



Horticultural
Development
Council

Final report

CP 29

Analysis of the Key Strengths
of the Protected Salads Sector
as a Potential Employer

July 2005

Project title: Analysis of the Key Strengths of the Protected Salads Industry as a Potential Employer

Project number CP29

Project Leader Mr. Martin Emmett
School of Plant Sciences
The University of Reading
PO Box 221
Whiteknights
Reading
RG6 2AS

Report Final Report, July 2005

Previous reports Interim Report, April 2005

Key workers: Dr. Marilyn Williams, Chartered Occupational Psychologist

Location of project: Worthing College and West Sussex.

Project co-ordinator Dr. David Hand,
Humber VHB Ltd
West End Nursery
Roundstone Lane
Angmering
West Sussex
BN16 1EB

Date project commenced: 1 November 2004

Date completion due: 31 July 2005

Key words: Recruitment, School-leaver, employment, occupational psychology, protected crops, protected salads

Whilst reports issued under the auspices of the HDC are prepared from the best available information, neither the authors nor the HDC can accept any responsibility for inaccuracy or liability for loss, damage or injury from the application of any concept or procedure discussed.

Results and conclusions in this report are based on an investigation conducted over only eight months and within a small area of the UK. Therefore, care must be taken with the interpretation of the results.

The contents of this publication are strictly private to HDC members. No part of this publication may be copied or reproduced in any form or by any means without prior written permission of the Horticultural Development Council.

CONTENTS

	Page Number
GROWER SUMMARY	
Headlines	5
Background and expected deliverables	5
Summary of the project and main conclusions	6
<i>Understanding of Horticulture</i>	6
<i>Perceptions of Work in the Protected Salads Sector</i>	7
Financial benefits	9
Action Points for Growers	10
SCIENCE SECTION	
1. Introduction	11
<i>Aim of Project</i>	11
<i>Employment Context</i>	11
<i>Recent Research</i>	12
2. Materials and Methods	
<i>Selection of Location</i>	14
<i>Procedure</i>	14
3. Results and Discussion	
<i>A. The Preliminary questionnaire</i>	17
<i>B. Results from the Group Making a Nursery Visit</i>	24
4. Conclusions	

<i>Career Intentions of 16-17 year olds</i>	34
<i>Understanding of the Terms “Horticulture” and “Protected Salads”</i>	34
<i>The match Between the Protected Salads Sector and the Career Requirements of Young People</i>	34
5. Action Points for Industry	37
6. Acknowledgements	38
7. Reference	38
Appendix 1	40
Appendix 2	47
Appendix 3	53

Grower Summary

Headlines

- Work in the protected salads sector was generally perceived, by a cross-section of young people, as being well organised and worthwhile to society. However the work is not regarded as interesting.
- The three most important attributes that young people (16-17 years old) wanted from their future employment were:
 - Interesting work
 - Good rates of pay
 - Opportunity for Promotion
- The term ‘horticulture’ is widely misinterpreted by young people.

Background and expected deliverables

The problems faced by the commercial horticulture sector in recruiting young people are well documented. A clearer understanding of what aspects of the industry will be perceived positively by young people might significantly improve the success of future recruitment initiatives.

It is also important to ascertain what terms such as ‘horticulture’ and ‘salad production’ connote in the minds of young people (and their parents and teachers), and if and how the industry’s image could be re-branded.

The expected deliverables from this work include:

- Information on the way young people perceive the industry that can be used by careers services and Lantra (the sector skills council for landbased industries) to develop strategies to enhance recruitment.

- Guidance on how aspects of the industry, that are positive perceived, can be used in job advertising and careers marketing

Summary of the project and main conclusions

One hundred and thirteen students (16-17 years old) from Worthing College participated in a survey by questionnaire of factors affecting their choice of career, and their perception of horticulture and work in the protected crops sector. The profile of the response group was as follows:

- 61% male, 39% female
- Mean age: 16.6 years
- Home locations were focussed on the Worthing area (76.5%)
- Subjects currently being studied ranged across the whole curriculum; 24% of students were on vocationally orientated courses.

Subsequently, a select group of nine students on an Applied Science course participated in a visit to two protected salads nurseries: Humber VHB West End Nursery (growing herbs and cress) and Madestein (UK) Ltd (propagating and growing lettuce). The perceptions this group had of the industry, before and after the visit, were analysed.

Understanding of ‘horticulture’

It has been suggested that the expression “horticulture” is not clearly understood. To examine this, students were given a range of definitions and asked to select the one they felt was most appropriate. The responses are given below:

Table 1: Selected definitions of the term ‘horticulture’

Definition	Response %
1. The science or art of cultivating plants	58
2. The design of landscapes	7
3. The production of crops and animals for food and other useful	21
4. The design and maintenance of outdoor areas	14

The majority selected a classic definition of horticulture (1.), but a sizeable minority selected a classic definition of agriculture (3.). The confusion over what constitutes “horticulture” was further demonstrated by a question which asked the students which of a range of activities were horticultural.

Table 2: Percentage of respondents that would describe an activity as 'horticultural'

Activity	Percentage
Basket-making	13%
Flower growing	74%
Gardening	72%
Dairy farming	20%
Flower arranging	40%
Interior landscaping	21%
Cereal production	38%
Golf course maintenance	25%
Tomato production	62%
Potato growing	83%
Tree planting & maintenance	80%

Perceptions of work in the protected salads sector

As part of the original questionnaire, 113 students provided their views on the importance of a range of factors in the selection of their career, they also gave their perceptions of the type of work and work environment that occurs in the protected salads industry*. A further group of 9 students provided their perceptions after they had made a visit to two nurseries. This information was then ranked with the most positive perception ranked as “1”. Table 3 shows how these rankings compare to each other.

* The students were informed that “protected salads” was defined as growing crops like tomatoes, fresh herbs, cucumbers and young vegetable plants.

Table 3: Ranked perceptions of horticultural work versus importance to future career

Criteria	Ranked perceived aspect of working in horticulture (based on 102 responses)	Rank after visit to nurseries (based on 8 responses)	Rank in importance to Career selection (based on 109 responses)
Opportunity to use practical skills	1	2	17
Working in a well organized environment	2	1	6
Work that is Important to society	3	9	15
A safe working environment	4	15	7
Clearly defined individual responsibilities	5	5	5
Opportunity to use social skills	6	7	14
Opportunity to make friends	7	6	4
Good feedback on performance	8	4	13
Good staff facilities	9	10	18
Flexible working hours	10	8	11
Opportunity to use thinking skills	11	13	8
Working in teams	12	12	12
Work that is varied	13	17	9
Good rates of pay	14	3	2
Good social and professional status	15	11	10
Opportunities for promotion	16	16	3
Opportunity to develop leadership skills	17	14	16
Work that is physically demanding	18	19	19
Work that is interesting	19	18	1

Scores in bold italics indicate neutral or negative mean perception values

It is striking that the visit had little overall impact on these rankings; if the table is split into two halves the components of each half remain relatively unchanged, although the actual data does show a general improvement in perception of most of the factors after the visit. The visit was particularly effective at changing perceptions on pay rates.

The industry will be pleased to see that it is regarded as well organised and of value to society, but these factors are not as important to young people as might be presumed.

The most important career attribute, to a young person, is that the job should be interesting; however, this is ranked the lowest in perception of the protected salads sector (and even has a negative mean score). This fundamental factor probably over-rides all other issues in terms of meeting the challenge of improving overall perception of the industry.

Financial benefits

There is no direct financial benefit to growers from this project. However, there will be indirect benefit if the information gained can assist in improving recruitment.

It is widely acknowledged that the horticultural industry struggles to attract sufficient recruits with a long term interest in a career in horticulture. Shortfalls in staffing result in increased cost per man-hour due to the need for additional overtime and potential lost sales. A shortfall of just one key employee might cost a business at least £7,500 in additional overtime cost per annum, but the impact is likely to be more significant because of the strain placed on other employees in the system.

Action points for growers

- There are qualifications in “Applied Science” including GCSE and National Diploma; those developed by Edexcel contain assignments that have to be carried out in an industrial context. Growers can be pro-active in encouraging schools to use their facilities as a resource especially on issues relating to use of IT and Health and Safety.
- Lantra is currently developing a new GCSE with OCR which will have a specific component in production horticulture.
- Lantra and the Royal Horticultural Society are currently working on an initiative known as “Greenskills” aimed at improving training and recruitment into horticulture. This report will help in the development of strategy for marketing the industry to young people.
- The careers services and the “Greenskills” initiative have determined that there is not enough information on career pathways in commercial horticulture. Details on the correct courses and entry level employment opportunities in order to achieve a specific role within the industry are not readily available to those advising young people.
- Developing interest in plants from an early age has to be crucial in improving knowledge about, and perceptions of the interest value of horticultural work at the time career decisions are made by young people. Initiatives to involve children with horticulture may be beneficial in achieving this. Current examples include the West Sussex Growers Association’s “Grow a Garden Mum” Competition; in 2005 over 2,300 primary school children participated in this initiative.
- Job advertising and careers marketing should emphasise the social nature of the environment on nurseries (where this is true). The issue of pay is also important but may need to be addressed in different ways.

CP 29

Analysis of the Key Strengths of the Protected Salads Sector as a Potential Employer

Science Section

1. Introduction

Aim of Project

The aim of this project is to characterise how the work environment on a protected salads nursery is perceived by a broad cross section of young people (16-18 years old). A better understanding of how workplaces are perceived by potential young employees could enable growers to consider changes in working environments and conditions that might improve the rate of acceptance of job offers and staff retention. Traditionally the horticultural industry has promoted careers within the sector as offering the chance to work with plants in an outdoor or healthy environment. It is generally acknowledged that new themes are needed to attract sufficient new recruits.

Employment Context

Unemployment in key horticultural production areas is currently very low. For example in West Sussex it is currently at 1.1% (Source: VT Careers – May 2004). It is therefore vital that employment opportunities are effectively marketed to attract the best of the available labour market. The government-appointed “Sector Skills Council” for the landbased sector is known as Lantra; they conducted a review of the labour market, published in 2001, which revealed that 50% of horticultural employers had difficulty in recruiting skilled staff, and 42% had difficulty in recruiting unskilled staff.

For young people seeking employment, the Connexions Service is responsible for providing careers guidance in the career decision making process. Given the range of

employment and training and educational opportunities available it is possible that, unless a young person specifically indicates an interest in horticulture, it might not arise as an option.

Recent research

One of the main thrusts of recent UK initiatives to enhance careers guidance for the under-19 age group has been an emphasis on the skills/abilities needed for particular occupations (Morris, 2004). The traditional and well-supported view held by occupational psychologists and careers advisors is that the fit between vocation and person (in terms, not only of abilities, but also of personality and interests) is important amongst predictors of vocational success and satisfaction (eg Reeve & Heggstad, 2004). Interests and work-related values are the focus of the present study, which sought to identify students' expectations about work in the horticulture industry in terms of the following:

- i.* Some general, but pivotal 'job characteristics' (established by Hackman & Oldham, 1980), and incorporated into his model of job-related well-being by Warr (2002).
- ii.* Their intentions, subjective norms and self-efficacy, with regard to such a career (see Giles & Rea, 1999).
- iii.* Specific aspects of work and work environment of relevance to the horticulture context.

Of concern also are students' overall attitudes to work in this sector; Haste (2004) reports a MORI survey finding that only one third of 11-21 year olds would be interested in a job in science and that there were gender differences in their views towards this area of work, an effect shown earlier in Breakwell's (2001) study, where the impact of subjective norms was also indicated.

Finally, some recent career guidance strategies depend on initial choice of possible occupations to be researched, assuming that the majority of students will easily identify

these, whereas the ultimate career decision-making process is often fraught with difficulties (Albion & Fogarty, 2002) and based on limited access to information about the full range of work opportunities actually available, as well as lack of opportunity to structure self-awareness except in the domain of skills/abilities. This study thus sought to include information about the career decision-making stage and the careers envisaged at that point.

2. Materials and Methods

Selection of Location

The study was based in West Sussex because of the concentration of the protected salads industry in the county. The local Connexions Service (for which careers advice is delivered by VT Careers Management West Sussex) was consulted regarding a suitable sixth form college to work with. Worthing Sixth Form College was recommended on the basis of the number of students (about 600) and a successful track record of participation in education-industry partnerships.

Procedure

The main objective of the experiment was to examine changes in a sixth form student's perception of horticulture and work in the protected salads sector, before and after visiting some commercial nurseries. These perceptions would also be compared with the factors that they considered most important in a future career.

A questionnaire was prepared that examined the following:

- i.* Current studies of the student
- ii.* Perceived importance of a range of factors in future career selection.
- iii.* Previous contact with the horticultural industry
- iv.* Perceptions of the type of work and working environment on a protected salads nursery. (NB: "protected salads" was defined as growing crops like tomatoes, fresh herbs, cucumbers and young vegetable plants).
- v.* The student's current attitude to the possibility of a career in horticulture.

An initial beta-testing of the Questionnaire was conducted with students at Farnborough Sixth Form College. The final version, described hence as the Preliminary Questionnaire, is in Appendix 1.

Questionnaires were presented to groups of students during a registration period in week commencing 30 January 2005. It was completed in two parts, with sections *i-ii*

completed before the remainder was submitted to the students. One hundred and thirteen completed questionnaires were returned.

Following completion of the questionnaire it had been intended that a sub-group of respondents would volunteer for a visit to protected salads nurseries that had been arranged for mid-March. However, fewer than five students were prepared to volunteer, and the visit was cancelled. As an alternative, a group of 16-17 year old students who were on a BTEC National Diploma in Applied Science Course were selected to go on a visit to a couple of nurseries as part of their studies. The group consented to respond to a revised version of the original Questionnaire (Appendix 2) and to provide feedback in a further questionnaire that was used at the end of the visit (Appendix 3).

The visit took place on Wednesday 22 June 2005. The nurseries visited were:

Humber VHB West End Nursery – where the group were shown production of growing herbs and cress by Mr Chris White-Moncrieff (Production Director). See Figure 1.

Madestein (UK) Ltd – where the group were welcomed by Mrs Tineke Zwinkels (Partner) and shown the propagation and production of lettuce crops by Gerard van der Hut (Nursery Manager). See Figure 2.

Figure 1: Visit to Humber VHB West End Nursery



Figure2: Visit to Madestein UK Ltd.



Photographs taken by Julia Hoare, Head of Science, Worthing Sixth Form College

In order to fulfil syllabus requirements, the hosts emphasised Health and Safety issues and also the application of Information Technology. The group were also encouraged to ask questions about a potential career in the industry.

There was good interaction between the hosts and the group on both visits, but it should be noted that outside temperatures on the day exceeded 26°C and it is likely that the even hotter conditions inside the greenhouses did influence the group's perceptions.

3. Results and Discussion

A. The preliminary questionnaire

Background Data

The number of useable completed questionnaires was 113; 12 students had either failed to complete all sections, or had evidently used all rating scales in an arbitrary way. Not all questions received adequate responses from the 113 respondents, but useable data were retained and analysed using the SPSS (version 11.0) package.

The profile of the response group was as follows:

- 61% male, 39% female
- Mean age: 16.6 years
- Home locations were focussed on the Worthing area (76.5%)
- Subjects currently being studied ranged across the whole curriculum at BTEC National or AVCE Level; 24% of students were on vocationally orientated courses.

Responses concerning current career plans were treated as belonging to one of the four categories indicated in Table 1.

Table 1: Current Career Plans

Value	Description	% of students
1	Definite plans	12
2	Pretty clear plans	30
3	Vague ideas	35
4	No idea at all	24

If these four categories are taken as lying on a scale from 1 to 4, then the mean value was 2.7; both percentages and the mean suggest that more than half the students were fairly unclear about their future careers.

However, most students (90% of those with definite, pretty clear or vague plans) were able to name some area of possible future work – many involving ‘get a degree’, some being more specific about their intentions. No career aspirations involved horticulture or agriculture (but 3 were interested in veterinary science).

Inspection of the data suggested a gender difference with regard to clarity of career plan: a comparison of males and females with ‘definite’ plans as against those giving responses in the other 3 categories indicated that proportionately more female than male students had definite plans [$\chi^2 (1) = 4.067, p < .05$].

Knowledge and experience of horticulture

Many recruitment campaigns have used the word “horticulture”, so the questionnaire examined students’ understanding of the word both in regard to an overall definition and the types of activity encompassed within it. Table 2 shows the percentages of students that selected each definition from the range offered.

Table 2: Selected definitions of the term “horticulture”

Definition	Response %
1. The science or art of cultivating plants	58
2. The design of landscapes	7
3. The production of crops and animals for food and other useful	21
4. The design and maintenance of outdoor areas	14

The majority selected a classic definition of horticulture (1.), but a sizeable minority selected a classic definition of agriculture (3.). The confusion over what constitutes “horticulture” was further demonstrated by a question which asked the students which of a range of activities were horticultural:

Table 3: Percentage of respondents that would describe an activity as “horticultural”

Activity	Percentage of students
Basket-making	13%
Flower growing	74%
Gardening	72%
Dairy farming	20%
Flower arranging	40%
Interior landscaping	21%
Cereal production	38%
Golf course maintenance	25%
Tomato production	62%
Potato growing	83%
Tree planting & maintenance	80%

Few students reported experience of work in horticulture. 8% had themselves had some experience, while 5% had family or friends involved in horticulture.

Analysis indicated no association between ‘experience’ and knowledge of, or interest in, horticultural work.

Factors important in career selection

In order to assess the relevance of any perceptions of the horticultural industry it is important to identify what factors are regarded as most important in career selection. Students’ responses to a range of factors were scored on a five point scale, where “5” is a factor believed to be ‘.very important’, “3” where it ‘matters a bit’ and “1” where it was regarded as ‘not at all important’. Table 4 shows the various factors arranged in descending order of perceived importance. The degree to which work is interesting was thus seen to be of major importance, while the least important factor was the range of non-strenuous activity.

Table 4: Factors Important in Career Selection

Rank	Factor	n	Mean	Std. Deviation
1	Interesting work	112	4.55	.583
2	Good pay	111	4.37	.713
3	Opportunity for promotion	112	4.30	.695
4	Opportunity to make friends	112	4.19	.777
5	Physically comfortable environment	112	4.10	.859
6	Clearly defined responsibilities	112	4.04	.793
7	Well organised work	111	4.00	.853
8	Physical safety	112	3.99	.973
9	Opportunity to use initiative	112	3.97	.716
10	Opportunity for further training	112	3.96	.884
11	Opportunity to use thinking skills	112	3.92	.892
12	Variety of work	111	3.91	.745
13	Professional and social status	112	3.87	.925
14	Flexible hours	112	3.79	.892
15	Opportunity to work independently	112	3.79	.871
16	Team work	112	3.77	.880
17	Feedback on personal progress	112	3.76	.852
18	Opportunity to use social skills	112	3.72	.988
19	Importance to society	112	3.71	.874
20	Opportunity to develop leadership skills	112	3.68	.913
21	Opportunity to use practical skills	112	3.63	.959
22	Opportunity for career advancement	111	3.42	.900
23	Range of physical activity	112	2.99	.865

According to the mean scores, even the least important ‘mattered a bit’; no factors were regarded as not very, or not at all, important.

Comparisons were made between subgroups of students to assess any differences in terms of the degree to which they viewed the various factors as important. First, the views of male and female students were compared. Significant differences were found between males and females for the importance of interest, variety of work, importance of work to society and opportunities to use social skills, receive training and make friends. In all cases, females regarded these factors as more important than did males.

Secondly, the students were grouped according to whether they thought it was “very unlikely” that they would undertake a career in horticulture or whether it was more likely. The two groups differed significantly in their evaluation of the importance of opportunities to use initiative and to work independently, those regarding these factors as more important being more negative about the prospect of a career in horticulture.

Similar comparisons were made between those being more or less positive about a career in the protected salads sector; no significant differences were found here.

Perceptions of work in the protected salads industry

When asking the students to give their perceptions of the type of work and working environment on a protected salads nursery they were supplied with the definition of “protected salads” as growing crops like tomatoes, fresh herbs, cucumbers and young vegetable plants.

The students gave their response to a range of statements. Most statements on the questionnaire were positively worded; strong agreement with statements was scored as +2, strong disagreement, as -2. Scores were reversed for negatively worded statements. Over all statements, a higher score (above 0) reflects a more positive view, a lower (below 0), a negative view, of how working in the industry was envisaged. The mean scores for levels of agreement with the statements are shown below in Table 5.

Table 5: Perceptions of work in the protected salads sector

Perception	n	Mean Score	Std Deviation
Opportunity to use practical skills	102	1.06	.729
Healthy environment	102	.62	.676
Well organized work	102	.61	.846
Work important to society	102	.57	1.000
A safe environment	102	.52	.793
A quiet environment	102	.51	.931
Responsibilities clearly defined	102	.50	.686
An unpolluted environment	102	.46	.886
Good light conditions	102	.44	.874
Acceptable overtime	102	.35	.684
Opportunity to use social skills	102	.26	.964
Opportunity to make friends	102	.25	1.029
Good feedback on personal progress	102	.25	.895
Good staff facilities	102	.24	.881
Flexible working hours	102	.24	.881
Opportunity to use thinking skills	102	.20	1.053
A pleasant smelling environment	102	.15	.969
Mostly teamwork	102	.12	.968
Accessible locations	102	.10	1.029
Varied work	102	.08	1.166
Career support from Management	102	.08	1.031
Good pay	102	.07	.915
Good social and professional status	102	.02	.975
Good promotion opportunities	102	.00	1.090
Opportunity to use leadership skills	102	-.19	1.041
Comfortable climate	102	-.21	.998
Physically demanding work	102	-.25	1.066
An enclosed environment	101	-.28	.939
Interesting work	102	-.30	1.167
Mostly work alone	102	-.34	.960

[Kendall's Coefficient of Concordance, for these ratings, $W(29) = 0.128$, $p < .001$, indicating that the rankings of the means differ significantly across the aspects of work about which respondents gave their views.]

These ratings, averaged across all respondents, indicate that on most criteria, work in this sector is regarded in a fairly neutral way; the only statement receiving high endorsement is that concerning the opportunity to use practical skills. There is overall disagreement,

however (albeit not *strong* disagreement) that the work would offer leadership activity, a comfortable climate, be physically demanding, entail an enclosed environment, be interesting, and be solitary.

[Note: It may be noted that some of these more negatively evaluated aspects were represented in the questionnaire by negatively worded statements, for which scores were subsequently reversed, raising the question as to whether these particular effects are artifactual, arising through respondents not having read the statements carefully. This is unlikely to be the case for three reasons: firstly, not all the negatively worded statements received the same type or level of endorsement; secondly, questionnaires had been scrutinised for evidence of random responding, and data for this section for 12 respondents had then been rejected; thirdly, for the case of ‘interesting’ as an aspect of work, it was notable that of the 8 volunteered comments in response to this criterion, 2 were ‘it’s boring’ (the other 6 expressing a need to know more about the industry).

Overall perception of work in the protected salads industry

Analysis of responses to the statements concerning views of work in the industry, demonstrated that, together, the items constituted a reliable scale ($\alpha = 0.83$), so that a respondent’s total score over all items could be used as a measure of their overall attitude towards work in horticulture. The mean attitude score was 0.2033 (SD=0.385). Since the ‘neither agree nor disagree’ response to the statements comprising this attitude measure received a score of ‘0’, this mean attitude score indicates that this was the predominant response. Analysis of the mean attitude score of each individual respondent shows that 50% of respondents expressed an attitude in the ‘neutral’ range (between 0 and 0.5), 32% were more negative, while 18% were expressing positive views.

Interest in Following a Horticultural Career

The students were asked a series of questions about their attitude to a career in horticulture. The responses to the statement “It is possible that I might follow a career in horticulture” are shown in Table 6.

Table 6: Responses to the statement “It is possible that I might follow a career in horticulture”

Attitude	Frequency of response	%
Very Much disagree	45	43.3
Disagree	32	30.8
Neutral	17	16.3
Agree	8	7.7
Very much agree	2	1.9
Total	104	100.0

Only five students (4.8%) agreed with the statement that they “might be interested in following a career in the protected salads sector”. Responses to other questions in this section indicated that many students thought that people important to them would not think a career in horticulture was a good idea; they also had little confidence that they would be successful in such a career.

B. Results from the Group Making a Nursery Visit

Nine students (6 females, 3 males), studying for a BTEC National Diploma in Applied Science visited the Humber VHB West End and Madestein Nurseries on 22 June 2005. Earlier, 8 of these had completed an abbreviated version of the questionnaire answered by other students in March (see Appendix 2). This abbreviated version included questions about factors important to them in their future career, their current career intentions, and about their expectations about work in the protected salads sector, and the possibility of their future participation in such a career.

The ‘post-visit’ questionnaire (Appendix 3), completed by all 9 students before leaving the second nursery site, asked four open-ended questions seeking their impressions about which aspects of the working environment, and the work itself, they had found better or worse than expected, followed by structured questions about their views of the work and work environment on the nurseries, and their feelings about this kind of work, for them in the future. Finally, students gave accounts of what aspects of the work they had seen

surprised them most, and noted the positive aspects of the work they would emphasise to encourage someone to work in the industry.

Students' impressions of work and work environment:

Students' written comments were interpreted in the context of their observable reactions during the visits. It was a very warm, sunny day with outside temperature in excess of 26C. The climate in the greenhouses, where most of the visiting time was spent, was extremely hot and humid. Fortunately, the students remained interested and observant and attended well to the commentaries of the guides for the morning and afternoon visits. Despite the phrasing of questions on the questionnaire, some responses did not clearly distinguish work from work environment – hardly surprising on this particular day when the heat was so pervasive. Responses are summarised below (number of respondents in brackets):

Aspects of the Work Environment that were Better than Expected

- Management, pay, number of breaks (2)
- Some employees being able to leave when a job was finished, number of different types of work (2)
- Fresh air, spacious and open environment, warmth all year round, and the use of knowledge used and gained in the greenhouses (1)

Aspects of the Work Environment Worse than Expected:

- Greenhouses, negative effects of heat (hot & sweaty) (4)
- Repetitiveness of work (2)
- Too many plants, hazardous machinery.(1)

Aspects of Work itself Better than Expected:

- Some employees can leave when job finished, level of automation (3)
- Labelling systems, management, less manual than expected.(1)

Aspects of Work Worse than Expected:

- Greenhouses, crop-growing, noisy machinery, heat (2)
- Repetitive work (2)
- Lots of manual labour involved (1)

Aspects of Work most Surprising:

The Students were asked “Overall, what aspects of work in this industry surprised you most?” The individual responses are given below:

“The overall, the work in this industry that surprised me the most was how comfortable the working environments were.” (Male)

“The fact that there are more machines used to do the work.” (Female)

“What surprised me most was that everyone worked in teams; but had individual jobs to do.” (Female)

“The different areas of work involved and the skills necessary”. (Female)

“The organisation skills involved & constant demand for a certain working pace.” (Female)

“Though there were lots of machines there are very high levels of manual labour.” (Male)

“The technology involved surprised me in how sophisticated it was.” (Male)

“The amount of work involved.” (Female)

“The amount of machinery and lack of people. I could not work in an environment with not many people.” (Female)

Positive Aspects of Work to Emphasize

The students were asked “If you were encouraging a student to follow a career in horticulture, what positive aspects of the work would you emphasize?” The individual responses are given below:

“Warm, comfortable environment, good pay, fairly easy work.”

“That you are working outside in a nice environment.”

“The atmosphere, climate, workload, and pay.”

“The technical areas of work.”

“Calm working environment, some knowledge to be picked up about lettuce & hygiene!”

“Flexibility of hours, fresh air, sociable to colleagues.”

“The pay seems quite good and there are flexible working hours.”

“Knowledge gained, new experiences.”

“The only part that I would encourage would be the management side of it. The rest is hard, boring labour. You don’t get paid enough for what you have to do.”

Interpretation of impressions

Students' comments reflect the most striking impressions gained through the visit. From the guides' commentaries, they had picked up on the fact that some employees could leave when their job for the day was finished, that the pay was good, that there were adequate breaks (supported by observation); their overall impression was that work was well organised and managed, and that cultivation was based on application of research-based knowledge. What struck their eyes and ears were impressions of space, noisy machinery (even if not in constant use), of some employees carrying out repetitive work with speed regulated by machines, but also of many of the operations (seed-sowing, watering) being highly automated. The visits had not been explicitly career-oriented, so no direction had been given to students as to whether they should consider the 'work itself' from the point of view of any particular level/occupational role in the nurseries – their impressions therefore cover a range of perspectives, from that of the temporary operative to that of manager. Given the variety of possible career paths, this range of perspective provides some insight into their views of work at the various levels.

Analysis of quantitative questionnaire data from students on the visit

Only 9 students had participated in the nursery visit, and only 8 of these had completed both pre-visit and post-visit questionnaires. The work-related priorities of these students were compared with those of the earlier group of respondents. The ranking of factors important to them in their future careers was similar to that of the earlier group, correlating positively ($r_s = 0.732$; $n=19$; $p < .01$). A measure of their overall 'attitude' towards work in the sector was derived on the basis of the 25 responses to the expectations questions: these questions comprised a reliable measure ($\alpha = 0.792$), giving a mean score of 0.43 (SD = 0.35), only marginally (and not significantly) different from that of the earlier respondent group.

The attitudes of the visit group after the visit showed a slight (but insignificant) improvement (mean score = 0.48). This should probably not be interpreted as reflecting an 'overall attitude', since now the members of the group, after the visit, are reporting on different aspects of their experience more objectively. The mean scores may give an insight into the colouring of their judgements by an overall impression however, and it is

interesting that for four of these respondents, their ‘overall’ view seems to have improved somewhat, while for the other four, it had not.

Table 7: Perceptions of work in protected salads sector (after visiting nurseries)

Perception	N	Mean	Std. Deviation
Well organized work	8	1.38	.744
Opportunity to use practical skills	8	1.25	.463
Accessible location	8	1.00	.535
Good pay	8	1.00	.535
Good feedback on personal progress	8	1.00	.756
Responsibilities clearly defined	8	1.00	.535
An unpolluted environment	8	.88	.835
Opportunity to make friends	8	.88	.354
Opportunity to use Social Skills	8	.88	.641
Healthy Environment	8	.87	.641
Flexible working hours	8	.75	.463
Work important to society	8	.75	.707
Good light conditions	8	.75	1.165
Career support from Management	8	.63	.744
Good staff facilities	8	.50	.926
Good social and professional status	8	.50	.756
A pleasant smelling environment	8	.50	.926
Mostly teamwork	8	.50	.756
Opportunity yo use thinking skills	8	.50	1.069
Opportunity to use leadership skills	8	.38	.744
An enclosed environment	8	.25	1.165
Acceptable overtime	8	.13	.354
A safe environment	8	.13	.641
Good promotion opportunities	8	.13	.835
Mostly work alone	8	.13	.354
Varied work	8	.13	1.126
Interesting work	8	.00	.756
Comfortable climate	8	-.25	1.282
A quiet environment	8	-.38	.916
Physically demanding work	8	-.50	1.512

Given the small size of this group, the mean values shown in Table 7 may only be treated as very crude summaries. It is notable, however, that the interest level of the work seems to be viewed as relatively low (but not as low as the earlier group had expected), and the environment was not experienced as enclosed as had been anticipated. The visit had

afforded rich experience on which students could now base their views, so their post-visit responses to the questions about work in this sector were examined in some detail. Table 8 shows the changes in perceptions, for particular aspects of work, reported after the visit, in terms of frequencies of particular responses.

Table 8: Changes in views of different aspects of work after visit

Perception	No. respondents				
	no change	positive change		negative change	
		1 pl.	>1 pl.	1 pl.	>1 pl.
Mostly working alone	4	4	0	0	0
Well organised work	4	3	0	1	0
Career support from Management	5	0	1	2	0
Opportunity to make friends	3	1	1	3	0
Opportunity to use leadership skills	2	2	3	1	0
Mostly teamwork	2	3	0	1	2
Good promotion opportunities	3	1	0	3	1
variety	3	1	0	1	3
Physically demanding work	2	1	3	0	2
Good feedback on progress	4	3	0	1	0
Comfortable climate	2	2	1	0	3
A quiet environment	1	0	1	4	2
A pleasant smelling environment	6	0	1	0	1
An unpolluted environment	4	1	0	1	2
Good light conditions	4	1	2	0	1
A safe environment	5	0	0	1	2
A healthy environment	4	2	0	1	1
An enclosed environment	3	3	1	0	1
Good social and professional status	4	3	0	1	0
Work importance to society	4	3	0	0	1
Good pay	2	3	2	1	0
Good staff facilities	1	2	1	4	0
Accessible location	2	2	3	1	0
Flexible working hours	3	4	0	0	1
Acceptable overtime	2	1	0	4	1

The table shows, for each aspect, the number of respondents with unchanged responses, the number showing positive change (by one scale point and by more than one scale point), and the number showing negative change (again, by one scale point or by more than one scale point). NB: Unfortunately due to a clerical error the pre-visit questionnaire

did not assess the students' perception of how interesting the work was and four other factors.

It is important to note that little information could be gained by the students' directly from the visit about some aspects of work: levels of career support, promotion, feedback and status, for example, received little explicit comment from the guides, and were difficult to make inferences about on the basis of what was observed. These were aspects where few changes in response, before and after the visit, were seen.

Aspects showing a number of positive changes included: level of organisation (where the use of technology and the evident need for planning made strong impressions), pay (about which information was provided), the accessibility of both locations, and the flexibility of hours (the opportunity to leave early?).

Aspects showing negative changes can be interpreted in terms of brief but memorable images and experiences: noisy machinery, accounts of pressure from the market (from which inferences about overtime requirements could be made), references to insecticides engendering ideas about pollution, heavy machinery threatening safety, and visually homogeneous areas challenging notions of variety.

An interesting case of conflicting views concerned the physical demands of the work; the high level of automation in use for some functions conflicted with observations that a degree of manual work was still required for others.

The final question to be asked of this data concerned whether the visit students' views about the possibility that they might be interested in a horticulture career in the future had changed. The mean scores for responses to questions concerning an interest in such a future career, other people's views about this, and confidence that one might be successful in this, all indicated more positive views. Only the difference between the means for confidence in being able to do the work (pre-visit = -0.88, post-visit = 0.75) was statistically significant ($t = -2.39$, $df = 7$, $p < .05$).

Table 9: Changes in views of career (for self) in protected salads sector after visiting nurseries.

Statement	No. of respondents				
	no change	positive change		negative change	
		1 pl.	>1 pl.	1 pl.	>1 pl.
I might be interested in following a career in the protected salads sector	3	3	1	1	0
If they knew more about it, most people who are important to me would think it a good idea for me to consider a career in this sector	2	5	0	1	0
I am quite confident that I <u>could</u> pursue a career in the protected salads sector successfully, if I wished to.	2	5	0	1	0

Table 9 shows that for each of these questions, only one respondent (and not the same respondent for each question) expressed less interest and confidence in a future career in this sector following the visit.

3. Conclusions

Career Intentions of 16-17 year olds

The data presented here is of general interest to the careers advisory sector and conforms with the generally accepted view that even once young people have reached the minimum age for full-time work, the majority are still quite undecided about their future career. The lack of decision-making is coupled with a range of priorities that probably differ markedly from those that might be assumed. For example, the ability to make friends in the work place is regarded as more important than the potential for career advancement.

Understanding of the terms “Horticulture” and “Protected Salads”

Given that the theme of “horticulture” is used in much careers literature, it is interesting to see that this term is not particularly well understood and not clearly differentiated from agriculture by at least 20% of young people. The use of language such as “protected salads” was not directly examined but might be assumed to be no less confusing. There appears to be a need to identify the most appropriate language for describing the industry (and its sectors) in a way that young people can accurately interpret.

The match between the Protected Salads Sector and the Career Requirements of Young People

Table 10 compares the ranked order of perceptions of the protected salads industry (in the “Preliminary Questionnaire”) with perceptions after a visit and the rank order of the related career selection factor.

Table 10: Ranked Perceptions of Horticultural Work versus Importance to Future Career

Criteria	Ranked perceived aspect of working in horticulture (based on 102 responses)	Rank after visit to nurseries (based on 8 responses)	Rank in importance to Career selection (based on 109 responses)
Opportunity to use practical skills	1	2	17
Working in a well organized environment	2	1	6
Work that is Important to society	3	9	15
A safe working environment	4	15	7
Clearly defined individual responsibilities	5	5	5
Opportunity to use social skills	6	7	14
Opportunity to make friends	7	6	4
Good feedback on performance	8	4	13
Good staff facilities	9	10	18
Flexible working hours	10	8	11
Opportunity to use thinking skills	11	13	8
Working in teams	12	12	12
Work that is varied	13	17	9
Good rates of pay	14	3	2
Good social and professional status	15	11	10
Opportunities for promotion	16	16	3
Opportunity to develop leadership skills	17	14	16
Work that is physically demanding	18	19	19
Work that is interesting	19	18	1

Scores in bold italics indicate neutral or negative mean perception values

It is striking that the visit had little overall impact on these rankings; if the table is split into two halves the components of each half remain relatively unchanged, although the actual data does show a general improvement in perception of most of the factors after the visit. The visit was particularly effective at changing perceptions on pay rates.

It had been hoped that this project would find more significant and positive changes in perception after a visit; they could then be developed as themes to be used in job advertising and careers promotion. Unfortunately this did not occur, but there are some important observations: in particular the industry is seen as likely to be a good place to make friends (and this is very important to a young person). This could be emphasised in advertising and in careers marketing.

The industry will be pleased to see that it is regarded as well organised and of value to society, but these factors are not as important to young people as might be presumed. The most important career attribute, to a young person, is that the job should be interesting; however this is ranked the lowest perception of the protected salads sector (and even has a negative mean score). This fundamental factor probably over-rides all other issues in terms of meeting the challenge of improving overall perception of the industry.

4. Action Points for Industry

- There are qualifications in “Applied Science” including GCSE and National Diploma; those developed by Edexcel contain assignments that have to be carried out in an industrial context. Growers can be pro-active in encouraging schools to use their facilities as a resource especially on issues relating to use of IT and Health and Safety.
- Lantra is currently developing a new GCSE with OCR which will have a specific component in production horticulture.
- Lantra and the Royal Horticultural Society are currently working on an initiative known as “Greenskills” aimed at improving training and recruitment into horticulture. This report will help in the development of strategy for marketing the industry to young people.
- The careers services and the “Greenskills” initiative have determined that there is not enough information on career pathways in commercial horticulture. Details on the correct courses and entry level employment opportunities in order to achieve a specific role within the industry are not readily available to those advising young people.
- Developing interest in plants from an early age has to be crucial in improving perceptions of the interest value of horticultural work at the time career decisions are made by young people. Initiatives to involve children with horticulture may be beneficial in achieving this. Current examples include the West Sussex Growers Association’s “Grow a Garden Mum” Competition; in 2005 over 2,300 primary school children participated in this initiative.
- Job advertising and careers marketing should emphasise the social nature of the environment on nurseries (where this is true). The issue of pay is also important but may need to be addressed in different ways.
- The information gained from this project could be disseminated through the careers advisory network. One option is the Cegnet website.

5. Acknowledgements

The authors wish to acknowledge :

- Participation of staff and sixth form students at Worthing College and particularly Mrs Judy Woods (Vice Principal) and Ms Julia Hoare (Head of Science).
- Students at Basingstoke Sixth Form College are also thanked for participation in the beta testing of the questionnaire.
- Humber VHB and Madestein Nursery for hosting the visits
- The advice of and support of Sally Beel (Industry Partnership Manager) at Lantra and Phillip Finlinson (Area Manager) of VT Careers Management West Sussex, who deliver careers guidance and support to West Sussex schools and colleges on behalf of Sussex Connexions.

6. References

Albion, M J. & Fogarty, G.J. (2002). Factors affecting Career Decision-Making in Adolescents and Adults. *Journal of Career Assessment*, 10, 1, 91-126.

Beel, S . Personal Communication, 25 July 2005

Breakwell, G M. (2001). The gender-gap in science attitudes, parental and peer influences: Changes between 1987-88 and 1997-98. *Public Understanding of Science*, 10, 1, 71-82.

Finlinson, P. Personal Communication, 27 July 2005

Giles, M. & Rea, A. (1999). Career self-efficacy: An application of the theory of planned behaviour. *Journal of Occupational & Organizational Psychology*, 72, 393-398.

Hackman, J.R. & Oldham, G.R. (1980). *Work Redesign*. Reading, MA: Addison-Wesley.

Haste, H (2004). *Science in my future: a study of values and beliefs in relation to science and technology amongst 11 – 21 year olds*. Report 1, Nestle Social Research Programme.

Morris, Marian (2004). *The case for Careers Education and Guidance for 14-19 Year Olds*. Slough:NFER.

Reeve, C.L. & Heggstad, E.D. (2004) Differential relations between general cognitive ability and interest-vocation fit". *Journal of Occupational and Organizational Psychology*, 77, 385-402.

Warr, P.(2002) The Study of Well-being, Behaviour and Attitudes, in: P. Warr (ed) 'Psychology at Work' (5th edn.). Harmondsworth, Middlesex: Penguin, pp 1-25.

Websites

www.edexcel.org.uk

www.cegnet.co.uk

www.connexions.gov.uk

www.lantra.org.uk

APPENDIX 1: Preliminary Questionnaire

HDC Careers in Horticulture Project

Thank you for agreeing to respond to this questionnaire about your career intentions and your thoughts about what it would be like to work in the horticulture industry.

It does not matter if you have no experience or idea about the horticulture industry, we are still interested in what you imagine it will be like.

Some of the questions invite you to respond in your own words, while others offer alternative answers which we ask you to choose between, circling the answer which best fits your view.

Section 1

First some questions about yourself:

1. Name.....
2. Age.....(years)
3. Sex: Male / Female
4. Your home postcode (first half only eg. BN8).....
5. Please list below the courses you are currently taking:

Level	Subjects
BTEC First / GNVQ	
GCSE	
BTEC National/AVCE	
AS and A2	

7. Thinking about what you might be intending to do when you leave this college, please say (by circling the most appropriate response) how you would describe your current (work/study/career) intentions:

Definite plans | Pretty clear ideas | Vague ideas | No idea at all

If you have 'no idea at all,' please go to Section 2; otherwise:

8. What (briefly) are your current ideas/plans for the future? :

.....

.....

.....

Section 2

After you finish your formal education, what do you hope your main employment will offer?
 Please rate each factor below in terms of how important you believe it would be to you:
 (by putting a 'tick', for each factor, in the column which best represents your view)

	Factor	Very Impt.	Impt.	Matters a bit	Not very Impt.	Not at all Impt.
9.	Work that is interesting					
10.	Opportunity to use practical skills					
11.	Opportunity to use social skills					
12.	Opportunity to use thinking skills					
13.	Feedback on how well I was working					
14.	Work well organised/managed					
15.	Opportunity to use initiative					
16.	Clear definition of responsibilities					
17.	Opportunity to work independently					
18.	Opportunity to make friends/meet people					
19.	Opportunity to develop leadership skills					
20.	Opportunity for career advancement					
21.	Opportunity for further training					
22.	Working as a member of a team					
23.	A range of non-strenuous physical activity					
24.	A variety of work					
25.	Physically comfortable environment					
26.	Assurance of physical safety					
27.	Good rates of pay					
28.	Importance of work to society					
29.	Good facilities for break times					
30.	Level of social & professional status of job					
31.	Flexibility of working hours					

Now some questions about what you think horticulture involves:

32. Which of the following statements gives the best definition of horticulture? (*please tick one*)

- The science or art of cultivating plants
- The design of landscapes
- The production of crops and animals for food and other useful products
- The design and maintenance of outdoor areas

33. Which of the following activities could be described as horticultural ? (*tick all that you think are applicable*)

- Basket making
- Flower growing
- Gardening
- Dairy farming
- Flower arranging
- Interior landscaping
- Cereal production
- Maintaining a golf course
- Tomato production
- Potato growing
- Tree planting and maintenance

The next few questions concern your experience of work in horticulture:

34. Have you had any (paid or unpaid) work experience in any form of horticulture?

No Yes

If 'no', please go to question 36; if 'yes':

35 Please briefly describe the kind(s) of experience(s) you have had:

.....
.....

36 If any members of your family are, or have been, employed in any form of horticulture, please give brief details about their family relationship to you and the kinds of employment involved (*or say 'none'*)

.....
.....

Thank you for completing these 2 sections of the questionnaire – please hand them in now, and collect and complete section 3.

HDC Careers in Horticulture Project

It is important that you put your name on this part of the questionnaire:

Name.....

Section 3

In this part of the questionnaire, we want to examine what your thoughts are about working in a specific part of the horticulture industry.

The protected salads sector involves growing crops like tomatoes, cucumbers, fresh herbs and young vegetable plants in greenhouses.

We are interested in your expectations about what working in the protected salads sector of horticulture would be like -

How do you imagine a young person who has finished College, considering working in the protected salads industry, would respond to the following statements?

Please tick the most appropriate box

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
37.	There would be good opportunity to use practical skills					
38.	There would be good opportunity to use social skills					
39.	There would be good opportunity to use thinking skills					
40.	The work would not be very interesting					
41.	Individual responsibilities would be clearly defined					
42.	Most of the time would be spent working alone					
43.	Operations in the workplace would be well organised					
44.	Management would encourage you to realise your career potential					
45.	The workplace would be a good for making friends and meeting people					
46.	There would be little opportunity to develop leadership skills					
47.	Most work would be done in teams					
48.	There would be good opportunities for promotion					
49.	The work would be varied					
50.	The work would be physically demanding					
51.	There would be good feedback about how well one was working					

What is your response to the following statements about your perception of the environment on a protected salads nursery?

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
52.	The climate in a greenhouse will generally be comfortable to work in					
53.	It is a noisy environment					
54.	It is a pleasant smelling environment					
55.	It is generally an unpolluted environment					
56.	Many areas will have poor light conditions					
57.	It is a safe environment					
58.	It is a healthy environment					
59.	It is a relatively confined and enclosed environment					

What is your response to the following statements about employment (generally) in the protected salads industry.

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
60.	A good job in this industry has good social and professional status					
61.	The work is important to society					
62.	Typical pay rates are good for the work involved					
63.	There are good facilities for staff					
64.	Workplaces are in locations that are relatively easy to get to					
65.	The industry offers good flexibility with respect to working hours					
66.	Overtime requirements are generally acceptable					

67. Please use the space below to make any additional comments about your perceptions of the horticulture industry:

.....

Having thought about work in horticulture in general, and in the protected salads sector in particular, please respond to the following statements about your feelings about this kind of work, for you, in the future:

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
68.	It is possible that I might follow a career in horticulture					
69.	I might be interested in following a career in the protected salads sector					
70.	Most people who are important to me would think it a good idea for me to consider a career in horticulture					
71.	Most people who are important to me would think it a good idea for me to consider a career in the protected salads sector					
72.	I have little confidence that I could pursue a career in horticulture successfully					
73.	I have little confidence that I could pursue a career in the protected salads sector successfully					

74. **Would you be willing to participate in a day* of visits to protected salads nurseries (free of charge)?**

**[The visit will be on Wednesday 16 March, this is a day when all students will be researching careers in college and no lessons will be missed. You would be asked to give feedback on what you see after the visit.]*

(Please tick one of responses below)

Yes.....

No.....

Thank you very much for completing this questionnaire

APPENDIX 2: Pre-Visit Questionnaire

HDC Careers in Horticulture Project

Thank you for agreeing to complete this questionnaire about your career intentions and your thoughts about what it would be like to work in the horticulture industry.

It does not matter if you have no experience or idea about the horticulture industry, we are still interested in what you imagine it will be like.

Some of the questions invite you to respond in your own words, while others offer alternative answers which we ask you to choose between, circling the answer which best fits your view.

Section 1

First some questions about yourself:

1. Name.....
2. Age.....(years)
3. Sex: Male / Female
4. Thinking about what you might be intending to do when you leave this college, please say (by circling the most appropriate response) how you would describe your current (work/study/career) intentions:

Definite plans | Pretty clear ideas | Vague ideas | No idea at all

If you have 'no idea at all,' please go to Section 2; otherwise:

5. What (briefly) are your current ideas/plans for the future? :

.....

.....

.....

Section 2

After you finish your formal education, what do you hope your main employment will offer?
Please rate each factor below in terms of how important you believe it would be to you:

(by putting a 'tick', for each factor, in the column which best represents your view)

	Factor	Very Impt.	Impt.	Matters a bit	Not very Impt.	Not at all Impt.
6.	Work that is interesting					
7.	Opportunity to use practical skills					
8.	Opportunity to use social skills					
9.	Opportunity to use thinking skills					
10.	Feedback on how well I was working					
11.	Work well organised/managed					
12.	Opportunity to use initiative					
13.	Clear definition of responsibilities					
14.	Opportunity to work independently					
15.	Opportunity to make friends/meet people					
16.	Opportunity to develop leadership skills					
17.	Opportunity for career advancement					
18.	Opportunity for further training					
19.	Working as a member of a team					
20.	A range of non-strenuous physical activity					
21.	A variety of work					
22.	Physically comfortable environment					
23.	Assurance of physical safety					
24.	Good rates of pay					
25.	Importance of work to society					
26.	Good facilities for break times					
27.	Level of social & professional status of job					
28.	Flexibility of working hours					

The next few questions concern your experience of work in horticulture:

29. Have you had any (paid or unpaid) work experience in any form of horticulture?

No Yes

If 'no', please go to question 36; if 'yes':

30 Please briefly describe the kind(s) of experience(s) you have had:

.....

.....

Section 3

In this part of the questionnaire, we want to examine what your thoughts are about working in a specific part of the horticulture industry.

The protected salads sector involves growing crops like tomatoes, cucumbers, fresh herbs and young vegetable plants in greenhouses.

You will be taken on a visit to some nurseries producing salad crops – what do you think the work environment in these nurseries is like? -

Please tick the most appropriate box

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
31.	There would be good opportunity to use practical skills					
32.	There would be good opportunity to use social skills					
33.	There would be good opportunity to use thinking skills					
34.	The work would not be very interesting					
35.	Individual responsibilities would be clearly defined					
36.	Most of the time would be spent working alone					
37.	Operations in the workplace would be well organised					
38.	Management would encourage you to realise your career potential					
39.	The workplace would be a good for making friends and meeting people					
40.	There would be little opportunity to develop leadership skills					
41.	Most work would be done in teams					
42.	There would be good opportunities for promotion					
43.	The work would be varied					
44.	The work would be physically demanding					
45.	There would be good feedback about how well one was working					

What is your response to the following statements about your expectations of the environment on a protected salads nursery?

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
46.	The climate in a greenhouse would generally be comfortable to work in					
47.	It would be a noisy environment					
48.	It is a pleasant smelling environment					
49.	It would be generally an unpolluted environment					
50.	Many areas would have poor light conditions					
51.	It would be a safe environment					
52.	It would be a healthy environment					
53.	It would be a relatively confined and enclosed environment					

What is your response to the following statements about employment (generally) in the protected salads industry.

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
54.	A good job in this industry has good social and professional status					
55.	The work is important to society					
56.	Typical pay rates are good for the work involved					
57.	There are good facilities for staff					
58.	Workplaces are in locations that are relatively easy to get to					
59.	The industry offers good flexibility with respect to working hours					
60.	Overtime requirements are generally acceptable					

61. Please use the space below to make any additional comments about your expectations of what working in the horticulture industry would be like:

.....

Having thought about work in horticulture in general, and in the protected salads sector in particular, please respond to the following statements about your feelings about this kind of work, for you, in the future (how do you feel about this, how do you think people who know you would think about this, and , if you were to work in this area, how confident are you that you would be successful?)

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
62.	It is <i>possible</i> that I might follow a career in horticulture					
63.	I might be <i>interested</i> in following a career in the protected salads sector					
64.	Most people who are important to me would think it a <i>good idea</i> for me to consider a career in horticulture					
65.	Most people who are important to me would think it a <i>good idea</i> for me to consider a career in the protected salads sector					
66.	I am confident that I <i>could</i> pursue a career in horticulture successfully					
67.	I am confident that I <i>could</i> pursue a career in the protected salads sector successfully					

Thank you very much for completing this questionnaire

APPENDIX 3: Post-Visit Questionnaire

HDC Careers in Horticulture Project

Thank you for agreeing to respond to this questionnaire about your impressions of what it would be like to work in the horticulture industry.

Some of the questions invite you to respond in your own words, while others offer alternative answers which we ask you to choose between, circling the answer which best fits your view.

First, please answer the following:

- 1. Name.....
- 2. Age.....(years)
- 3. Sex: Male / Female

Now, please think about the nurseries you have just visited, and tell us, in your own words:

- 4. Which aspects of the working environment seemed better than you expected?

.....
.....
.....

- Which aspects of the working environment seemed worse than you expected?

.....
.....
.....

- 5. Which aspects of the work itself seemed better than you expected?

.....
.....
.....

- 6. Which aspects of the work itself seemed worse than you expected?

.....

.....

.....

Now that you have visited some nurseries producing salad crops, what did you think of the work and environment in these nurseries?

Please read each statement carefully before ticking the most appropriate box

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
8.	There seemed to be good opportunity to use practical skills					
9.	There seemed to be good opportunity to use social skills					
10.	There seemed to be good opportunity to use thinking skills					
11.	The work did not appear to be very interesting					
12.	Individual responsibilities would be clearly defined					
13.	Most of the time would be spent working alone					
14.	Operations in the workplace seemed to be well organised					
15.	Management would encourage you to realise your career potential					
16.	The workplaces seemed good for making friends and meeting people					
17.	There seemed to be little opportunity to develop leadership skills					
18.	Most work appears to be done in teams					
19.	There would be good opportunities for promotion					
20.	The work seems to be varied					
21.	The work seems to be physically demanding					
22.	There would be good feedback about how well one was working					

What was your impression of the work environment in the nurseries?

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
23.	The climate in greenhouses would generally be comfortable to work in					
24.	It is a noisy environment					
25.	It is a pleasant smelling environment					
26.	It is generally an unpolluted environment					
27.	Many areas have poor light conditions					
28.	It is a safe environment					
29.	It is a healthy environment					
30.	It is a relatively confined and enclosed environment					

On the basis of what you have learned during the visits, what is your response to the following statements about employment in the protected salads industry.

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
31.	A good job in this industry has good social and professional status					
32.	The work is important to society					
33.	Typical pay rates are good for the work involved					
34.	There are good facilities for staff					
35.	Workplaces are in locations that are relatively easy to get to					
36.	The industry offers good flexibility with respect to working hours					
37.	Overtime requirements are generally acceptable					

Please respond to the following statements about your feelings about this kind of work, for you, in the future:

	Statement	Very Much Agree	Agree	Neither Agree nor Disagree	Disagree	Very much disagree
38.	I might be interested in following a career in the protected salads sector					
39.	If they knew more about it, most people who are important to me would think it a good idea for me to consider a career in this sector					
40.	I am quite confident that I <u>could</u> pursue a career in the protected salads sector successfully, if I wished to.					

Please answer the following questions in your own words:

41. Overall, what aspects of work in this industry surprised you most?

.....

.....

.....

42. If you were encouraging a student to follow a career in horticulture, what positive aspects of the work would you emphasize?

.....

.....

.....

Thank you very much for completing this questionnaire

Martin Emmett School of Plant Sciences, University of Reading

Marylin Williams School of Psychology, University of Reading