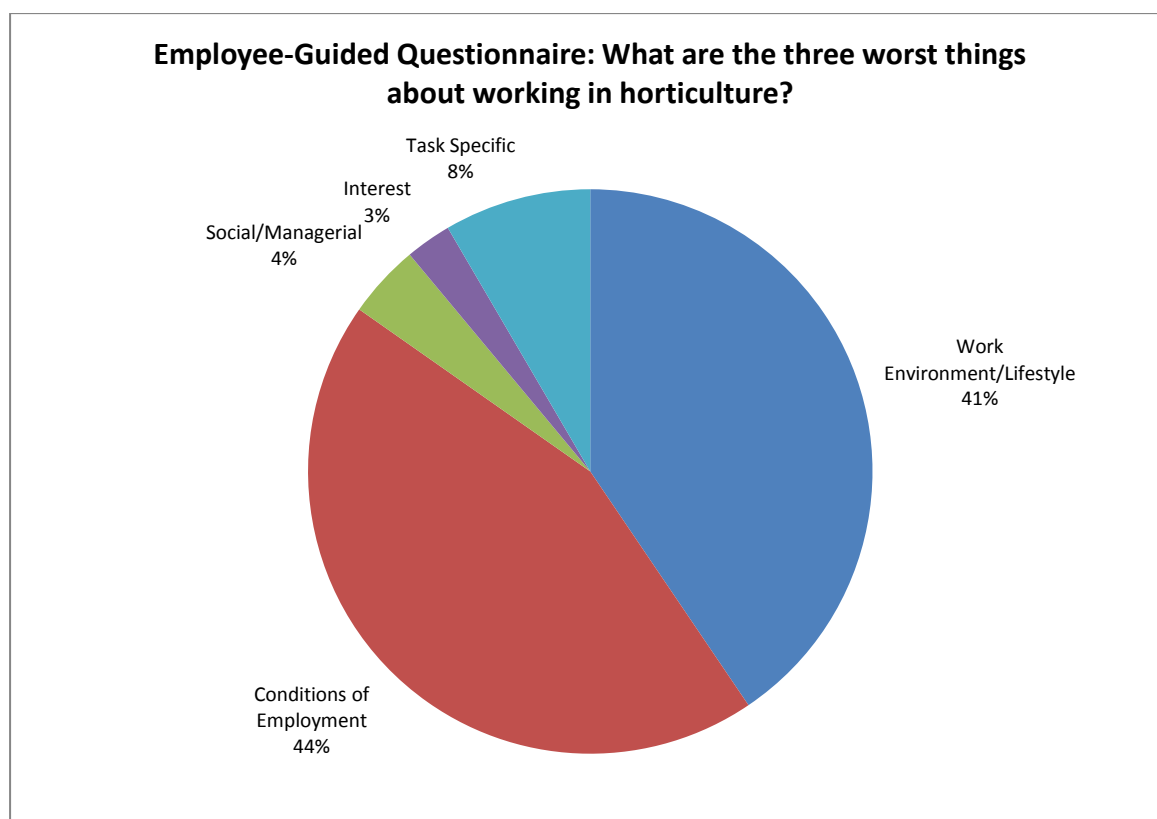
When given the opportunity to list three reasons why employees like working in horticulture respondents listed a vast array of responses; these centred on key themes and as a result responses were defined and assigned a category. 70% of respondents listed the working environment and lifestyle factors, in addition to social and managerial reasons, illustrated in figure 3. The specific reasons centred on working outside, working with plants, and working in teams as part of an organisation; the reasons are listed in appendix 4.

Fig.3



Interestingly, when employees were given the opportunity to list three reasons why they did not like working in horticulture, the work environment and lifestyle factors were again regularly stated with 41% of respondents giving answers within those categories; this is illustrated in figure 4. However, it was conditions of employment which was the most commonly listed reason for disliking working in horticulture, with these factors focusing on the topics of the long hours, the manual nature of roles and the level of pay; there is a full list in appendix 4

Fig. 4



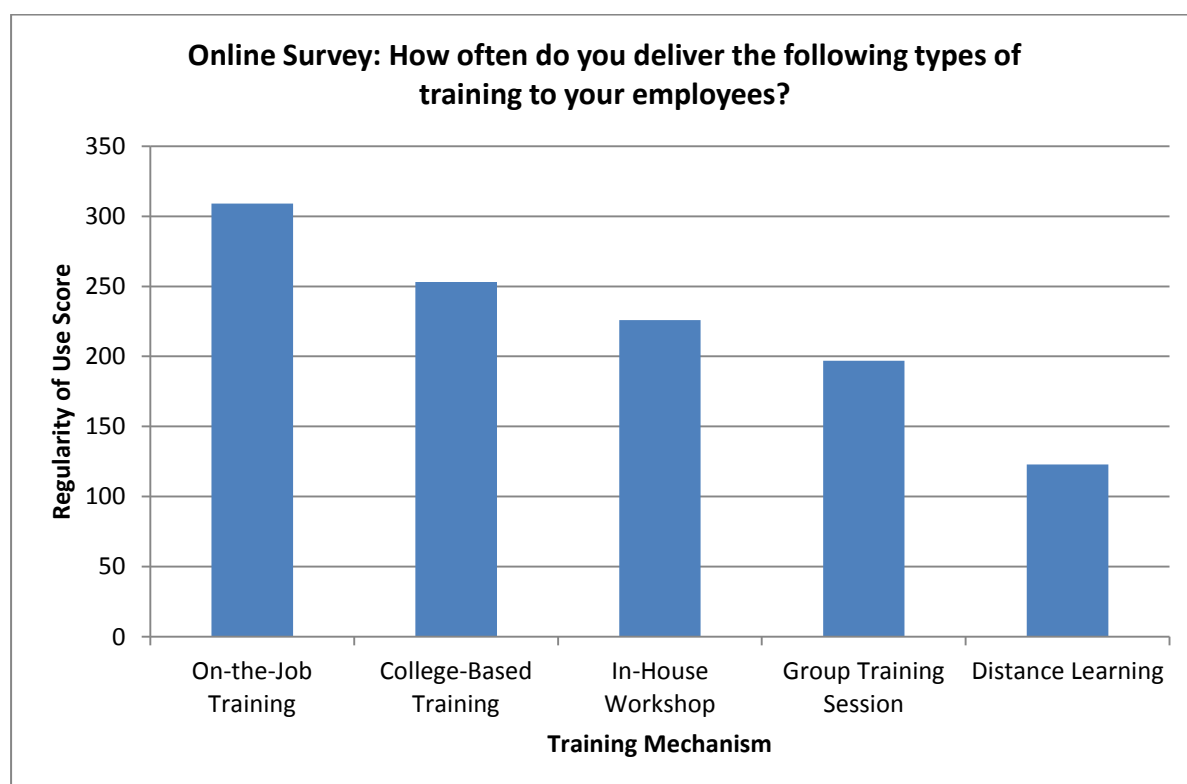
The grower manager interviews and online survey explored what facilities and materials were commonly available within organisations to assist their staff in being effective in their job and for use in training. The findings revealed that 59% of the grower managers interviewed could make it possible for staff to have access to computers, with the average number available being four but this does appear to be very dependent upon the type and size of the organisation. This finding was supported by the employee questionnaire where 59% of staff said that they would be able to access a computer in the workplace. This suggests that some organisations could benefit from the provision of online learning, and later in this report the preference for such delivery mechanisms is explored.

Training Needs within the Industry

>Training Mechanisms

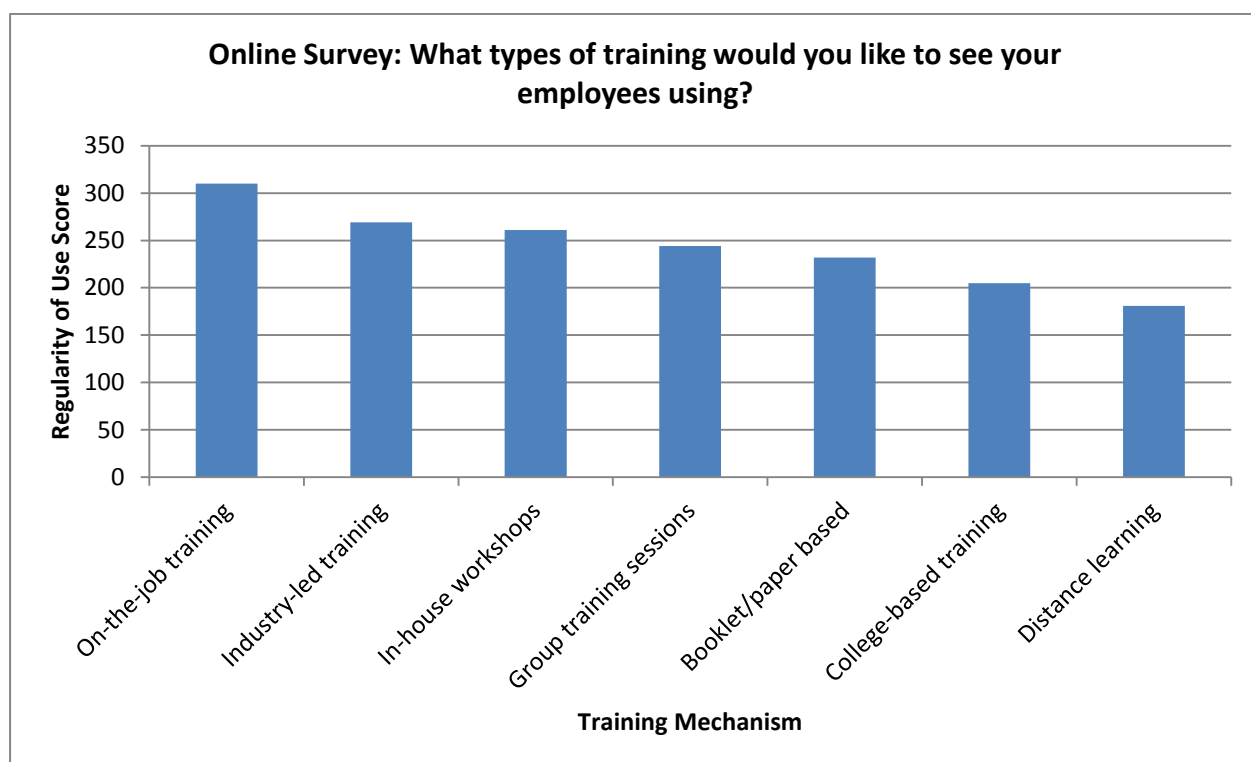
The results of the online survey illustrated in figure 5 show that currently the most widely used training mechanism is on-the-job training; this is likely to be of no surprise to those familiar with the horticultural industry. The popularity of on-the-job training is largely due to its relatively low cost and the minimal amount of work time lost. The graph below shows the high proportion of organisations whose grower managers indicated that on-the-job and in-house workshops were their predominant means by which to deliver training.

Fig. 5



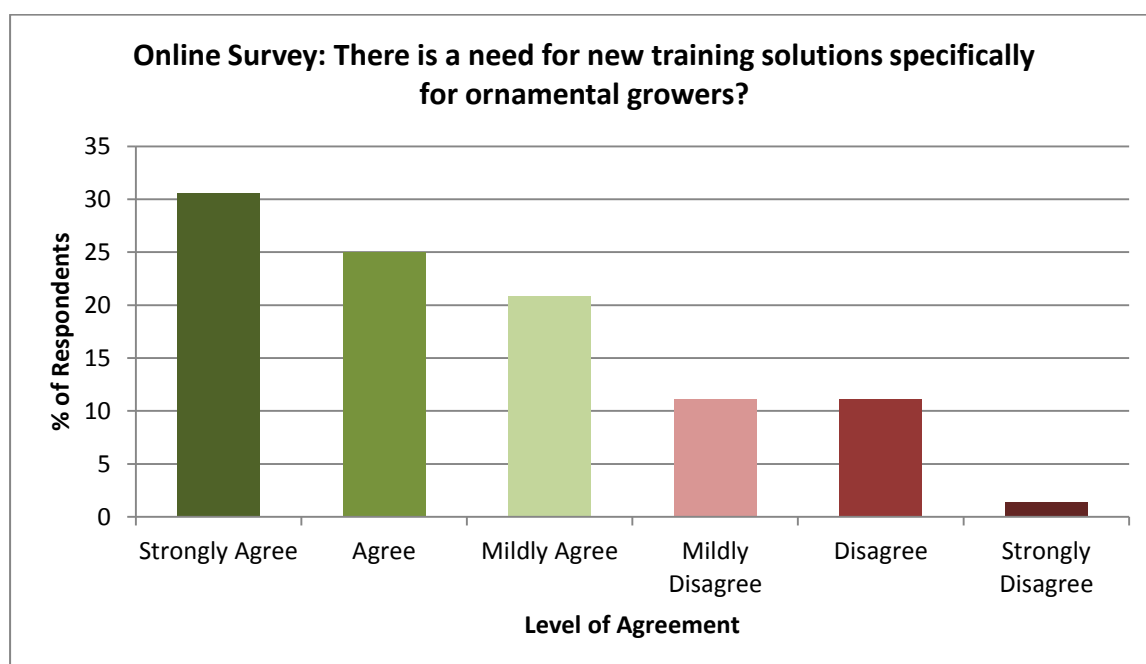
However, when grower managers were asked which training mechanisms they would like to use if existing barriers were removed and new products were developed, it became clear that there is a demand for more extensive use of in-house workshops, industry-led training, group training sessions, and college-based training. These findings suggest that grower managers are keen to try new training solutions which use a variety of learning mechanisms, and would like to formalise the on-the-job training and in-house training they currently deliver.

Fig. 6



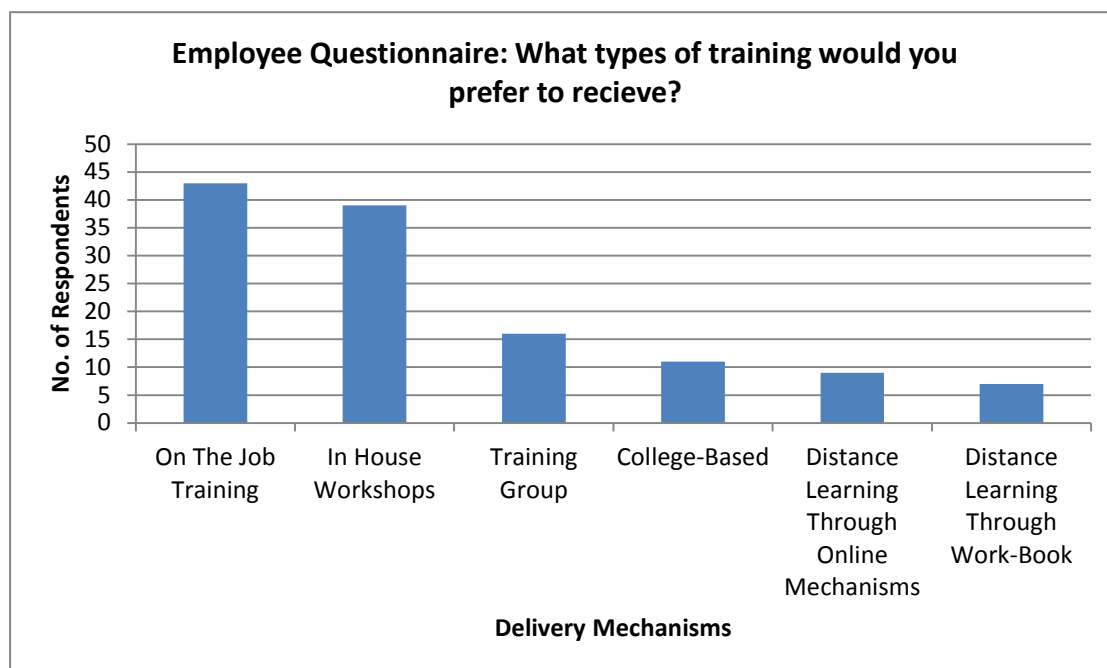
This support for new training solutions was also demonstrated in another set of responses to another question in the online survey asking grower managers if there was a need for new training solutions specifically for ornamental growers. The results demonstrated that ornamental producers felt there was a real need as illustrated in figure 7.

Fig. 7



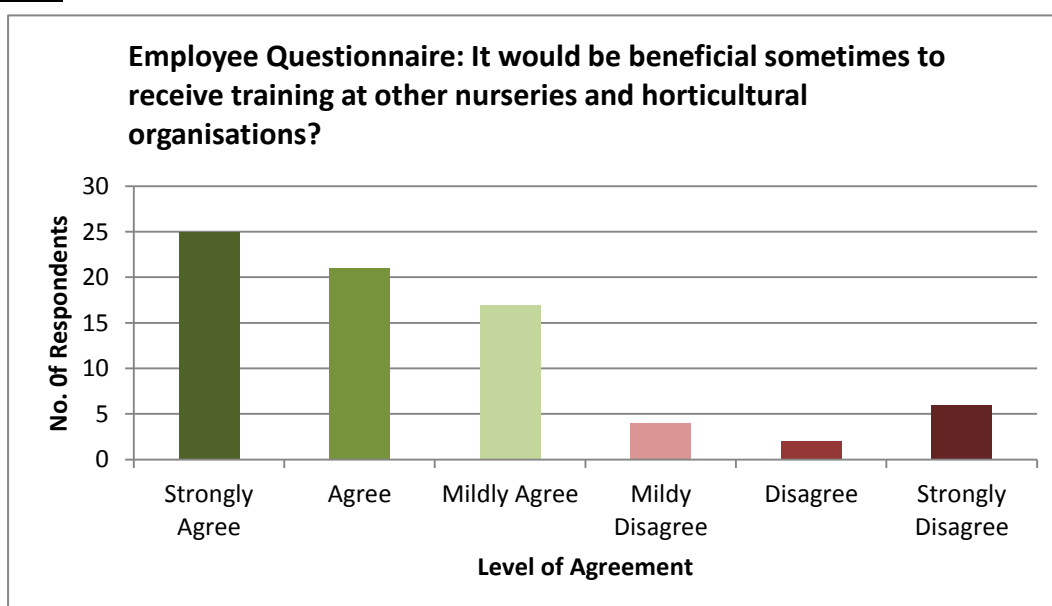
The mechanisms which proved popular with grower managers agreed with the training mechanisms for which employees demonstrated a preference; they were particularly supportive of the principle of using in-house workshops, training groups and college-based provision. Additionally, a small number of employees showed a willingness to undertake distance learning, including that delivered using online media; this is illustrated in figure 8.

Fig. 8



Furthermore, when employees were asked whether they thought it would be beneficial to receive training at other nurseries and horticultural organisations there was a strong agreement that this would be the case; this is illustrated in figure 9.

Fig. 9

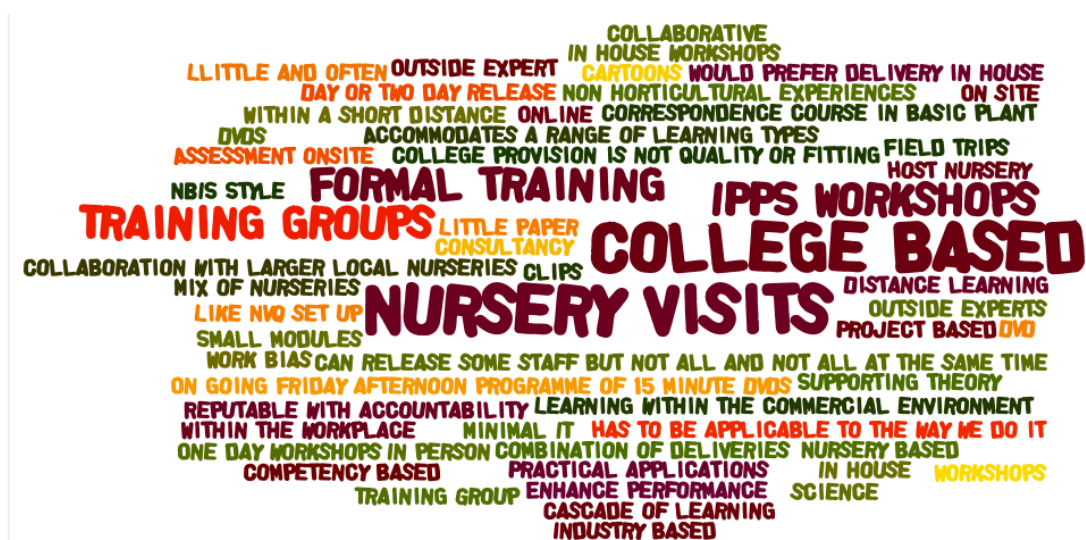


The findings relating to training mechanisms clearly signpost opportunities for new training solutions to be innovative, effective and applied to the needs of the industry; these opportunities include the use of training groups. It appears from the statistics that the use of training groups could be a piece of the jigsaw when designing training programmes and qualifications which really work. However, this depends upon the existence of a network of training groups across the different regions to provide the capacity to facilitate quality training using this mechanism.

The research from the grower managers' online survey suggests that approximately 50% of growers can access a training group - this is a valuable resource on which to draw. Where there was no provision, the online survey suggests that 69% of respondents would welcome the service in their area; this supports a lot of discussion during the interviews relating to the value of historic services offered by the AHDB and ADAS extension services. In order for the rejuvenation of training groups to take place and be a success, the nature and quality of service will need to be built using successful models and be reviewed so as not to allow stagnation and limited levels of engagement, which historically has become a barrier to effectiveness. This is another area for consideration where collaboration is the key to making training groups and extension services functional and affordable.

Further feedback from grower manager interviews confirmed that nursery visits, college-based provision, the use of training groups, and industry-led training are all mechanisms with potential to provide quality training products to meet the needs of growers as illustrated by the responses in figure 10.

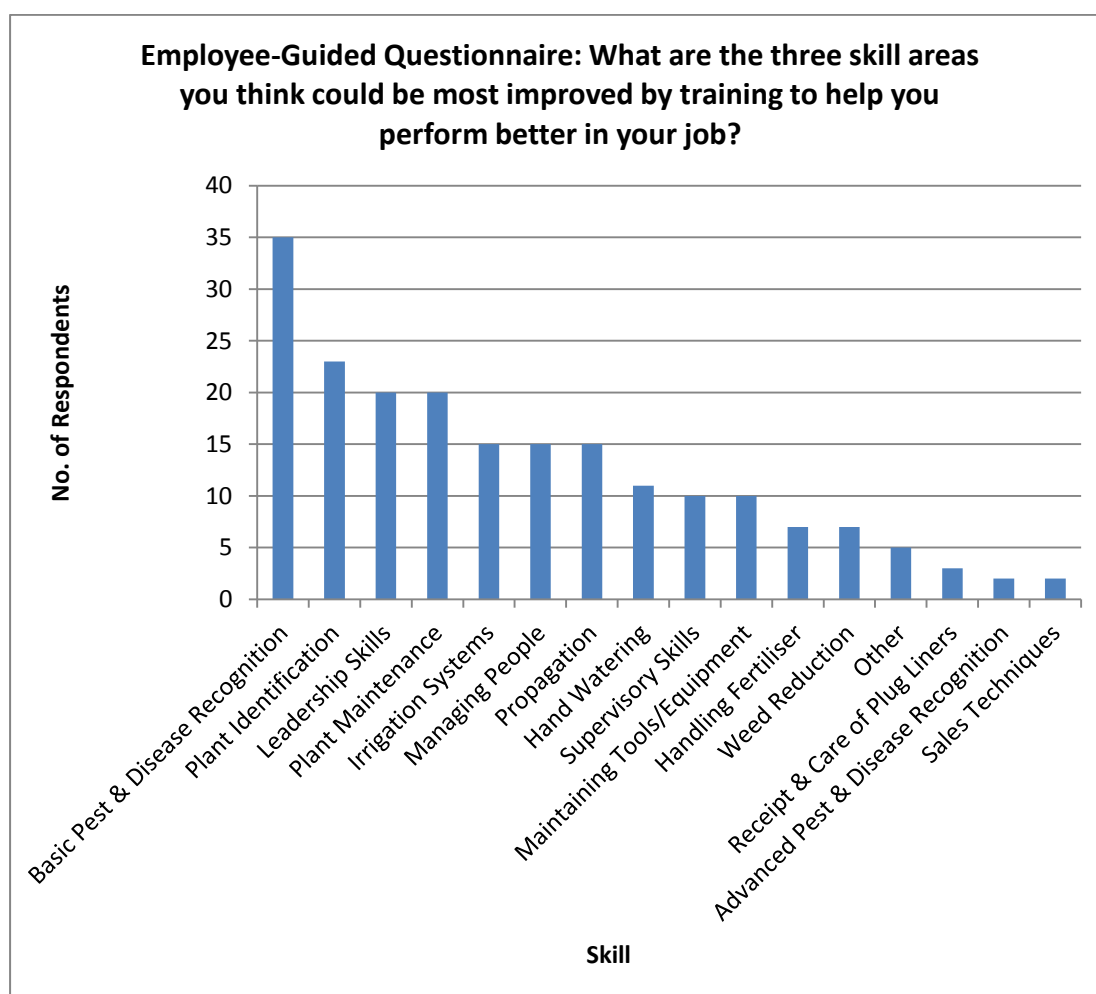
Fig. 10: Grower comments concerning preferred learning mechanisms



>Skills Levels & Skills Gaps

When employees were asked for the top three skills areas that they thought could be most improved by training, the responses were very insightful and interesting; this is illustrated in figure 11. The three skills most frequently listed were a mix of technical and business skills in the shape of pest and disease recognition, plant identification and leadership skills. The demand for fundamental horticultural knowledge such as the identifying and naming of plants demonstrates that basic understanding of the principles of horticulture are important to employees and are valued as skills which will aid them in their job role.

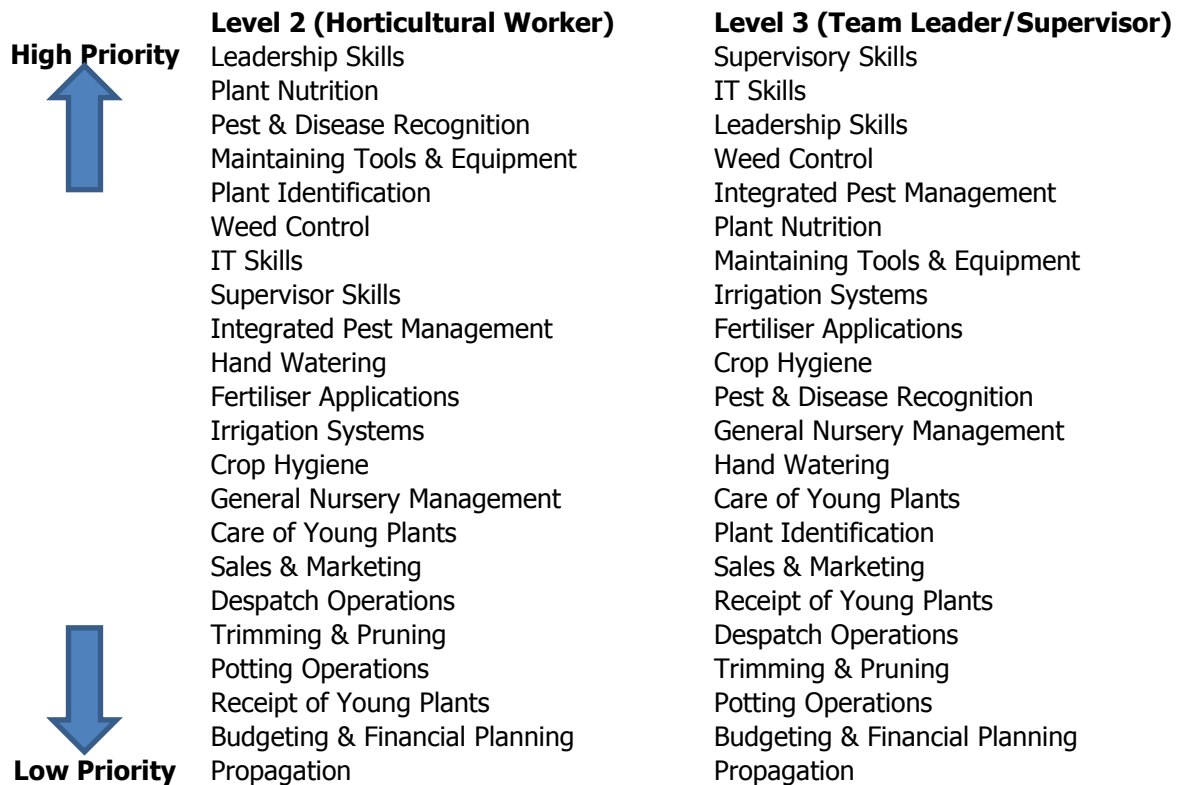
Fig. 11



The preferences of the employees were loosely but not wholly in line with the skills gaps identified by grower managers to describe the skill levels of their staff. In agreement with employees, leadership was identified as an area at both level 2 and level 3 which required training, along with pest and disease recognition and management. Other technical skills came high on the skills agenda including weed control and plant nutrition; this supports the employees' point of view as these technical skills are components of plant maintenance which was an identified development need by employees.

Another insight into the skills areas which grower managers perceived to be high priority included their demand for improved supervisory skills, IT skills, and the maintenance of tools and equipment. This perhaps demonstrates changes within the industry relating to the application of modern research and the increase of mechanisation; the industry and its training must adapt to these changes.

Fig.12: Employer Online Survey



Open-ended questions within the online survey and grower manager interviews illustrated additional skills areas for development relating, in particular, to business acumen; this is illustrated in figure 13. Highlighted areas included commercial awareness, basic plant physiology, lean techniques, and people management skills such as dealing with conflict and motivating team members.

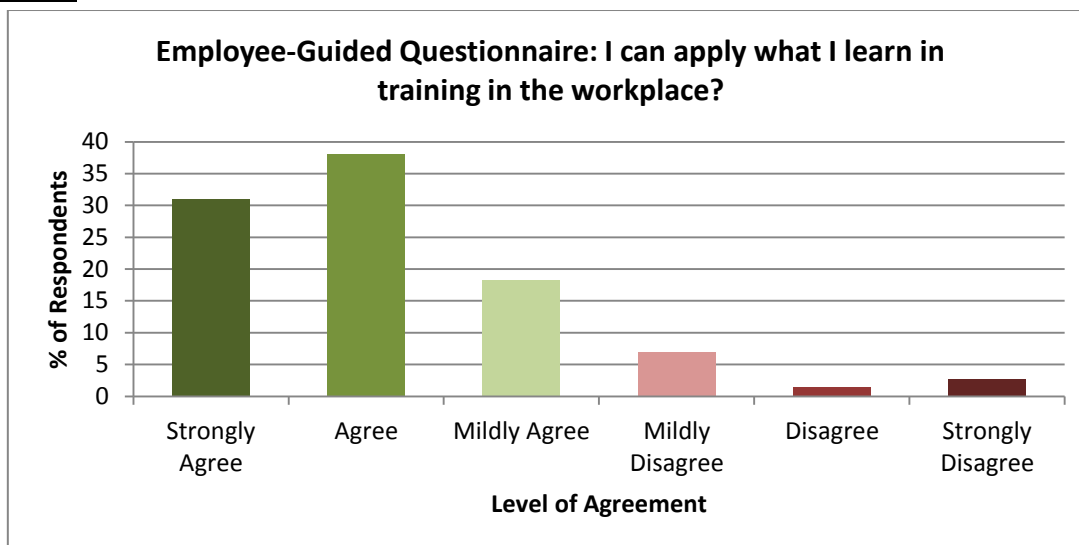
Fig.13: Priority skill areas from grower interviews



>Application of Learning

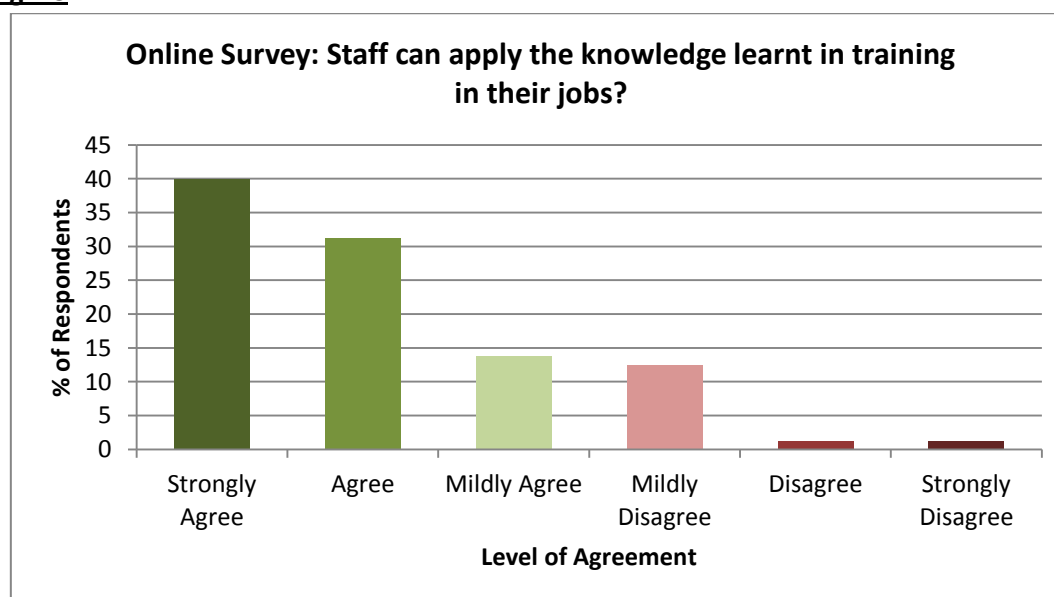
When asked about the application of learning within their job role 89% of employees generally agreed to some extent that they were able to apply what they had learnt in training to increase skill levels within the remit of their job roles; this is illustrated in figure 14. However, 11% disagreed and felt that they were not able to apply learning to change their behaviour in the workplace; this is likely to reduce the perceived benefits of investing in training and will be more likely to occur where evaluation of training does not happen.

Fig. 14



This trend was largely supported by grower managers who indicated that the majority of staff were able to apply what they had learnt; this was in contention with 15% who disagreed and felt staff could not apply what they had learnt, as illustrated in figure 15.

Fig. 15



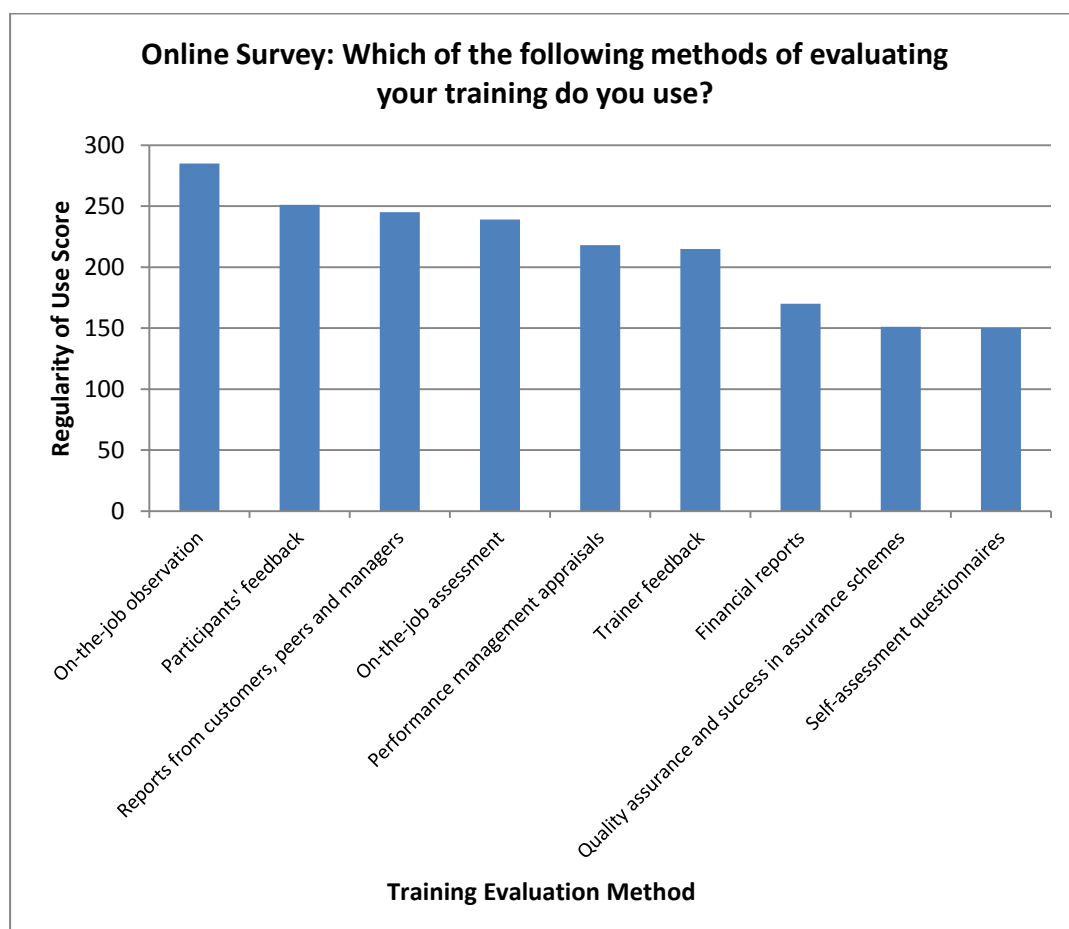
The inability to apply knowledge learnt could be explained by a number of factors including that the training selected is not applicable to the individual or organisation, that the training is not of a high quality and that learning received has not been reflected upon and evaluated. It is questionable how growers and employees know whether they have applied the knowledge learnt when training is not always recorded or formally appraised, meaning that benchmarking behaviours is challenging. It is often the case that further support and empowerment may be required to utilise training to maximum effect; this area will be explored later in this report.

>Training Evaluation and Continued Professional Development

In relation to the recording and evaluation of training, the employee-guided questionnaire indicated that 77% of participants maintained records of the training that they had undertaken; this potentially poses problems for the other 23% when considering training needs, individuals' on-going development, skills gaps within the organisation, changing job roles and remits and when assigning responsibility and making employees accountable for the quality of their work.

This was also combined with a lack of evaluation of the effectiveness of training in which time and money have been invested; it appeared that few organisations had a means of tangibly measuring the real return on investments and cost benefits of training their staff. This perceived lack of benefit may mean that grower managers struggle to justify accessing budgets for training and as a result will fail to engage with training provision stating that it is not fitting to their needs. The graph below reflects that the main method of evaluating training provided to staff within the industry is on-the-job observation; this is likely to be on an informal basis and will not gain a thorough perspective of what has been learnt and how it may be applied within each individual nursery setting. For the individual it further contributes to difficulties in identifying further areas for skills development and justification of future training.

Fig. 16



>Training Support & Mentoring

A possible barrier to the application of skills and knowledge learnt in training could be a lack of encouragement and support, to aid staff in getting the most out of a training programme and using the acquired skills and knowledge to adapt their behaviour in the workplace. The online survey revealed that 56% of employers felt that they had a mentoring system in place within their organisation; this was defined as being when less experienced staff members were given personal support from more experienced staff or external people. This figure was supported by a similar figure of 55% of participants who considered their organisation to have the capacity to provide individual learning support, if a suitable training programme required this provision.

Although only one of the 17 organisations where grower managers were interviewed had a formal mentoring scheme in place, it was encouraging that there were another 10 who had informal mentoring taking place. The informal mentoring described took a number of formats; the quotes below explain a sample of those in use:

- “We mentor informally by using consultants to engage and advise our staff.”
- “We have promoted mentoring in an informal format and have noted real benefits for both mentors and mentees”
- “Informal mentoring takes place whereby controllers and deputy controllers mentor pool staff.”
- “I do mentor my senior staff informally; this involves meeting with them to take a walk around the nursery daily and using this time to plan, assign work, record progress and reflect.”
- “We offer informal mentoring by offering advice and time with our consultants.”

>Training Budgets & Funding for Training

It is commonly accepted that training inevitably involves sacrificing time and money. The cost of training is a very real barrier to the uptake of training provision. Findings from this research suggest that historically it has been rare for a specific measure of an organisations' budget to be allocated as a training budget; this directly relates to the problems associated with conducting an accurate cost benefit analysis of the results of investing in training and of the competition for funds based on importance and urgency.

Despite this, 64% of respondents had accessed external funding to pay for training and had sourced this funding from over 15 different organisations and funding streams; this illustrates a commitment to some types of training when fully funded or subsidised. The organisations and funding streams from which money had been accessed included:

GOVERNMENT

- Business Link
- DEFRA
- European Funding
- Land Skills Grant
- Lantra
- RDPE
- SEEDA
- Train to Gain
- Welsh Development Agency
- Women in Work

OTHER

- Chamber of Commerce
- Grow Train
- Local Enterprise Company
- Midland Regional Growers
- Funding obtained through a training group
- Waverly Training

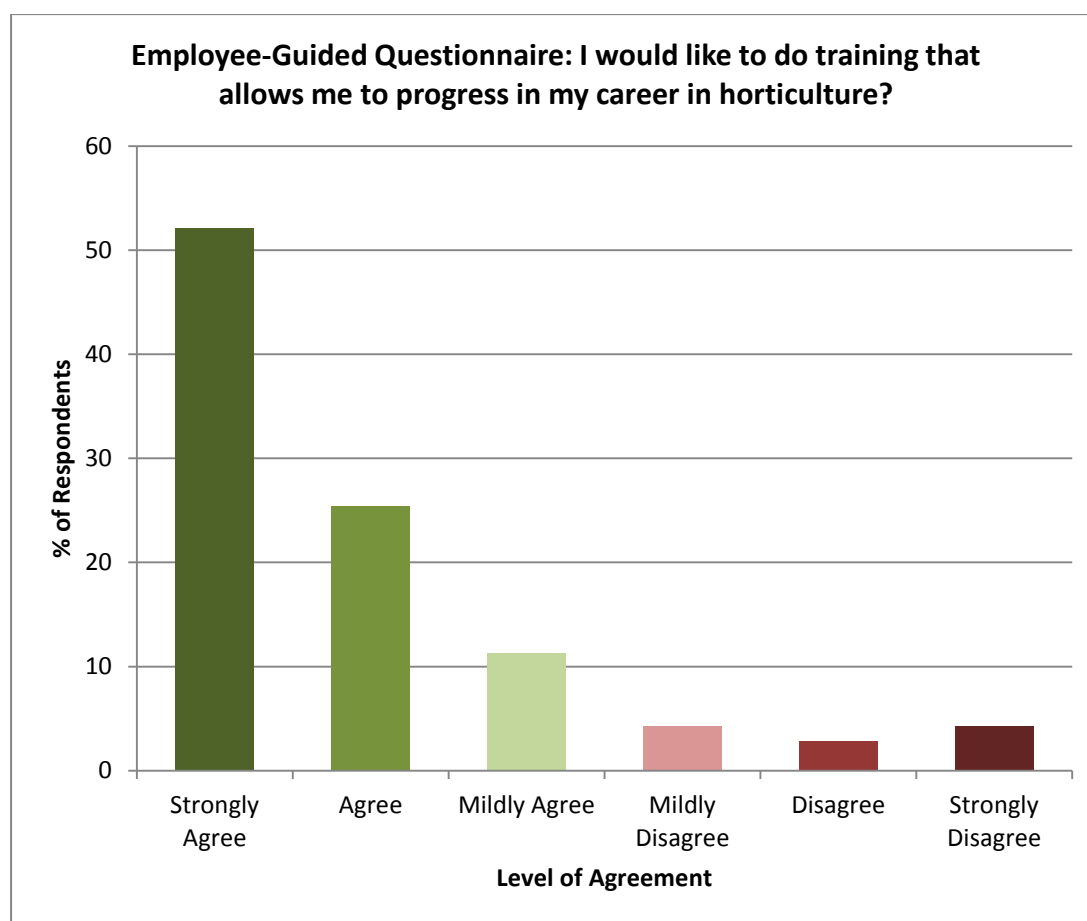
Lastly, all the 17 grower managers thought that their organisations could definitely or may be able to find money to fund training; this opportunity was normally based on the condition that the money would only be accessible when a comprehensive, quality, and value for money training product was on offer in which to invest.

Training and Training Needs within the Industry

>The Existence of Progression Routes & the Impacts on Training

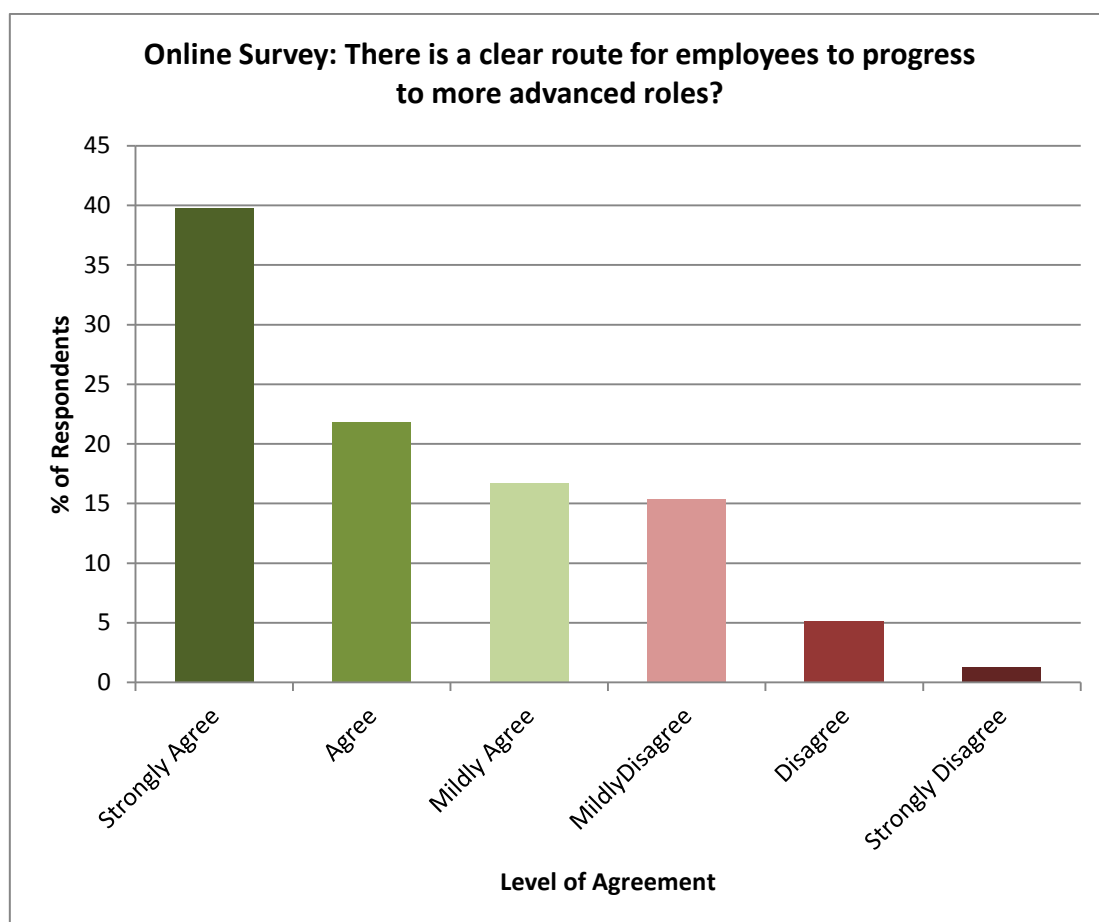
In order to design training which meets the needs and wants of grower managers and their employees it is useful to try to understand people's motivation to train or be trained, in relation to progression within their organisation and the industry as a whole. By obtaining this information learning outcomes can be used to shape training programmes and qualifications which contribute to continuous professional development. The graph below illustrates that over half of the employees who participated in the guided questionnaire strongly agreed that they wanted access to training which allowed them to progress in their career in horticulture; this is encouraging when considering staff retention and succession planning.

Fig. 17



However, it is vital to consider whether employers are motivated to create a route by which their staff can progress to more advanced roles, and whether their organisation has the capacity to provide those opportunities internally. Figure 18 illustrates that for a variety of reasons 21% of grower managers who completed the online survey did not feel that creating clear routes by which their staff could progress was of high importance or possibly not even feasible.

Fig. 18



Some possible explanations of barriers to the provision of opportunities for staff to progress within their organisation were revealed during the grower manager interviews. Only seven out of the seventeen organisations interviewed stated that they were able to offer clear opportunities for progression, and even in these organisations barriers and conditions were outlined. Below is an illustration of the types of barriers and conditions perceived to be limiting the creation of internal progression routes.

Fig. 19: Grower manager interview comments concerning internal progression routes



Furthermore, despite capacity being the predominant barrier to progression within organisations, it appears that different barriers also exist across the industry which may be impeding the route of an individual from entry to a senior role. The comments shared by growers interviewed are illustrated below; these show some of the barriers which contribute to only seven respondents agreeing that progression routes did exist within the industry.

Fig. 20: Grower manager interview comments concerning industry progression routes



Collectively, these findings strongly suggest that there is a need to change the face of horticulture which is recognised by an industry eager to professionalise horticulture and collaboratively communicate what the industry has to offer in relation to careers. In order for this to happen there would need to be industry buy-in and a driver to facilitate the change.

SUMMARY & NEXT STEPS

The findings were used as a discussion starter for a working group that consisted of industry and educational representatives exploring the content of compulsory and optional units and the learning mechanisms to be used. Following this it was decided that the first unit will be produced covering Plant Growth and Development and will be initially piloted in Autumn 2011; this will be evaluated and used to further improve the development of new and innovative training that really works for grower managers and their staff. The initial unit will test the use of new delivery mechanisms such as online learning, materials to formalise in-house programmes delivered by skilled staff, and provision of industry workshops. It may be that unit content is delivered in more than one format to embrace the needs of a variety of organisations and individuals.

Finally, the consultation has shown that the glass is at least half full for the horticulture industry as it has illustrated that careers in the industry show much promise, that supervisory roles are obtainable if individuals are willing to move nurseries, and that small changes within the industry and its training provision could reinvigorate the opportunities the industry provides; this offers the potential to produce a pool of labour which fully equips the industry today and for the future.

ACKNOWLEDGEMENTS

The HTA, HDC, and University of Reading would like to say a big thank you to all those who have participated in this consultation; the information you have provided will be invaluable in the designing of new training programmes and qualifications, and it has been both a great privilege and an enjoyable experience to see the industry in all its diversity.

REFERENCES

- Feinberg, J. (2009) Wordle, <http://www.wordle.net/>
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APPENDICES

- Appendix 1: Online Survey
- Appendix 2: Employee-Guided Questionnaire & Grower Manager Interviews
- Appendix 3: Employee & Grower Manager formal qualifications for horticulture roles
- Appendix 4: Most Listed Likes & Dislikes Of Working in Horticulture

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- Fig 1. Employee Guided Questionnaire – Training Undertaken
- Fig 2. Online Survey – Time Available for Training
- Fig 3. Employee Guided Questionnaire – Best Things About Working in Horticulture
- Fig 4. Employee Guided Questionnaire – Worst Things About Working in Horticulture
- Fig 5. Online Survey - Training Types Being Used
- Fig 6. Online Survey – Preferred Training Types
- Fig 7. Online Survey – Need for New Training Solutions
- Fig 8. Employee Guided Questionnaire – Employee Training Types Preference
- Fig 9. Employee Guided Questionnaire – Training at Other Nurseries & Organisations
- Fig 10. Grower Manager Interviews – Preferred Training Types & Mechanisms
- Fig 11. Employee Guided Questionnaire – Skills Areas for Development
- Fig 12. Online Survey – Scored & Prioritised Skills Gaps
- Fig 13. Grower Manager Interviews – Priority Skill Areas for Improvement
- Fig 14. Employee Guided Questionnaire – Application of Training in Job Role
- Fig 15. Online Survey – Application of Training to Job Roles
- Fig 16. Online Survey – Methods of Evaluating Training Used
- Fig 17. Employee Guided Questionnaire – Desire to Progress
- Fig 18. Online Survey – Organisational Progression Routes
- Fig 19. Grower Manager Interviews – Organisational Progression Routes
- Fig. 20. Grower Manager Interviews – Industry Progression Routes

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- Table 1. Employee Guided Questionnaire – Job Profiles
- Table 2. Employee Guided Questionnaire – Formal Qualifications & Job Role

Appendix 1

INITIAL CONSULTATION: WEB-BASED QUESTIONNAIRE FOR GROWERS

Thank you for taking the time to fill in this questionnaire. The HTA and HDC would really like to know your opinions and experiences relating to training.

We would like to reassure you that the information provided in this questionnaire will remain anonymous and be stored on a password protected computer. However, should you wish to receive any further correspondence from us, there is an option to leave your details at the end of the survey. This project has been reviewed by the University Research Ethics Committee and has been given a favourable ethical opinion for conduct.

Your information will be vital in helping us create training that meets industry needs. We understand that time is limited and not all information is accessible or available to be disclosed. We would be very grateful if you can provide us with as much information as time permits and you feel comfortable with.

Please note that consent to participate in this research is assumed by the completion and submission of this questionnaire.

I. Which of the following crops does your business grow (please tick as many boxes as appropriate)?

☐ Bulbs and Outdoor Flowers

☐ Hardy Nursery Stock Field Production

☐ Hardy Nursery Stock Containerised Production

☐ Protected Ornamentals

☐ Other, please state _____

2. Through the year what is the minimum and maximum number of staff including agency and/or temporary staff that your business employs?

Minimum	X	Maximum	X
1 – 5		0 – 5	
6 – 10		6 – 10	
11 – 15		11 – 15	
16 – 20		16 – 20	
21 – 25		21 – 25	
26 – 30		26 – 30	
31 – 35		31 – 35	
36 – 40		36 – 40	
41 – 45		41 – 45	
46 – 50		46 – 50	
50 +		50 +	

3. How often do you deliver different types of training to your employees?

	Often Used X	Sometimes Used X	Rarely Used X	Not Used X
In- House Workshop				
On the job training				
Training Group				
College Based Training				
Distance Learning				

4. What types of training would you like to see your employees receiving?

	Would Like To Use X	Would Use X	Wouldn't Use X
Booklet/Paper Based			
Online Training			
College Based Training			
In-House Workshop			
Industry Led Workshop			
On the Job Training			

5. Do you have a training group in your area?

Yes

No

6. If no, would you like there to be one in your area?

Yes

No

Don't mind

7. Do you evaluate the success of your training?

Yes

No

8. If yes, which of the following methods do you use to evaluate the success of your training?

	Often Used X	Sometimes Used X	Rarely Used X	Not Used X
Participant feedback				
Trainer Feedback				
On-the-job Assessment				
On-the-job observation				
Appraisals				
Completed Self-assessment Questionnaire				
Reports from Customers, Peers & Managers				
Financial Reports				
Quality Inspection & Success in Assurance Schemes				

9. Do you have a mentoring system within your business? (i.e. where less experience staff are given personal support from more-experienced staff or external agents)

Yes

No

Maybe

10. If a suitable training programme required the provision of a workplace mentor would you be willing and able to provide one?

Yes

No

Maybe

11. Which of the following statements best describes how you allocate money for training?

The business allocates an annual training budget

The business allocates on an 'as required' basis

The business doesn't have a specific policy

12. Do you receive any external funding for your staff training?

Yes

No

13. If yes, from what external sources have you received funds for staff training?

14. Within your workforce, where used, how would you describe the level of the following skills amongst your operatives/horticultural workers?

	Very Good X	Good X	Satisfactory X	Needs Improvement X	Not Relevant X
Maintaining Tools and Equipment					
Plant Identification					
Propagation					
Receipt & Care of Young Plants					
Trimming & Pruning					
Hand Watering					
Irrigation Systems					
Plant Nutrition					
Fertilizer Applications					
Weed Control					
Basic Pest and Disease Recognition					
Crop Hygiene					
Integrated Pest Management					
Potting Operations					
Despatch Operations					
General Nursery Management					
Supervisory Skills					
Leadership Skills					
Budgets & Financial Planning					
Sales and Marketing					
IT Skills					

15. Within your workforce, where used, how would you describe the level of the following skills amongst your team leaders/supervisors?

	Very Good X	Good X	Satisfactory X	Needs Improvement X	Not Relevant X
Maintaining Tools and Equipment					
Plant Identification					
Propagation					
Receipt & Care of Young Plants					
Trimming & Pruning					
Hand Watering					
Irrigation Systems					
Plant Nutrition					
Fertilizer Applications					
Weed Control					
Basic Pest and Disease Recognition					
Crop Hygiene					
Integrated Pest Management					
Potting Operations					
Despatch Operations					
General Nursery Management					
Supervisory Skills					
Leadership Skills					
Budgets & Financial Planning					
Sales and Marketing					
IT Skills					

16. Are there any additional skills you would like to comment on?

17. In what months of the year would you prefer training to occur?

J	F	M	A	M	J	J	A	S	O	N	D

Please indicate your level of agreement with the following statements:

18. There is a very real need for new training solutions specifically aimed at ornamental growers

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

19. There isn't enough time available to train my employees unless it is required under legislation

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

20. Staff can apply the knowledge learnt in training to aid them in their workplace role

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

21. Language is a major barrier to delivering training effectively

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

22. I would prefer to see training take place within the workplace

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

23. There is a clear route for employees to take by which they can progress to more advanced roles within my organisation

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

24. I would like there to be a clear route by which employees can progress to more advanced roles within my organisation?

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

THANK YOU AGAIN FOR TAKING THE TIME TO COMPLETE THIS QUESTIONNAIRE

Appendix 2

TRAINING & DEVELOPMENT – EMPLOYEE QUESTIONNAIRE

CONFIDENTIAL

1. What is your job title?

2. How long have you been in this position?

3. Is your position:

	Full-time	Part - time
Agency/Temporary		
Seasonal		
Permanent (Contracted)		

4. How long have you worked in horticulture?

5. What age are you?

16 – 21

22 – 26

27 – 31

32 – 36

37 – 41

42 – 46

47 – 51

52 – 56

57 – 61

61 – 66

66+

6. Do you have any formal horticultural qualifications?

Yes

No

If yes, then what formal qualification/s do you hold?

7. Have you undertaken any of the following training?

TRAINING COURSE	X
Manual Handling	
Health & Safety in the Workplace	
First Aid	
Risk Assessments	
Pesticide Training	
Crop Production	
BASIS	
FACTS	
English as a Foreign Language	
Working with Other Nationalities	
Team Leadership	
Pest & Disease Recognition & Control	
COSHH/CIEH Certificate	
Fork Lift Truck	

8. Do you keep a record of the training and learning you undertake?

Yes

No

9. Do you have any supervisory responsibilities?

Yes

No

If yes, typically how many people do you supervise?

0

1- 5

6 -10

10 – 20

20 +

10. What are the three skill areas you think could be most improved by training to help you perform better in your job?

SKILLS	X
Basic Pest and Disease Recognition	
Hand Watering	
Weed Reduction	
Plant Maintenance	
Irrigation Systems	
Propagation	
Receipt & Care of Plugs/Liners	
Handling Fertilizer	
Plant Identification	
Supervisory Skills	
Managing People	
Leadership Skills	
Maintaining Tools and Equipment	

Other (Please state):

11. What type of training would you prefer to receive?

TRAINING TYPE	X
In-house workshops (Possibly led by outside organisations)	
On the job training	
Training group	
College based training	
Distance learning through a work book	
Distance learning via online mechanisms	

Other (Please state):

12. Do you have access to a computer at work?

Yes

No

13. What are the three best things about working in horticulture?

1.

2.

3.

14. What are the three worst things about working in horticulture?

1.

2.

3.

15. I know about the different types of training available to me?

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

16. I can apply what I learn in training to my role in the workplace?

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

17. I am happy for all types of training to be delivered in English?

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

18. It would be beneficial to sometimes receive training at other nurseries and horticultural organisations?

Strongly Agree

Strongly Disagree

1 2 3 4 5 6

19. I would like to do training that allows me to progress in my career in horticulture?

Strongly Agree

Strongly Disagree

1

2

3

4

5

6

Thank you for your time and the valuable information you have provided.

TRAINING & DEVELOPMENT – GROWER/MANAGEMENT CONSULTATION

1. What crop/s does your business grow?
2. What is the minimum and maximum number of staff your business has employed over the current year?
3. What training does your business currently provide to your staff?
4. What types of training would you like to see your employees using?
5. What sources of funding does your business have available for training?
6. Do you have computers accessible to general staff in the workplace?

Yes No

If yes, how many?
7. What other resources are available for training in the workplace?
8. Do you have a mentoring system in your business?

Yes No
9. What tools would growers/managers like to have to support them in the provision of quality training for their staff?
10. Would you or one of your more senior members of staff be willing to be trained in instructional techniques to help staff in getting maximum benefit from their training?

Yes No Maybe
11. What are the three skills that you think training would be most beneficial in improving the performance of your operatives/horticultural workers?
12. What are the three skills that you think training would be most beneficial in improving the performance of your team leaders/supervisors?
13. Is there a clear route by which your staff can progress to more advanced roles?

Yes No

If yes, what is that route?
14. What is your highest level of formal qualification in horticulture?
15. What experiences and/or training have been most important in allowing you to progress in your career in horticulture?
16. Can money be found for training?
17. Do progression routes exist across the industry as a whole?

Appendix 3

Employee Qualifications

- A1 Assessor Training
- ABC Facilitating Learning Qualification
- BSc (Hons) Horticulture
- City and Guilds/NPTC Certificate in Countryside Management
- City and Guilds/NPTC National Certificate in Horticulture
- City and Guilds/NPTC National Diploma in Horticulture
- City and Guilds/NPTC NVQ level 1 in Production Horticulture
- City and Guilds/NPTC NVQ level 2 in Production Horticulture
- City and Guilds/NPTC NVQ level 3 in Production Horticulture
- Fork Lift Driving License
- French BSc Level 4 Horticultural Degree
- Level 2 Apprenticeship in Production Horticulture
- Level 2 RHS Certificate in Practical Horticulture
- Level 3 BTEC National Diploma in Horticulture
- Level 3 Institute of Leadership and Management Qualification
- Level 3 RHS Diploma in the Principles and Practices of Horticulture
- Level 4 NVQ in Management
- MSc Horticulture (with plant cultivation specialism)
- PA1 and PA6 spraying certificates
- Romanian MSc Level 5 Horticultural Degree

Grower Manager Qualifications

- BSc (Hons) Agriculture
- BSc (Hons) Applied Biology
- BSc (Hons) Horticulture
- BSc Soil Science
- City and Guilds 3 Year Apprenticeship
- MSc Business
- MSc French
- National Certificate in Horticulture
- National Diploma in Nursery Practices
- RHS National Diploma in Horticulture
- Vocational Training in Agriculture

Appendix 4

Like Working in Horticulture Because:	Don't Like Working in Horticulture because:
Aiding the environment	Weather
Being close to nature	Temperature
Exercise	Dirty Work
Fresh air	Temperature
Having chances to experiment and grow things	Can be isolated
Job satisfaction	Hayfever
Not working in an office	Dark Mornings
Seeing a quality end product	Cleanliness
Working outside	Winter Months
Working with plants rather than the public	
Working with pretty and fragrant plants	
Being part of a small family run business	Difficult trading times
Being part of an organisation/company	Heavy manual work
Customer feedback	Insecurity
Dealing with a friendly industry	Lack of equality
Friendly customers	Long hours
Good working atmosphere	More pay equates to less work with plants
Meeting new people	Not the right training is provided
Working as part of a team	Overtime available is not consistent
Working with interesting people	Slow winter period
Working with like minded people	Stress at peak season
Working with people who are passionate	Work clothing
	Workplace facilities