



STOCKBRIDGE TECHNOLOGY CENTRE LTD WINTER NEWSLETTER

Congratulations to Andrew Johnson of Living Salads. Andrew came to STC some eighteen months ago with his idea for a new product. He was introduced to us by Peter Branfield, one of our Directors and a former Trustee. Julian Davies worked with Andrew to test lots of plants, to get a mixed product with even growth rates. Working with these samples, Andrew visited potential customers and after some early setbacks, finally gained a foothold in Sainsbury. He spent the summer working with STC staff including our lettuce man, John Sykes, to master the art of glasshouse production. In September he went off on his own just renting from us and will shortly be setting up on his own rented nursery.

Andrew's hard work, faith and determination supported especially by his wife, resulted in his product winning its class in the supermarket Q Awards, but to crown his success, it went on to win the overall reward for all classes. Andrew was also a runner up in the BBC Food and Farming Awards the previous week.

It's called incubator activity, if you want to be posh, and it shows another aspect of how STC works with and for the industry.

We had our first Board meeting of the Joint Boards of STC Research Foundation (our charity) and STC last week. We were able to approve accounts which show a small surplus, but this was after we transferred some monies to the charity so it can be used for future investment in the industry. Once it's in the charity, it cannot be distributed to the shareholders!!! This is a very good result and the staff must be congratulated on their continued efforts to serve the industry, since it is only satisfied customers who return with more business.

We had long debates on what we do with the farm outside the area which we need for trials. Because of CAP reform we have a Single Farm Payment, we are in a Countryside Stewardship Scheme and are registered for the Entry Level Scheme (for uninitiated, this is money taken out of former crop subsidy and returned for enviro-sensitive farming called modulation). In all, we get an income of some £15000 for this. It also means, however, we do not need to grow anything as long as we maintain the cross compliance rules. On our scale, growing cereals and most break crops lose money, so eat away at our £15000. We are debating extending the eco-lab principles (beetle bank and wildflower strips) across the whole farm. We could have some 20% of permanent ecological fixtures, including shrubs and other biodiversity plantings.

We would then do intensive cereal and vegetable farming amongst this, mainly in strips of 50/100 metres (to fit equipment). These will be sprayed as necessary, to produce a quality crop suitable for supply to supermarkets. This will obviously affect the ecology and we shall need to compare with our larger-scale trials. The emphasis will be on salads and veg, as these are crops most consumers associate directly with pesticide problems.

We shall have to consider how we sell the produce. To date, we have grown wide-acre crops and not sold veg/salads. The idea is we would then use this "whole" farm to show groups around (supermarket managers, public procurers, politicians local and national NGOs and sustainability groups. For example, York City Council has a sustainability department, as do lots of others. We would convert area to demonstrate assurance and LEAF type schemes, to connect farming with the traceability and provenance. Possibly sell them tea and some product to take away. If you think this reconnection with your customers to show and tell them what sustainable production is about would help (or not), please let us know.

On the science side, we are gaining significant interest now in our eco-lab and hopefully will soon be able to raise some project monies to begin to put science rather than emotion into the sustainability debate. Pat Croft will no doubt be reporting in a later newsletter.

You may see a great improvement in this newsletter, as all staff have been on a public relations course. If you cannot spot the difference, I will claim a rebate from our trainer!! The staff with the consultant, are preparing for myself and the Boards, a PR plan for 2006. If we adopt it you may see very exciting changes.

Finally the Rosemary Radcliffe review of levy Boards reported. On first glance it appears to be a non-event, with lots of good analysis and then further time given for people to think or prevaricate. Beware...it is not. There are some fundamental recommendations which could affect our industry. In his rather terse public statements, Mr Colin Harvey has expressed concerns, particularly related to costs and governance.

The report suggests an overriding Board which would pick up all the quasi Government needs because of compulsory levies. There would be subsidiary sector Boards which managed the levy money but with "cooperation" across common expenditures. Finally, there would be a services Board doing shared admin, particularly levy collection.

The HDC is the most efficient, by tens of percentage points, on levy collection and admin. There must be a worry of levelling up, as others are unlikely to level down or they must be very inefficient. The cost difference is basically sector structures and business size. This will not change, so levelling up must be a possibility. The idea of removing the "Government quango" rules is attractive but the "forced" coordination of common expenditures is a bit more thought provoking. One might see it for promotion to consumers, but surely that's Red Tractor or sector needs are as now. If it is pure research then maybe, but the BBSRC might want a say in quality, as they do now. If it is technology transfer, then that is very crop specific and it's doubtful if any advantage or cost saving. I watch growers eyes glaze over if you start talking nitrates for example on indoor and outdoor lettuce in a meeting of indoor growers. The science and regulations are common, the GAP is totally different. Remember also, DEFRA have all but withdrawn from research funding for Horticulture, whereas our agric/livestock colleagues still have specialist, government-financed research institutes like Rothamstead, Nat Veterinary Labs, CSL etc. Their need for their own levies for research /technology is much less, and of course they have full on-label pesticides for all crops a choice not a single product registered at our own expense. Will the overall Board understand?

We are relatively large businesses (some ten times bigger on average) than any other sector. We are very close to our end customer and often in own brand packaging. Our needs are different. The sector Boards are supposed to manage this, but the overall Board is dominated by the farming sectors. Will their needs for commonality overbear our very efficient grower input into where our levies are spent? I have some experience of this arrangement as your past NFU national chairman. I caution you to ask questions. You see a similar arrangement in Assured Food Standards and the assurance schemes to create total farming and growing partnership. Do you feel as close to Assured Produce as you did four years ago and can you influence where it is going?

There is another period of consultation ending mid January. The Radcliffe report shows that lots and lots of people and groups responded to first consultation. I would urge you all to think carefully and try to read between the lines and respond again. A little exercise for the little grey cells over Christmas!!!

Graham Ward OBE

Growing Lettuce – The Hi-Tech Way

STC recently put forward an R&D proposal to the HDC, supported by the Lettuce Technology Group, with a view to establishing a new hi-tech demonstration facility for UK protected lettuce growers at our site. The initial phase of this project, a feasibility study, has now been approved by the HDC Protected Crops Panel.

Growers are currently faced with a number of problems with regard to soil-borne pathogens (following the loss of methyl bromide), nitrates, pesticide residues, continued enforcement by government regulators and the risk of 'naming & shaming' of their major retailers. Unless some, or all, of these problems can be resolved, growers risk losing the confidence of these customers...and shelf space in the major retail outlets.

Rather than continuing the battle against pathogens in the soil with either fungicides or by using biological antagonists in various guises, the idea is to isolate the crops from the soil, thereby reducing the need for pesticide inputs and the concomitant problems that ensue. Instead of using conventional NFT systems that are already in commercial use in the UK, we hope to take the opportunity to look at the latest floating hydroponic technology available from overseas, as this ought to also reduce energy and labour inputs into the crop and improve the economic outlook of the crop overall.

Martin McPherson & Geoffrey Smith (HDC lettuce representative) will initially visit Israel (in early December) to evaluate the floating hydroponics technology first-hand. Subsequently, a report will be prepared and recommendations made based on the information gleaned from the trip and elsewhere. If the initial study is successful, the intention would be to secure further funding to establish the demonstration facility at STC, with funding from a variety of sources along the lines of the successful CGA AYR cucumber project by mid-2006. This would allow the industry to evaluate first-hand the practicality and economics of the system, and ensure any risks/problems associated with the technology can be resolved before widespread commercial uptake.

Dr Martin McPherson

The Plant Clinic

The STC plant clinic is finally slowing down, with sample numbers becoming much more manageable. Overall, 2005 does not seem to have been a bad year for plant disease, perhaps due to the fairly steady temperatures from June through to November in most parts of the country, with few extremes to cause stress to plants.

We are pleased to see that there has been an increase in the number of clients using our water-testing service to monitor the 'health' of their irrigation water for water-borne diseases such as *Pythium* sp. and *Phytophthora* sp. We are keen to promote the idea of regular testing of water, compost, mother stock material etc for pests and diseases, rather than being called upon when events have already occurred and growers are seeking a pesticide solution to an existing problem, although of course we are happy to offer diagnosis and solutions whenever we are able.

Many of the field trials we have carried out in the Crop Protection team are now drawing to a close. We have carried out a range of trials on behalf of Syngenta Crop Protection investigating the efficacy of some novel products to control *Sclerotinia* and *Botrytis* in lettuce and foliar diseases in leeks. These trials are still on-going but there are some promising indications of good results.

We have also carried out some interesting and successful efficacy work, looking at the control of rust on Hollyhocks, and continued our HDC work on *Stemphylium* leaf spot in Hebe, focusing on crop safety, cultivar susceptibility and the most effective timing of fungicide applications.

At this time of year, we are often writing up reports for this year's work, and writing proposals and protocols for next year or the next few years. It can take a lot of mental agility to juggle all the information held in our heads, whilst also trying to keep all the team heads up to date with everything.

Whilst making chit-chat with a fellow party guest recently, I discovered that schools are beginning to change their prospectuses and are coming full circle to offer more vocationally based courses, and some are even offering agricultural and horticultural studies, which I understand may become a GCSE course next year. This fills me with hope that we can start to get more young people into all sectors of the industry. Clearly, I am keen to encourage more young people in to horticultural research, but it is really heartening to think that more young people will just be interested in growing things and understanding agriculture and horticulture. I lost no time in extending an invitation to the school in question to visit STC, and would be pleased to hear from any other parents or teachers who think that their youngsters would be interested in visiting us.

Cathryn Lambourne

Entry Level Stewardship Scheme

We have recently been successful in our application to join DEFRA's Entry Level Stewardship Scheme. This will increase our environmental credentials as the farm is already in the Countryside Stewardship Scheme.

The E.L.S is intended to encourage farmers to adopt simple environmental management practices and the schemes aims are to improve water quality and reduce soil erosion, improve conditions for farmland wildlife and to maintain and embrace landscape character.

Points are awarded for each management option undertaken, a minimum of 30 points per ha, in our case we needed approximately 1700 points. An annual payment of £30 per ha will be made and the agreements last for 5 years.

In order to comply with these requirements, we have established 2 metre and 6 metre buffer strips alongside ditches and hedges respectively. We will be sowing areas with a pollen and nectar flower mix to boost numbers of bumble bees and butterflies, leaving more over-winter stubble, as this is an important food source for seed eating birds, and undertaking hedge and ditch management.

STC helps the earthquake victims in Pakistan

A local village Parish Council held a musical evening in the village hall in order to raise funds for the Pakistan Earthquake Appeal. They contacted STC asking if we could supply any produce for the buffet meal after the concert. We provided carrots, tomatoes and cucumbers and the event raised a considerable amount of money toward the appeal.

Michael Langdale

SOLA Programme

Stockbridge House began its involvement with the SOLA programme in 1993. We are contacted by the HDC, usually around March, with details of the SOLA studies they require. Using the information provided by the HDC, we produce a Study Protocol that is subject to a Quality Assurance audit.

SOLA studies always consist of more than one site ranging from two to, occasionally, six. Geographical diversity is usually requested by the HDC and either we travel to growers in different areas of the country to set up sites or, alternatively, a sub-contractor will set up some of the sites in another area.

A site consists of two plots (each ca. 20-40m²); one remains untreated and the other is sprayed with the test substance. Depending on the test substance, the spray schedule may only involve one spray (e.g. prior to or immediately after planting if it is a herbicide) or there may be two, three or even four sprays at perhaps 7, 10 or 14-day intervals.

Samples for analysis are collected at crop maturity or at very early crop maturity to ensure a 'worst case scenario'. Sometimes there is no specific interval between spraying and harvest stipulated by HDC, but usually a pre-harvest interval is required. That can range from two days for some soft fruit crops, up to six weeks for long term crops, such as Brussels sprouts. Additionally the sampling schedule can include a "residue decline study" which, as well as the pre-harvest interval required for the actual SOLA approval, also involves sampling at, for example, 0, 7, 14 and 21 days after the final spray application.

The results from the decline studies will show how quickly the residues (if there are any) decrease after the final spray application. Therefore, in planning the spray schedules, we have to ensure they coincide with the sampling schedule in order to achieve the pre-harvest interval required for the approval of a particular test substance. Samples are placed in freezers and once the final harvest has been completed, all the samples from a particular SOLA study are dispatched to a laboratory to be analysed.

To comply with the STC "Good Laboratory Practice" policy, a certain number of spray applications and samplings on each study are subject to a Quality Assurance inspection.

Once the field phase has been completed, we produce a report detailing all aspects of the study including the sprays and samples and also crop husbandry, locations, varieties, soil types and any other pesticides that have been applied. This report is then subject to an external Quality Assurance audit. Finally we pass the completed report along with the analytical report produced by the laboratory to HDC who then sends them to PSD.

We would like to take this opportunity to thank the following growers for allowing us to use their sites for the 2005 SOLA studies:

Ray Blackburn (West Holme Salads, Holme-on-Spalding Moor, York)

Steve Brankley (Snaith Salads, Carlton, Goole)

Ian Clough (Snaith Salads, Carlton, Goole)

Roger Hobson (Hobson Farming Ltd, Crockey Hill, York)

Malcolm Kemp (Kemp Herbs, Thetford, Norfolk)

Neil Oldroyd (Oldroyd Rhubarb Growers, Carlton, Wakefield)

David Westwood (Westwood & Son, Thorpe-on-the-Hill, Wakefield)

Carole Rockliff

CGA AYR Cucumber Project

The first crop of the third year of this HDC funded project is now in full production. The following notes summarise our achievements during the first two years. Remember that the national average for conventional production is about 125 cucumbers/m²/year.

Year 1	cucumbers/m ²
Crop 1 (6 Nov 03 to 24 Feb 04)	- 73.15
Crop 2 (26 Feb 04 to 15 June 04)	- 125.75
Crop 3 (22 June 04 to 19 Oct 04)	- 116.15

Total in year 1 - 315.05

Year 2	cucumbers/m ²
Crop 4 (28 Oct 04 to 7 Mar 05)	- 89.08
Crop 5 (10 Mar 05 to 12 July 05)	- 126.63
Crop 6 (19 July to 27 Oct)	- 80.96

Total in year 2 - 296.67

There was an approximate 5% reduction in our yield in year 2. However, the emphasis in the second year was less on outright yield and more on the reduction of energy input. For example, the lights were used less during the longer summer days and less ventilation was used to manage humidity. This gave a reduction of about 14% in overall energy input.

We draw comparisons with "best practice" conventional growers so that we can put our performance into a seasonal context. This was a relatively poor year for natural light and their yields were down by an average of 12%. So, we not only reduced our energy input, but we were affected less than conventional growers by the poor growing season. All things considered, I think we can consider this to have been another very successful year!

[Thanks to Derek Hargreaves and Tim Pratt for their valuable work in this project]

Dr Rob Jacobson

The Food Chain's Contribution to Greenhouse Gas Emissions

Rob Jacobson and Derek Hargreaves recently attended a meeting of the Food Climate Research Network (FCRN) on behalf of STC, the Tomato Growers' Association and the Cucumber Growers' Association.

The FCRN are described as "an interdisciplinary, intersectoral initiative to research & promote ways of achieving absolute reductions in green house gas (GHG) emissions from the whole UK food chain". The Network is funded by a three year grant from the Engineering and Physical Sciences Research Council and is based at the University of Surrey's Centre for Environmental Strategy. The FCRN has a large and wide-ranging membership, including academics, researchers, Defra, other government departments and research funders, consultants, processors and retailers. This may not seem relevant to you but please read on.

The FCRN say that the threat posed by climate change is well recognised, as is the need to act now to reduce the emissions produced by society. Their estimates suggest that the food chain accounts for over 20% of the UK's total emissions of greenhouse gases. As such, they say there is clearly a need for concerted, collaborative action to reduce the food chain's burden on the climate.

The northern European protected crops industry is seen as an important target in reducing these GHG emissions. Comparisons are often drawn with production in Mediterranean countries, focussing on the energy required to heat glasshouses in the north compared with energy to transport food from the south. An example of this approach can be found in a recent Defra report entitled "The Validity of Food Miles as an Indicator of Sustainable Development". Such comparisons can present northern European growers in a bad light.

The FCRN claim to go further than this by researching ways of reducing emissions from all parts of the food chain; i.e. from agriculture through to food processing, packaging, distribution, home storage and preparation, and waste treatment. In fact, when the whole "life cycle" of various types of food is examined, the greatest potential impact on the climate is often found at the consumer end. For instance, the average trip to the supermarket in the car to purchase a few items has a greater impact on the carbon footprint of those items than any other part of the product's life cycle. Furthermore, other inefficiencies in the home, such as long term freezer storage, inappropriate cooking methods and re-heating, combined with wastage, can make the carbon footprint very much worse.

This issue cannot be avoided, but we must ensure that the analysts follow the whole life cycle approach and that governments around the world listen to those results before focusing their attention on producers. STC, TGA and CGA will maintain an involvement in the Network.

Dr Rob Jacobson

Weather for November 2005 at STC

Average maximum temperature °C	Average minimum temperature °C	Average monthly temperature °C	Total rainfall mm	Average sunshine hours
9.78	2.72	6.25	54.5	2.20

<i>Highest maximum temperature</i>	17.5°C	21 st November
<i>Lowest maximum temperature</i>	3.4°C	28 th November
<i>Highest minimum temperature</i>	10.0°C	3 rd November
<i>Lowest minimum temperature</i>	-4.1°C	19 th November
<i>Greatest rainfall in 24hrs</i>	23.0mm	8 th November

Number of days with:

<i>Air minimum below 0.0 °C</i>	= 11
<i>Grass minimum below 0.0 °C</i>	= 14

Number of days with:

<i>0.2mm of rain or more</i>	= 15
<i>1.0mm of rain or more</i>	= 10
<i>5.0mm of rain or more</i>	= 3

Radiation for November = 101.06 MJ/m²

% of long term average = 26.86

Nicola Mason