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OPINION

Early June is a tipping point – we know we’ve got a crop of top and stone fruit but it’s too early to make detailed predictions. Our extended soft fruit season often needs the everbearers and late raspberries to rescue the overall returns, so nothing is certain yet. The 2014 apple and pear harvest is likely to be at least three weeks earlier. Overall reports from all areas suggest a pretty reasonable crop, though slightly patchy. This is as far as Adrian Barlow of EAP is prepared to go, although you can read his final figures for 2013/14 dessert sales in this issue, and an update on the Bramley campaign.

Spring officially comes to an end on 1 June, and reports from the farm walks and meetings held this spring by grower groups in the south-east are a major theme in this issue. A good chance for those who were not able to attend to get a flavour of what the visitors saw, or a summary for those of us who were there but missed something because we were at the back gossiping! The report on the BIFGA Spring Farm Walk, hosted by Colin and Susie Corfield at Owl House Fruit Farm, Lamberhurst, is aptly subtitled ‘Small is beautiful’. Whilst not the largest fruit farm in Kent, it is an object lesson in making the most of your assets and experience. A great example of diversification, Owl House produces about 500,000 litres of juice per annum from a combination of home-grown fruit and that of other growers. They’ve won Great Taste Awards every year for the last 12 years.

The Brenchley and East Sussex Fruit Growers (BEST) Group and local NFU members visiting A. C. Goatham and Son’s Griffin’s Farm at Sutton Valence, Kent saw a whole farm in a Countryside Stewardship Scheme which uses an Integrated Pest Management (IPM) plan, central to which is the minimal use of pesticides. By using intelligent grass and hedge management, the farm raises the number of beneficial insects and bees, and this policy also helps with fruit tree health. Orchard ecology and the ground-breaking research being done at East Malling Research are covered in an in-depth article describing what ants and earwigs can do for us and control methods for combating new pests such as Apple Fruit Rynchites Weevil.

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Thwan van Genulp BV
Eijsder 6
5715 PK Limop
The Netherlands
Tel. 0031(0)492 32 30 00
Fax 0031(0)492 32 30 00
info@thwanvangenulp.nl
www.thwanvangenulp.nl
NFU asks members to report breaches of GSCOP

Farmers and growers can now make anonymous reports of retailers suspected of breaching the Groceries Supply Code of Practice (GSCOP) through the NFU, thanks to a new scheme launched in May. Members can provide information and evidence through the NFU, via a simple online form, thus protecting their anonymity when disclosing information to Groceries Code Adjudicator (GCA) Christine Tacon.

NFU head of food and farming Phil Hudson said: “NFU members have been telling us for some time that breaches of the GSCOP code continue to take place, which is why we lobbied so hard for the introduction of an adjudicator. Christine Tacon’s appointment last year opens up the opportunity to raise our concerns and complaints through an independent adjudicator who is able to carry out investigations and apply sanctions to offending retailers. With this new online form, NFU members are now able to submit their evidence anonymously through their representative body.”

The GSCOP came into force in 2010 with the aim of regulating relationships between retailers and their direct suppliers. It established a number of conditions preventing retailers engaging in unfair practices with their suppliers, such as unjustified payments for customer complaints, retrospective variations to supply agreements, tying to third party goods or suppliers and forced contributions.

“Although the GSCOP code covers direct suppliers only, which often our members are not, anyone with information or evidence of a breach of the code is able to submit evidence to the adjudicator. Therefore, it is still very important for our members to come forward and share their concerns,” added Mr Hudson.

Farmers and growers are also encouraged to take part in a separate survey run by the GCA, aimed at establishing whether relationships had improved since both the code of practice and adjudicator were introduced. NFU horticulture and potatoes adviser Lee Abbey said: “For the role of the adjudicator to be successful in stamping out bad practice, it is important that suppliers, both direct and indirect, provide information on which the GCA can act. The anonymous nature of both the NFU and GCA surveys should provide comfort to those completing the forms, and so I’d encourage anyone who believes that breaches of the code continue to fill them out today.”

Berry Gardens appoints new Chairman

The 42nd AGM of Berry Gardens Growers Limited (BGL) has been held at the Dakota Hotel, Edinburgh.

In his address to the meeting Chairman Paul Kelsey commented, “2013 was a challenging year, with a late start to the season due to an exceptionally cold spring. However Berry Gardens rose to the challenge and, under these difficult circumstances, BGL has delivered an outstanding set of results.

Group turnover was up 2.6% from 2012 to a 2013 figure of £212.8m. The resulting retained profit before tax of £3.6m is the highest the society has ever delivered. This means that Berry Gardens will be rebating some £2.8m of commissions to its members and this figure rises to £3.8m when all other 2013 rebates to members are included. To put this into context, the society rebated £2.5m in each of the preceding two years”.

Paul continued, “Berry Gardens has invested significantly in its packhouse over the last few years, with the project completed in November 2013. The size of the site has almost doubled from 60,000 sq ft to 110,000 sq ft. In addition, we have also introduced significant upgrades to our internal processes and systems, meaning that the packhouse is now well positioned to handle the expanding counter season volumes from our partners, Driscoll’s and other growers.”

After more than three years as Chairman, Paul Kelsey will be stepping down and replaced by his Vice Chairman, Alastair Brooks of Langdon Manor Farm, Kent. As a soft fruit grower, Alastair has been a member of Berry Gardens for 30 years and a board member since 1994.

Alastair states, “Berry Gardens continue to lead the industry with its knowledge, experience and access to exclusive varieties from our partnership with Driscoll’s. As a grower co-operative we work with our customers to ensure quality, efficiency and customer satisfaction. The recent good weather has meant an early start to the UK season which we hope bodes well for the rest of the summer.”

Alastair will be supported by Robin Walker as Vice Chairman. Robin is currently a Non-Executive Director of Berry Gardens with extensive experience in the food industry, most notably with Heinz.
Micron Group welcomes three new team members

Micron Group, experts in precision spraying equipment, has recently had three new employees join the team.

Gillian Wall commenced her employment with the company in March 2014 in a new role of Group Finance Controller. A chartered accountant for over 20 years, Gillian brings extensive knowledge of finance, contract negotiation, human resource management and strategic business development. Gillian will be overseeing management reporting and budgeting for the Group, helping to drive company growth and profitability. As well as heading the Group Accounts Department, Gillian will assume responsibility for the HR and IT functions at Micron’s HQ in Bromyard, Herefordshire.

Based in Berri, South Australia at Micron’s subsidiary company Enviromist Industries Pty, Jaspreet Kaur also joined the Group in March 2014 as the Accounts and Administration Manager. With a Bachelor of Commerce degree in Accounting and Marketing from the University of Adelaide, Jaspreet has strong all-round understanding of accountancy and the latest marketing techniques. As well as her academic achievements, she brings a wide range of practical experience of management accounting, customer service, data analysis, marketing research and project management.

Micron would also like to welcome Simon Rehill, who has been recently employed as the European Sales Manager for the Micron Sprayers division. With over 20 years’ industry experience in his previous sales, service and engineering roles in the agricultural field, both in the UK and abroad, Simon is well placed to develop sales in Europe to a new level. In addition to his in-depth industry knowledge and extensive sales experience, the company is set to benefit from his additional skill set, including all aspects of engineering, electronics and hydraulics.

German and New Zealand partners join IFORED global red-flesh apples partnership

Red Apple Germany and Johnny Appleseed New Zealand have joined IFORED, a world leading consortium to launch and commercialize promising red flesh apple varieties.

After less than two years’ existence, the IFORED group is strengthened with the addition of two leading partners: Red Apple Germany (RAG), a wholly owned subsidiary of DOSK, the research and development consortium owned by the nine largest German cooperatives (ELO, Elbe-Obst, MAL, VEOS, Landgard, VOG, MABO, and WOG), and Johnny Appleseed, fifth generation grower-packer-marketeer, leader on the New Zealand market with the ‘Yummy’ brand. “Our group is mature and working exceptionally well” said Bruno Essner, President of the IFORED Board of Directors. “IFORED is composed of world leaders bringing all the power and experience required to successfully introduce these new red flesh apples to consumers globally”.

With the arrival of its two newest members, the IFORED organization now accounts for the marketing of more than 3 million tonnes of apples annually and controls over 55,000ha of apple orchards.

The members of IFORED are currently evaluating, under their growing conditions, a range of 24 red flesh selections. “The diversity in skin coloration and the superior taste of these new varieties, developed using natural breeding techniques, are amazing. We truly have products with commercial potential”, exclaimed Thierry Ligonniere of IFO, the French research and development company, and breeder of these varieties. The most advanced selections have been planted in pilot orchards in Europe, and the first pre-commercial orchards will be planted in 2015. “We are also putting a tremendous amount of effort into the development of the marketing concept that will govern the sales of IFORED varieties”, acknowledged Bruno Essner.

The current IFORED group, initially formed in 2012, includes 14 leading fruit marketers from five continents to bring these exciting new varieties to market.
Jazz Apple Foundation launched

Worldwide Fruit has launched a Jazz Apple Foundation which will grant monetary awards to individuals, groups and charitable endeavours in need. Money from UK sales of Jazz will be donated to the Foundation each season with the monthly awards aiming to benefit those who share the brand’s core values and beliefs, such as: the importance of nourishing and supporting the next generation of young Brits; encouraging the consumption of an apple-a-day and a healthy, balanced diet; and the belief that sport and physical exercise are vital for a healthy body, mind and soul.

Gary Harrison, Jazz Apple Commercial Manager at Worldwide Fruit said: “We are incredibly excited to be launching the Jazz Apple Foundation to be able to support the causes that really matter to the growing army of Jazz Apple fans in the UK. We can’t wait to hear from them and start making a real difference in communities throughout the UK.”

Launched on 12 May, consumers are requested to apply by downloading the application form from www.jazzapples.co.uk/news/foundation or from the Jazz Apple UK Facebook page. The first award was announced on 2nd June and on a monthly basis from now on.

Jazz apples will once again be at the BBC Good Food Show in June and will be using the show to drive awareness and entries for the Foundation. All takings from the Show will be donated to the Foundation.

For more information on the Jazz Apple Foundation or for terms and conditions, and application forms, visit www.jazzapple.co.uk or email Gary.Harrison@worldwidefruit.co.uk.

Acidifying fertigation fertilizer offers multiple benefits

A unique new highly acidifying and 100% soluble potassium (K) and phosphate (P) fertigation fertilizer, Select PeKacid, is now available for crops including soft fruit. While lowering pH and enhancing nutrient uptake, PeKacid also boasts an anti-clogging action. It has the ease and safety of handling of a solid crystalline fertilizer.

Developed and manufactured by ICL Specialty Fertilizers as part of its highly soluble Select range, PeKacid is a patented product available in the UK and Ireland exclusively from Everris. Recommended for use in open field and soilless cultures, it is specifically designed for nutrition programmes under conditions of hard water or calcareous soils.

“From a single source, PeKacid is extremely pure and clean and is chloride- and sodium-free, making it ideal for even the most delicate crops,” explains Scott Garnett, Specialty Agriculture Manager at Everris. “Containing solid phosphoric acid in a dry form, PeKacid combines the advantages and efficiency of phosphoric acid with the ease and safety of a solid crystalline fertilizer. It can replace all or part of the other acids added to a fertigation programme offering a safer, user-friendly fertilizer source.”

When dissolved in a 1% solution in irrigation water PeKacid creates a pH of 2.2. Highly acidifying, it improves the availability and uptake efficiency of phosphorus and micronutrients, while decreasing phosphorus fixation in the fertigation zone. Depending on the level of bicarbonate needing to be reduced, PeKacid can be sufficient on its own with no additional acidifier required. Neutralising dissolved bicarbonates, it avoids scaling and clogging of pipes, emitters and nozzles, helping to promote an even spread of water and fertilizers. Maximising efficiency, it also helps extend the lifespan of equipment – a particular advantage with subsurface drip irrigation.

“Nitrogen-free, PeKacid allows full and independent control over the N level in the fertigation programme,” says Scott Garnett. “It can be used on its own, in combination with other Select fertilizers or with compound NPK water soluble fertilizers such as Agrolution or Solinure. It also reduces nitrogen volatility, which is common when urea and/or ammonium fertilizers are applied to calcareous soils. Unlike other P fertilizers, PeKacid can be mixed directly with calcium and magnesium fertilizers in soluble NPK formulae.

“At a time when growers are looking to optimize crop performance while improving efficiency, precision nutrition is an attractive proposition. Employing our AngelaWeb software programme, our technical team can provide detailed fertigation programmes specifically tailored to a crop, its growth stage, the growing media and water source. This not only saves valuable management time but helps to ensure that valuable nutrients are not wasted.”
A Northern Ireland Soft Fruit Growers Association (NISFGA) has been formed to support local producers’ expanding output, to meet the rising demand for local produce. The new Association will represent the needs and interests of members, as well as helping growers develop and improve their operations.

The Northern Ireland soft fruit sector’s output is valued at £700,000 per annum and, although small in comparison to the apple sector, valued at £10m per annum, shows great potential. Soft fruit production is dominated by strawberries with 184 tonnes, followed by raspberries at 19.9 tonnes and gooseberries with 9 tonnes. In the Republic of Ireland the soft fruit sector is worth €37m, according to Teagasc, the Irish Agriculture and Food Development Authority; the sector having grown by 190% over the past decade, demonstrating the increasing demand for local soft fruit.

Strongly supported by the Dublin government, growers in the Republic have invested heavily in the capital infrastructure needed to accommodate such growth. In Northern Ireland there is also an increasing demand for local produce, as consumers are now more knowledgeable about the benefits of buying locally, in terms of quality and freshness.

NISFGA plans to promote a ‘Love Local’ campaign and offer a range of services to members. The Association is currently in consultation with growers and Government officials to determine the needs of the sector and how it can be supported, and aims to become the central knowledge base for producers by providing vital information on best techniques and industry updates, and offering growers opportunities for training courses, best practice visits and agronomy services. The group will also organise regular meetings for members to offer each other advice and support.

The new Association was born out of a project supported by the Supply Chain Development Programme, where six growers met regularly to share information and advice. With support from government, and facilitator Valerie Brown, the group was able to visit strawberry growers in Britain and the Netherlands. They also benefited greatly from attending training courses and having specialist agronomists visit their farms. The impact of this support was substantial, so these growers decided to establish the Association to co-ordinate and offer similar support to growers across the province permanently.

Local strawberries are currently mainly sold in small independent greengrocers and convenience stores, but the Association plans to support growers seeking to supply larger supermarkets. Dungannon producer Peter Donnelly, Chairman of NISFGA, commented, “The learning we all experienced as a result of the supply chain programme was incredible. We are a long way behind our counterparts in Britain and the Republic, in terms of investment and infrastructure, but with our new-found knowledge we now have a clear roadmap of where this sector needs to go. Currently the market in Northern Ireland is mainly supplied by imports, but the Association is confident that over the next 5-10 years we can grow our local industry to become a success story similar to that in the Republic.”

2014 BIFGA Annual General Meeting

The 26th BIFGA AGM will be held at Charrington Fruit Farms, Cryals Road, Matfield, Kent, TN12 7HN, by kind permission of Alex Charrington, on Wednesday 18 June at 4pm.

Following registration and refreshments on arrival, the AGM will take place at 4.30pm followed by a demonstration of precision farming technology in the orchard by the main sponsors, Burden Bros. Agri Ltd.

New twin-stem plantings of Annaglo Gala, and also plantings of Zari, together with established orchards of Bramley and Cox will be included in the farm tour, which will be followed by a buffet supper. BASIS and NRoSSo points have been applied to this event.

The BIFGA Committee looks forward to welcoming Members and their guests.

Tickets can be applied for at £10 each. Please contact the Secretary on 01892 722080 or by e-mail at bifga@live.co.uk
New General Manager and President for AgroFresh

AgroFresh, a business unit of Dow AgroSciences and a global industry leader in advanced proprietary technologies for the horticultural and agronomic markets, has announced the appointment of Stan Howell as Global General Manager. Howell replaces José Pina who becomes Leader of the Asia Regional Commercial Unit for Dow AgroSciences.

In his new role Howell will be responsible for ensuring that AgroFresh maintains its strong growth and impetus through the commercialization of new post-harvest technologies and the regional implementation of HarvistaTM, AgroFresh’s pre-harvest management technology.

AgroFresh, which is well known for its SmartFreshSM Quality System, has recently signed a Letter of Intent for a business alliance with the Dutch company Van Amerongen, to market a new technology for Advanced Control Respiration (ACR) that will combine new equipment and control systems with a comprehensive set of fruit quality management services.

A veteran of Dow AgroSciences, Howell said: “I am happy to join such an exciting, growing business that has already achieved tremendous milestones with its post-harvest knowledge and services through SmartFreshTM.” Until recently Howell was a Global Leader of Dow AgroSciences’ Commercial Unit in North America. He joined the Dow Chemical Company in 1976 as a trainee in Memphis, Tennessee and over the years has held a variety of senior management positions in sales, product management and marketing.

Howell became Global Leader for North America in 2002 and added later responsibilities for pest management, Mycogen Seeds, healthy oils and germplasm licensing, leading those businesses through a period of unprecedented growth. Howell holds a bachelor's degree in marketing from Indiana University, Bloomington, Indiana.

Howell said that AgroFresh continued to be among the most innovative companies in its field: “Since its establishment in the late 1990s, AgroFresh has become a clear leader in 1-MCP-based products and systems, and created a sound reputation for its post-harvest expertise and knowledge internationally. Customers value AgroFresh not only for its technologies, but for its commitment to add real value to their business. I’m looking forward to working with its team of dedicated professionals.” Howell’s appointment is effective from May 1, 2014.

Another first for Cocogreen

Cocogreen has become the first UK coir substrate supplier to be granted ISO9001:2008 certification across all of its production facilities in Sri Lanka.

In another milestone for Cocogreen and for the coir substrate industry, in March the company passed its Final Independent Audit performed by SGS for ISO9001:2008 version – Quality Management Systems. The certificate, which is valid until March 2017, has now been issued and presented to the company and is available upon request to all Cocogreen customers, associates and anybody with an interest in the company and its range of quality-certified coir substrate products.

A summary taken from the International Organisation for Standardisation for ISO9001:2008 shows the main requirements of a company to become certified, as an international standard covering all industry types:

- Needs to demonstrate its ability to consistently provide product that meets customer and applicable statutory and regulatory requirements.
- Aims to enhance customer satisfaction through the effective application of the system, including processes for continual improvement of the system and the assurance of conformity to customer and applicable statutory and regulatory requirements.

The granting of the ISO9001:2008 certification is an official and long-lasting recognition of the company’s commitment to the internationally recognised quality of the business, its products, staff, manufacturing and supply practices.

The certificate further increases growers’ ability to trace claims made by sales staff selling Cocogreen products regarding the ownership and operation of full process control. As a multi-site certification, the company can now prove to buyers that when they buy a product it has been manufactured solely by Cocogreen and not passed through other hands during the production process, ensuring higher consistency of quality, greater traceability to growers and supermarkets, and further clarity regarding sourcing and supply.

Further information about ISO9001:2008 can be found at www.iso.org

www.actpub.co.uk
A researcher from Scotland’s Rural College (SRUC) has embarked on a long term study which aims to increase insect pollinators in commercial orchards. The seven year project is a response to the global decline in insect pollinators. The postgraduate research – funded by SRUC – will collate data from across the UK, studying how pollinators can improve the yield and quality of fruits such as apples, pears and cherries. This work will allow the researcher to develop guidance aimed at maintaining and increasing pollinators in the UK.

SRUC PhD student Angela Lloyd, who is carrying out the research, said: “Insect pollination is essential for the fruit growing industry; it improves both the yield and the quality of the fruit; arresting the decline of insect pollinators is therefore vital to ensure this industry can survive. The ultimate aim of this work is to come up with practical guidance on maintaining or increasing pollinator diversity and abundance in and around orchards.”

The research will investigate the factors that could be responsible for declining numbers of fruit pollinators such as agricultural intensification, orchard management and agrochemical use. It will then consider how pollinators influence fruit yield and quality and evaluate which fruits are most threatened by their decline.

Angela said: “We are seeing fewer and fewer pollinators in the UK now, not just bees, but also butterflies, solitary bees and hoverflies. Much of the fruit industry relies very heavily on insect pollination, yet we don’t really know much about the current state of fruit pollinating insects. Which insects are pollinating which fruits? How many pollinators do you need to ensure lots of good quality fruit? And, of course, how can we make sure we get adequate pollination in the face of pollinator declines and the changing climate?”

The research will study orchards – both new and well established – across the UK from the south of England to Scotland. Angela will assess the number and type of pollinating insects visiting the different orchards and then analyse how this affects fruit yield and quality. As agricultural intensification has been cited as a significant factor in pollinator decline she will also study the surrounding countryside looking at how much of the land is under intensive production, and how much is devoted to more natural habitats such as scrubland, hedgerows and flower meadows.

Angela says: “While there has been much coverage recently on the effects of neonicotinoids on pollinators, we have believed for a very long time that agricultural intensification has contributed to this problem. For a variety of pollinators to thrive they need a diverse range of plants flowering at different times throughout the year. However, both in the UK and around the world we have large areas of land devoted to just one type of crop. This work will give a clear picture on how intensification is affecting our vital fruit industry.”

Another issue which could affect pollinator levels in the future is climate change. In the UK it is believed that the weather could become both warmer and wetter, with extreme events such as flooding becoming more common. In 2012 apple growers saw a huge drop in their yield thanks to a very wet summer which disrupted pollination. If such weather becomes more common, maintaining pollinator diversity will help to ensure a good harvest.
Alan Hudson Ltd takes delivery of fifth Berthoud orchard sprayer

With 210 acres of orchards, Alan Hudson Ltd is one of Cambridgeshire’s biggest growers of Class 1 Bramley, Gala and Braeburn apples and Conference pears, mostly for supermarkets, so quality is all-important.

The company has been a Berthoud customer since 2001 and has taken delivery of its fifth sprayer – its third Fructair air-blast model.

This 1,000 litre Ti model features a narrower tower, which is better for pears in particular. It can be run at lower pressure for less drift which, according to Managing Director David Wheeler, is always important in the Fens because there are so many water courses. “Spray drift always looks bad to the public. Fortunately we enjoy lower than average rainfall, so many of our smaller ditches are dry for much of the year, and we also maintain windbreaks. Buffer zones are always contentious: a 30m zone would not be viable as many of our orchards are relatively small, so we must always seek better drift reduction.”

The Fructair boasts a compact design for manoeuvrability, robustness and ease of use. The one-piece reinforced chassis is protected with Berthoud UHR paint. The functions are fully integrated into the tank and chassis unit, including rinsing and hand-washing tanks, and rotary level gauge. The reverse intake axial flow 840mm diameter fan has fixed blades on intake and dual-speed drive with simplified gear-box. The power requirement is 32hp. The new machine is fitted with the SIGMA option 100 litre piston pump (100 l/min at 40 bar) with DPM regulation and VEC electrically operated boom controls.

Alan Hudson Ltd’s Berthoud sprayers are supplied and serviced by Boston Crop Sprayers of Wisbech.

Planning for 2015 Under 40s Conference well under way

On 21 May the current U40s organising committee arranged an interim meeting at East Malling Research, to give interested young people who may wish to join this biennial event an opportunity to hear the plans for the 23rd Under 40s Conference in 2015 from the U40s committee.

Under 40s Chair Lucy Mason introduced the other committee members: Tom Hulme, Treasurer; Alex Cooke, Sponsorship Secretary; Harriet Roberts, Secretary; and Tom Berry and Paul Smith, Joint Vice Chairmen.

Lucy Mason announced that the Conference will be held in the Benelux region on 25-28 February and encouraged those present to join the U40s and to tell their friends. “This is a golden opportunity to widen your horizons at a cost only possible due to the generosity of our sponsors – it is not to be missed”

Lucy recommended that anyone interested in joining the Conference should visit the Under 40s website http://www.under40s.co.uk for more detailed information.

The Conference will be making the following visits:
• Top fruit and stone fruit nurseries in Holland & Belgium
• Apple, pear and cherry growers
• An auction house, and a large packing and storage facility
• Linking up with the Belgian under 35s
• A Belgian research institute
• A large Belgian fruit machinery manufacturer
The U40s group was addressed by Ross Newham, Press Officer at EMR, who gave an overview of EMR history and its current status as the foremost fruit research centre in the UK.

A walk around the Concept Pear Orchard with Graham Caspell, EMR’s Farm Manager, was followed by a visit to the Strawberry Breeding Unit where Adam Whitehouse and Abi Johnson explained the processes of breeding new varieties. Ross Newham showed the group the ‘Rhizo-Lab’, which has been completely revamped, and finally there was an in-depth look at the Produce Quality Centre with Emma Skipper.

This event was well supported with more than 30 potential delegates for the 2015 U40s Conference in the Benelux region attending, plus several sponsors. Any young person wishing to attend the 2015 Conference is asked to contact Under 40s Secretary Harriet Roberts or speak to any member of the committee.

Contact: Harriet Roberts
Email: Harriet.Roberts@adas.co.uk
Tel: 01954 268216 / Mobile: 07831134345
Fax: 01954 267659
Spotted Wing Drosophila – keep watching

The soft fruit industry is urging growers to continue to monitor and take preventative measures against Spotted Wing Drosophila (SWD), a non-native fruit fly, as the mild winter and early spring has increased the need for vigilance.

The coordinated programme of activities organized by the soft fruit industry itself is continuing under the banner “SWD - Spot It, Stop It”, with British Summer Fruits taking the lead. There has been a lot of investment, significant research and planning with growers over the last two years to minimise the potential impact of this pest. Lessons from other countries have shown that by far the best approach to managing the fly is through an integrated management programme, with early precision crop monitoring, regular picking and correct disposal of waste fruit.

Laurence Olins, Chairman of British Summer Fruits, said: "At least 95% of growers are aware of the problem, are taking appropriate action and know how to deal with it, which is a massive change from 12 months ago. The SWD community is greater than last year, in woodlands and hedgerows, due to the mild winter."

There are four ongoing coordinated UK research projects to improve our understanding of how SWD behaves in the UK climate and cropping systems. One is a national monitoring programme led by East Malling Research (EMR) and the James Hutton Institute (JHI) that found that SWD was established in woodlands and hedgerows last year, so growers should be monitoring now, with the soft fruit season having begun. They must ensure that monitoring is in place, in woodlands and wild hosts, and crops.

The campaign also includes a three year research programme to develop chemical and hygiene control measures. Growers should not use these control methods unless they find SWD, when they should use chlorpyrifos and spinosad. It has been found that the most effective way to monitor for SWD is weekly monitoring using Dros-Attract bait in Droso traps. Details of how to use these traps and control methods can be found on the HDC website www.hdc.org.uk/swd.

Professor Jerry Cross, Chief Entomologist at EMR, said: "We are looking at how SWD moves from wild hosts into farms, through close monitoring at two sites; at what chemical control methods are available and whether it is developing resistance to them; and at lures to attract and kill them. We have close contact with colleagues in Europe and the USA, whose experience has informed our strategy. There is a huge international research effort to find biological solutions. We will have new and improved methods of dealing with it."

Waste fruit is attractive to SWD, whether it remains in the field or is discarded from packhouses. It’s worth remembering that waste from imported fruit which passes through UK packhouses can provide a feeding ground for SWD. Growers are strongly advised to use anaerobic composting treatment to dispose of this fruit. It is essential to ensure there is no oxygen getting into the composting fruit and sealed plastic bulk bins are an effective way of achieving these conditions. It’s important to note that simple composting does not kill SWD. The resulting composted waste must be incorporated into the soil. Following some initial work, EMR is continuing a research project that will continue to monitor the composting process during 2014, looking at ways to optimize the breakdown of fruit and other disposal methods, as well as carrying out further trials on control methods.

HDC issues call for soils management tenders

A call for expressions of interest in ‘sustainable soils management for horticultural crops’ has been launched by the Horticultural Development Company (HDC).

The new funding opportunity aims to generate a comprehensive soils research and knowledge transfer programme that directly addresses areas of concern identified by a previously undertaken HDC gap analysis project (CP 107).

The gap analysis found data, compaction, soil-borne diseases, organic matter, precision tools, soil health measurement and monitoring to be key areas requiring further development. It is envisaged that the final programme of work, comprising up to 10 projects, will directly address some of these areas. Successful projects may be ‘stand-alone’, or additions to existing or future research programmes funded elsewhere.

HDC has specified that outputs from the programme must be the production and communication of best practice guidelines for growers. It is interested in receiving expressions of interest that focus on horticultural crops, either alone or in arable/non-arable rotations; have findings that can be implemented immediately or over a two to five year timeframe; take into consideration needs arising from past or current HDC projects; and exploit or translate other soil research elsewhere.

The deadline for receipt of submissions is 1 August 2014. For the full tender documents and details about how to apply visit www.hdc.org.uk/tenders.
Worcestershire-based fruit and ornamental tree grower Frank P. Matthews Limited, is set to launch a new variety of apple tree onto the British market at the HTA National Plant Show in Stoneleigh this June.

The newly named ‘Little Pax’ has a unique life story that started in the 1990s, when a single tree of unknown origin was gifted to St Cecilia’s Abbey in Ryde on the Isle of Wight. The resident Benedictine nuns planted this little orphan in their gardens overlooking the Solent and tended to it, without knowing that it would produce beautiful blossom and a delicious dessert apple.

In 2010, Sr Anselma Scollard from the Abbey approached Nick Dunn at Frank P. Matthews to ask if this ‘new’ variety might be grown and marketed nationwide. After completing four years of trials to establish quality assurance, Frank P. Matthews is now growing Little Pax at its nurseries in Worcestershire and donations from every sale will go to St Cecilia’s Abbey.

Managing Director Nick Dunn, who is also the current Chairman of the RHS Fruit, Vegetable and Herb Committee, explains: “This offers great potential as a new variety, but it was an engaging life story that caught our imagination initially. The Little Pax tree offers high yield, abundant flowering and is rated reasonably well for disease resistance; as well as offering a good resistance to frost at blossom time. It is also proving to be an excellent keeping variety. The pretty bicourlour appearance of the dessert apple will appeal to current trends and the taste offers a sweet essence of honeydew melon with a subtle but lingering champagne quality.”

Little Pax will be formally launched at the fifth annual HTA National Plant Show on 24 June and orders for bare root and container-grown trees can be placed at the event. Trade customers will also be able to order online through the dedicated Trade Accounts Log-In at www.frankmatthews.com

Nick Dunn continues: “We are growing 2,500 trees now in readiness for the autumn market, and will be promoting Little Pax directly to consumers, so I am quite confident that the combination of a lovely story, stunning orchid-like blossom and an amazing fruit will nurture increasing demand through garden centres nationwide.”

For more information about Little Pax or Trade Accounts, please contact Sales Manager Matthew Thomas, or Steph Dunn James at Frank P. Matthews directly on 01584 810 214, or by email to enquiries@fpmatthews.co.uk

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A new apprenticeship scheme is aiming to get more people into a career in agriculture through a partnership between The National Federation of Young Farmers’ Clubs’ (NFYFC) commercial arm HOPS Labour Solutions, Further Education Colleges and farmers.

HOPS, a leading provider of temporary labour solutions, recruitment and educational services to land-based and food industries, wants to become the first port of call for anyone interested in entering the agri-business. The team, based in Stoneleigh, Warwickshire, acts as a matching service for new entrants by finding them a suitable course and arranging a placement for them on a local farm. It is hoped that the scheme will help to close the age gap between established farm workers and new entrants.

HOPS has access to a wide network of young people through its unique association with Young Farmers’ Clubs and will create placements through its longstanding relationships with UK farms. It has partnered with Askham Bryan College near York to run a pilot apprenticeship scheme in the North of England and with Plumpton College, Sussex, in the South. It is anticipated that these will soon be rolled out nationally, with delivery at local FE colleges that support an appropriate scheme. Apprenticeships will be offered across a broad spectrum of potential career paths in the rural business sector.

HOPS Operations Director Glyn Smith said: “HOPS is in the unique position of having direct contact with a large number of young people through our relationship with the National Federation of Young Farmers’ Clubs. After operating the SAWS scheme for the Home Office we are experienced at delivering a fantastic service for young people in the rural community. The benefit of the scheme is that it’s open to all, not just young farmers - anyone wishing to enter the agri-business sector is welcome. With a widening age gap between established farm workers and new entrants, we are delighted to be in a position to help rejuvenate the sector.”
Legro welcomes new employees

Legro is expanding internationally and has appointed an International Sales Manager.

Brenda van Diejen has many years of experience in horticulture, and the international knowledge that she gained at the Greenery and during her work in the ornamental plant sector have given Brenda an intimate understanding of the international market. She now plans to pave the way internationally for Legro.

The sale of coir products is steadily increasing and the company has promoted one of its experts to be specifically responsible for the import, export and production of coir; Pieter Jan Lourens has been appointed International Coir Product Manager. Coir products call for specific expertise, as does its import and export. In his new role Pieter is responsible for ensuring that coir supplied is of the best possible quality and for coordinating the company’s import and export activities. Legro guarantees high quality by managing every aspect of production. The company supplies its own coir using its own staff, both within and outside of the Netherlands.

Solufeed strengthens marketing team with two new appointments

With specialist fertiliser supplier Solufeed being awarded the UK marketing rights for the Plant Health Care (PHC) range of horticultural products, they have strengthened their sales and marketing team with two new appointments.

Jack Holden and Antonia Walker will boost the UK technical sales support team. Both will be based at the company’s West Sussex head office. Jack (21), who has a degree in business management, since joining the company has already visited growers and is looking forward to engaging with the company’s key accounts. With an agricultural background and degree in agriculture, Antonia has experience of working in the industry and is looking forward to working with growers across the full range of crops.
Vending machines for direct-to-the-public sales of fresh produce

As well as vending machines that dispense drinks, confectionery, crisps, sandwiches, pastries etc, machines are available that sell flowers, bread, DVDs, pizzas, chips or even baked potatoes. Now, across several North European countries, as well as North America, there are vending machines for fresh fruit and vegetables.

This is a far cry from the little wooden stand with its wilting produce at the side of the road with an honesty box that we saw in the past. Unfortunately, such boxes have proved far too tempting for some of our fellow citizens, so the availability of fresh produce in this way is declining.

Modern vending machines provide 24-hour availability for the public, low staffing costs, and a useful secondary income stream. Refrigerated machines are available to handle temperature-sensitive soft fruit. As well as on the edge of farmland near a handy lay-by, many such machines in Europe are sited in car parks, filling stations, adjacent to bottle banks or near small local shops. For example, a small Belgian company – VeGeFruit – operates four machines in its local area of Brabant in addition to a delivery service for fresh fruit to offices and institutions in this area. Company owner Bjorn de Schoenmaeker said: “Initially people viewed the fruit inside a cooled vending machine suspiciously, but they are beginning to accept it. It’s difficult to start such a venture and to find the best locations, but when you see that it works, it’s wonderful. People look for what they want, insert money and the ‘window’ automatically slides open. The produce I supply is fresher than in the supermarkets. I don’t know my customers so the produce has to be good enough that they will come back again. I check the machines regularly and fill them when necessary. I intend to add one new machine each year.”

These machines work well and the writer of this report knows of a vending machine in the car park of a TGV railway station near Tours in France which dispenses potatoes and other vegetables such as carrots, onions and cabbages very efficiently. Two Belgian companies have used their experience of modern vending technology to produce machines for this market. One, WDM, guarantees their machines for two years, claims they are strong and weatherproof and provides advertising material to attract customers. Another, Inagra, has machines with adjustable handling equipment with as many as 24 compartments. These machines can be made with insulated panels, automatic ventilation or refrigeration.

The increasing demand for fresh local produce presents an opportunity to gain some useful direct sales by the use of an attractive machine sited in a place convenient for the public.

Teagasc National Berry Seminar

The Teagasc National Berry Seminar and Trade Show, which took place in Carlow, Ireland on 1 May, heard how further growth in the Irish berry sector is expected. Dr Eamonn Kehoe of Teagasc said that the Irish berry sector continues to be one of the most challenging, rewarding and profitable sectors of Irish horticulture. He stated that protected strawberry production continues to be the mainstay of the berry industry in Ireland. The fresh strawberry industry, in particular, continues to grow each year and consumers are now eating €37 million worth of these berries every year.

The seminar was organised by Teagasc in association with the Irish Soft Fruit Growers Association (ISFGA) and Bord Bia. Michal Sławski from Bord Bia outlined how total fruit volume sales in Ireland are growing. The value of both blueberry and raspberry sales has been increasing.

The latest research and development taking place in Teagasc for the soft fruit sector was outlined as well as an update on the integrated pest management of crops.

The proceedings from the event are available at www.teagasc.ie/publications

Mr Gary McCarthy, Vice Chairman ISFGA Naas with Mr Paddy Browne, Head of Crops, Environment and Land Use Research Programme, Teagasc; Dr Eamon Kehoe, Teagasc, Wexford and Dr Jim O’Mahony, Head of Tillage Crops and Horticulture, Teagasc at the Teagasc National Berry Seminar at the Woodford Dolmen Hotel, Carlow.
New names at East Malling Research

With changes abounding at East Malling Research (EMR), The Fruit Grower is taking a look at the new names arriving at the world famous research station in Kent. These new arrivals are part of EMR Chief Executive Professor Peter Gregory’s plans to revitalise the site and become recognised as the pre-eminent research institute in the UK for perennial and clonally propagated crops.

Andrew Armitage

Dr Andrew Armitage was appointed at EMR in December 2013. He is working as a bio-informatician in EMR’s Genetics and Crop Improvement programme, in Dr Richard Harrison’s group. Andrew recently completed his PhD at Warwick Crop Centre (University of Warwick) in plant pathology. His current work at EMR involves developing and using computer-based tools to analyse whole-genome data from plants and their associated diseases.

Andrew’s route into plant pathology began when studying ecology as an undergraduate at Cardiff University, where an interest in ecosystem interactions and population biology was sparked. After establishing a comprehensive background in classical ecology he felt that molecular biology offered interesting new tools to study the environment. He pursued these interests through undertaking a Masters course at Cardiff, which specifically aimed to give a broad understanding of molecular biology. This course taught the latest techniques being put to use across all biological disciplines, not just in ecology but also in cancer biology and neuroscience. He believes that the breadth of his education has been important - reciting a saying used by one of his mentors: “a jack of all trades, a master of ecology”.

Andrew’s PhD was on Alternaria black spot, a fungal leaf spot disease common in Asia and the Americas, affecting a range of crops including apple, pear and strawberry. Specific diagnostic assays need to be developed in order to prevent the spread of these diseases to Europe. Andrew’s work on the evolutionary history of these fungi is assisting partners at the Food and Environmental Research Agency (FERA) to identify these pathogens and implement better control strategies. Part of this work involved sequencing the genomes of twelve fungal isolates. Current analysis of this genome sequence data is giving a better understanding of which genes control pathogenicity and how they evolved.

Performing research that has an applied output is very important to Andrew and is what drew him to EMR. “East Malling is in a unique position where it can build on research established in model systems, taking advanced techniques and putting them to applied use in non-model plants. Both the advanced science performed at EMR and its links with growers are very important to me”.

The translation of pure science to applied science is highlighted in Andrew’s current BBSRC and industry funded project “Improving disease resistance in strawberry”. As part of this he is performing whole-genome sequencing of strawberry pathogens (Phytophthora sp.) and their strawberry hosts. This genome data can be used to predict potential virulence genes in the pathogen and potential resistance genes in the host. These lists of genes are handed to colleagues in the laboratory who work to confirm which resistance gene protects a plant against which virulence gene.

Andrew hopes that his work will have broader application than just between Phytophthora diseases and strawberry, “If we can develop a set of computing tools that identify virulence and resistance genes, then we can use them on new genome sequence data as it becomes available, including different sets of crops and diseases”.

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EMRA/HDC Tree Fruit Day – A technical update on tree fruit research

Dr David Pennell reports

The EMRA/HDC Tree Fruit Day held at East Malling in April, focused on some of the projects from the portfolio of work commissioned by HDC over recent years.

In HDC Knowledge Transfer Manager Scott Raffle’s ‘tour de force’ providing a roundup of HDC-commissioned work at the start of the day, you couldn’t help being struck by the immediate relevance that the EAMU programme has had on the businesses of tree fruit growers. The impressive list of EAMUs has included Switch (blossom wilt and brown rot on stone fruit), Steward (Light Brown Apple Moth on stone fruit), Roundup Biactive (weed control in tree fruit), SmartFresh (plum storage), Serenade ASO (Botrytis on tree fruit), Phantom (aphids on plums), Berelex (cherries), Sequel (red spider on plums) and Fubol Gold WG (Phytophthora on apples).

Scott reported that a number of new projects were starting in 2014: looking at nitrogen use in high density orchards; improving management of bacterial canker in stone fruits; increasing hoverfly populations in orchards; controlling red spider mite in protected cherries and the relationship between dry matter and fruit quality. Other new work will include flavour optimisation in Gala, safe spraying programmes for earwigs, and products for Nectria control in apples.

Fruit Walls

Orchard management systems are always an interesting discussion point among fruit growers, with the trend towards more intensive systems being relentless. The speed of recent moves towards fruit walls throughout Europe has been amazing, considering that the approach was pioneered in France back in the 1980s. Like any new approach, there is a lot to learn about how best the system can be managed and about the effects different climates have.

HDC has commissioned FAST to look at the system, focusing on the effects of the timing of pruning and the type of tree used to establish the system. Tim Biddlecombe, FAST’s Managing Director, outlined initial work in what is long-term project. In the trial, five tree types have been used to establish fruit walls: ‘knip’ trees - the popular Dutch form, ‘grow-through’ - a maiden allowed to grow on, ‘maiden’, ‘eight months from bench-grafting’ and ‘twin-stem’ trees. For pruning, five timings are being compared: winter, pink bud, six-leaf, nine-leaf and 12-leaf stage, on main extension growth. In addition to growth effects, the trial will track any effects of treatments on yield and maturity, fruit size, fruit quality (colour, sugar levels and firmness), together with monitoring leaf and fruit nutrients.

The pruning focuses on mechanical pruning, and it has been noted that continued use of this approach can lead to overcrowded branches, strong upright branches, low hanging branches and ‘antlers’ developing in the tops of trees. These issues can be addressed by corrective hand-pruning, which Tim considers to be essential if light interception is not to be seriously impeded.

So far, results of leaf analysis show a reduction in nitrogen from 2.50% to 2.03% in cuts at the six-leaf & nine-leaf stages. Magnesium is also reduced from 0.21% to 0.15%. Calcium and manganese were lowest in trees pruned at the six-leaf stage. Boron was lower in winter and pink-bud pruned trees. Fruit mineral nutrient content does not seem to be significantly affected. The later the pruning, the better the growth is controlled. A late summer cut can reduce yield and, indeed, in some seasons the 12-leaf stage may not be reached if growth slows down in response to weather conditions. Fruit size is very responsive to fruit numbers on the tree. There was less effect from late cuts on sugar levels and firmness in 2013 than in 2012. The inter-tree corrective pruning gives positive effects in terms of fruit size and colour, presumably in response to the higher light levels.

Controlling fruit rots in storage

Storage rots in apples and pears continue to sap profit margins in fruit growing due to lost fruit, increased storage and grading costs, and greater risk of rejection of fruit by retailers.

Dr Robert Saville reported the latest results from the monitoring of stored samples of apples that EMR has undertaken over a number of years, to determine the rots currently causing most problems. Using historic data from ‘rot surveys’ in the 1980s, 1990s and from 2008 to 2013, a comprehensive data bank provides a detailed indicator of rot types, and varietal influence. Cox, as one might expect, has a high average loss of 2.8%. Bramley loss is also high with an average of 3.9%. Newer varieties fare better: Gala at 1.2% and Jazz at 0.5% are well below the older cultivars. However,
this may be influenced by the higher storage temperatures used for Cox and Bramley.

Brown rot is one of the main causes of losses, Nectria is also important in some years and, from some orchards, Phytophthora is important in wet years. Robert reported that Gleosporium is showing signs of increasing incidence, with other rots found including Mucor, Penicillium and Botrytis, but not at a high incidence. The high losses in the 2013/14 storage season were probably due to the wet growing season and the late harvest in 2013.

Devised by the HDC in consultation with growers and researchers, the SCEPTRE (Sustainable Crop & Environment Protection – Targeted Research for Edibles) project aims to address key gaps in crop production, especially those arising from the loss of pesticides due to changing EU legislation. SCEPTRE aims to deliver applied research to help secure label and off-label approvals for new pesticides and biopesticides, and to develop sustainable IPM programmes for use on edible crops. Three cross-sector teams of crop protection specialists are focusing on the pest, disease and weed problems which have the greatest financial impact on the profitability of crop production and where the likelihood of achieving a solution is good.

Dr Angela Berrie outlined some of the work on apples and pears being undertaken within the project. Apple mildew is still a difficult disease to control in many orchards; a contributory factor being the limited range of available fungicides. The main objective is to identify new fungicides and biofungicides.

Throughout 2013 a range of fungicides was trialled in several programmes. All treatments reduced the incidence of mildewed leaves in comparison to a near 100% infection on untreated plots, results varying according to treatment. Programme 1 (P1) Cosine plus two coded fungicide products, and Programme 5 - two coded fungicide products and two experimental products, also giving good results. Biofungicide programmes in 2013 were evaluated in pot experiments, with the best products from a 2012 trial included. The most effective programmes were P1 (Systhane), P2 (Kumulus) and P7 (fungicide plus biofungicide). In 2014 trial programmes of products in combination with fungicides were further evaluated in an orchard situation.

Pears suffered from Botrytis rot in store, which is well controlled by Rovral but, Angela explained, biofungicides can be generally effective in controlling such wound pathogens; hence the work within SCEPTRE to identify any that could be useful. In 2012 high rates of two biofungicide products gave better control of Botrytis, but a third did not reduce rots. Nexy (Candida olephila) also gave poor control, despite performing well in previous trials. In 2013 treated fruit was stored in air and in controlled atmosphere (CA). A coded product and Nexy gave best results, although Nexy did not reduce rots in CA storage. Serenade was as effective in air as in CA stores.

In a LINK project investigating biological control of pests and diseases in plum and cherry, researchers have been studying indigenous micro-organisms that may give control of brown rot caused by Monilia laxa. Two bacteria have been identified and have given promising results. The research also found that winter and spring applications of fungicide or biocontrol agents reduced sporulation from mummified fruits.
Orchard Ecology

Stone fruit

Increasingly, pest control in orchards is employing detailed knowledge of the insect pest lifecycle, and interactions with its environment and other insects, to manage crop damage. Prof. Jerry Cross reported on work in a LINK project developing a novel biocontrol method for aphid pests of plum and cherry, which is based on exploiting the ant/aphid mutualism which exists in orchards. Jerry explained how using ants as carriers of entomopathogenic fungi (EPF) could disrupt ant/aphid mutualism.

Mutualism between ants and aphids benefits ants, giving them access to honeydew excreted by aphids and access to sugars, free amino-acids, amides, proteins, minerals and B-vitamins. The aphid is also an easily available ‘farmed’ protein source. Aphids benefit from a soothing and sanitary effect from the ants and are also defended from predators and parasitoids, under the ants’ protection. The ants also provide transport for the aphids to new shoots and feeding areas. By disrupting this mutualism it is possible to remove the ants’ protection and make the aphids more susceptible to predators.

Methods of disturbing this mutualism are based on excluding ants from trees or encouraging alternative behaviour. Sticky tapes placed on the tree trunk in April can prevent ants accessing trees, but is time-consuming and also affects other insects such as earwigs. Providing ants with food such as sucrose solution, placed on the trunk in April, bottle feeders and broadcast baits, greatly reduces ant numbers in the tree. Feeders are impractical on a large scale and baits offer better prospects.

Alternatively, the use of grass root aphids to deflect ant interest away from aphids in trees is another possible strategy. Grass in the herbicide strips reduces the numbers of ants going up the trees. After the removal of ant protection, aphids in trees are rapidly attacked and consumed by predators. Studies have demonstrated that there are three periods of predator activity with different predators operating in each. The key period is from before blossom for a period of four to six weeks.

Autumn control of plum and cherry pests was another element in the LINK project. It was shown that an application of Calypso in late September to mid October reduced the number of infected shoots and leaves, and in the following spring reduced infestation by Cherry Aphid, Mealy Plum Aphid and Plum Leaf Curling Aphid.

For integrated control of Plum Fruit Moth, Jerry Cross outlined the work with sex pheromone disruption, the attractant value of volatiles from ripening fruit and autumn applications of entomopathogenic nematodes. Checkmate OFM-XL and OFM-F are formulations of Oriental Fruit Moth pheromones and gave consistently less fruit damage by Plum Fruit Moth than insecticide on untreated plots in trials and could be an effective control method, provided that populations are low to moderate. Volatiles from ripening fruit were tested, but resulted in no Plum Fruit Moth being caught in traps. Autumn sprays of nematodes (Nemasys C) applied in October resulted in reduced numbers of Plum Fruit Moth in orchards but, to be effective, the nematodes need constant surface wetness for 24 hours and temperatures above 14C.

The research team has assessed Exosex LBAM tab for mating disruption, and demonstrated reduced trap catches of Light Brown Apple Moth on cherry over the season. For Summer Fruit Tortrix in cherry, Capex (granulovirus AoGV) seems to offer long-term population suppression, with two applications per generation required. The larvae ingest the virus with young larvae being more susceptible than late instar larvae. It is hoped that Capex will be approved for use in the UK this year.

The implications of this work for improving integrated pest and disease management programmes for orchards are substantial. Autumn aphicide treatments offer good control when linked to ant disruption using sugar feeders. Several sprays of Capex will be needed for Summer Fruit Tortrix and pheromone mating disruption can provide an effective control for Plum Fruit Moth. Whilst careful management of these approaches is required, zero residues, or at least greatly reduced residues, are possible.

Earwigs

Earwigs are hugely beneficial in orchards as, with voracious appetites, they are nocturnal predators of aphids, sucker nymphs and eggs, providing ants with food such as sucrose solution, placed on the trunk in April, bottle feeders and broadcast baits, greatly reduces ant numbers in the tree. Feeders are impractical on a large scale and baits offer better prospects.
caterpillars, codling eggs, larvae, pupae etc. There are large variations in earwig populations and are low or even absent in many orchards. Dr Michelle Fountain presented results of work towards the development of spray programmes that are safe for earwigs in apple and pear orchards.

Initial work did not include mixtures of crop protection products, but showed a trend for chlorpyrifos to reduce early adult numbers, whilst thiacloprid reduced nymphs. Early-season and day-time applications may reduce the harmfulness of some insecticides, but this may also depend on conditions and application method.

In 2013, trials compared an earwig-compatible programme and a standard programme in two commercial orchards. Chlorpyrifos was omitted in the earwig compatible programme and methoxyfenozide (Runner) was substitute with Bacillus thuringiensis (DiPel). One farm started with a very high population of earwigs, the other very low. The final assessment on each farm showed a considerable increase in earwig populations on both farms, but by the end of August the well-populated farm from the initial assessment had very high numbers of earwigs, irrespective of the spray programme followed.

Earwig-compatible programmes allowed the buildup of earwig numbers during the season in both situations. Encouraging earwigs in orchards is worthwhile, and to get an idea of the resident population in an orchard, use bottle refuges and check them for earwigs after dusk on warm summer evenings. Avoid using pesticides which are harmful to earwigs at key times of the year - in spring when nesting females are in trees and from May onward’s when young earwigs are present in trees. Also avoid soil disturbance in winter as it will destroy over-wintering nests.

**Rhyncites**

Apple Fruit Rhyncites Weevil has caused few problems in the past, but over recent years has been an increasing problem. It is a common pest of apple and pear and has wild hosts. The adults feed on young fruitlets, buds, shoots and flowers, and eggs are laid individually in fruitlets. Losses caused by Rhyncites can be between 1% and 5% in apple orchards. Control with thiacloprid (Calypso) during or after flowering is an effective treatment, but there are currently no reliable monitoring methods and a specific monitoring trap would be a valuable tool. Research work described by Bethan Shaw aimed to determine whether sexual attraction occurs between male and female weevils, which sex is attractive and the time at which attraction occurs. The work also aimed to determine whether any attractant chemical compounds can readily be detected or identified.

Males and females were found to be able to identify each other. Mating and egg laying take place in unison as the male mounts the female during the egg laying. The weevils then drill holes into the stem of the fruitlet, severing the stem and resulting in most fruitlets falling to the ground, allowing the weevil lifecycle to be completed. This fruitlet drop can occur at about June-drop time and some of the crop damage can consequently be missed, being put down to June-drop or tree stress. Eggs or larvae are not seen in fruits, as the infected fruit is severed. It was also found that wild hosts are not an essential source of infestation.

Work is continuing to see if pheromones can be identified. At present the only real means of monitoring weevil levels is by ‘beating and catching’ in the orchard.
English Apples and Pears – top fruit marketing update

The latter part of May marked the end of the sales of dessert apples from the 2013 harvest, giving Adrian Barlow, CEO of English Apples and Pears Ltd (EAP) the opportunity to summarise the figures and make the first comments on predictions for the coming harvest.

The 2014 harvest is likely to be at least three weeks earlier. Overall reports from all areas suggest a pretty reasonable crop, though slightly patchy. The blossom period was extended and there has been quite a run off recently. It is too early for size or tonnage predictions, but Cox will be down on last year, Gala up, and Braeburn down, due to the biennialism from which this variety suffers. The tonnage of the new varieties will continue to grow as more orchards come into full production. With the recent warm wet weather scab is a major problem at present, and also canker. Some trees are alive but probably existing on stored energy due to lost root systems in the very wet winter, so tree losses are expected later. When the drop ceases, and if there is reasonable weather, Adrian is hopeful for good results and a reasonable, but not great, crop.

English dessert apple sales for the 2013/14 marketing season

<table>
<thead>
<tr>
<th>Variety</th>
<th>Total Class 1 sales to multiple retailers (tonnes)</th>
<th>% increase over 2012/13 crop</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cox</td>
<td>21,300</td>
<td>28.5%</td>
</tr>
<tr>
<td>Gala</td>
<td>32,000</td>
<td>5.0%</td>
</tr>
<tr>
<td>Braeburn</td>
<td>17,000</td>
<td>79.0%</td>
</tr>
<tr>
<td>Other desserts</td>
<td>19,000</td>
<td>43.0%</td>
</tr>
<tr>
<td>Total dessert apples</td>
<td>70,300</td>
<td>24.5%</td>
</tr>
</tbody>
</table>

The very poor 2012 harvest means that Cox’s year-on-year change is accentuated. The Gala crop would have been even higher if the better weather had started earlier last year. Braeburn year-on-year is also affected by both biennialism and the abysmally poor 2012 weather. The growth in production coming from orchards of the new varieties continues to grow and some ‘new to the market’ varieties will be sold for the first time in the 2014-15 marketing season. Adrian Barlow comments that it is great to see the industry trialling new varieties – such a contrast to the situation in the 1990s.

Bramley sales and promotion

Bramley sales by mid-May were 13% down on the same period last year. Two consecutive seasons when the market was being warned that stocks were insufficient to meet demand, combined with the exceptionally late harvest in 2013, is considered to be the major reason for this downturn in sales. Turning the sales back up is difficult, but there are some encouraging signs, with stronger sales in April and early May.

The Bramley Campaign is doing everything to maximise sales this summer and prepare the way for the coming season’s crop.

TV Chef Richard Corrigan’s food was served at a recent luncheon for long-lead-time magazines that will hit the newsstands in September and October. On-line and social media are becoming ever more important. There has been tremendous change in the readership of magazines and newspapers in the last five years. For example, “Eat In” magazine had 120,000 readers in 2009 and has only 20,000 in 2014 and “BBC Good Food” magazine had 73,000 readers in 2009 and only 45,000 in 2014. It is important to be aware of these changes so that a campaign can be targeted in the right way and efforts made in the most appropriate direction. Concerns about readers using online browsers for their daily newspapers include: Do they actually turn the pages like a print version and see adverts, advertorial and PR messages? What are the right messages to make certain of reaching the target audience and which journalists are being read?

The Brammy Awards will be held again this July after a gap due to the poor crops. All suppliers have been urged to encourage their customers to enter and many organisations, manufacturers and catering service companies have been contacted to encourage entries.

EAP and Producer Organisations (POs)

EAP recently hosted a meeting of top fruit POs, in conjunction with the experts group, to discuss various legal issues arising from the new Commission Regulation 499/2014 setting out new conditions relating to the eligibility of POs and operating programmes. There was also much discussion of the supplementary framework guidance from the Rural Payments Authority (RPA) in relation to trees and perennials. Also discussed was the importance of good communication with the RPA’s personnel, DEFRA personnel and HM Inspectorate to ensure that there is clarity about production and marketing issues. It was felt that invitations to growers would be helpful and some have already been instigated. It is anticipated that the number of visits will increase so that people not familiar with the industry can gain a better understanding. EAP is well aware of the excellent work of the experts group and want to assist in any way they can. Another meeting will be arranged in six months.
BEST/NFU Blossom Walk at Griffin’s Farm, Sutton Valence, Kent

An excellent turnout of the Brenchley and East Sussex Fruit Growers (BEST) group and Goudhurst and Paddock Wood NFU members gathered at A. C. Goatham and Son’s Griffin’s Farm at Sutton Valence on 7 May for what was scheduled to be a Blossom Walk but, after a very late season in 2013, the vagaries of English weather prevailed with a very early season this year, and the event became an ‘early fruitlet’ walk instead. Organised jointly by BEST and the NFU this annual gathering is always an enjoyable event.

BEST Group Chairman Alan Wickham introduced Nigel Stewart, Goatham’s Technical Director, who was our host for the evening, assisted by Piotr Bukowski, Goatham’s Orchard Production Manager. A.C. Goatham has expanded rapidly over the last few years and now grows top fruit on 14 sites in Kent, with the new £9m Flanders Farm packing, storage and administration complex on the Hoo Peninsula at the heart of the expansion programme.

Nigel told his visitors that A.C. Goatham and Son acquired Griffin’s Farm in 2008. The farm extends to 40ha with 35ha of top fruit planted with Gala, Cox, Egremont Russet, Zari, a small area of Bramleys and Conference pears. The whole farm is in a countryside stewardship scheme which uses an Integrated Pest Management (IPM) plan, central to which is the minimal use of pesticides. By using intelligent grass and hedge management, the farm raises the number of beneficial insects and bees, and this policy also helps with fruit tree health.

A large reservoir on the farm is let to a local angling society, which confirms the excellent water quality with a good population of very healthy fish. The lake is filled by natural springs which flow down the hillside to the lake before being pumped back up to irrigation tanks at the top of the farm and distributed through the trickle irrigation network to all the orchards. This system also supplies nutrients to the orchards.

The farm was previously owned by David Boxall and has always had a reputation for growing Cox of high quality and excellent storage capability. Nigel Stewart commented that
Cox from Griffin’s Farm was the last to be marketed by A.C. Goatham in the 2013/14 season, finishing in late April and still in excellent condition. Sadly these trees are now past their best and will be part of this coming winter’s grubbing programme, along with Egremont Russet and Conference pears.

The first orchard on the tour of Griffin’s Farm was a young Gala Schniga orchard close to the farm buildings and surrounding Griffin’s Farm house; home to Nigel and his family at the top of the escarpment with stunning views across the Weald of Kent.

This young Gala orchard covers an area of 11.5ha with a tree spacing of 3.5m x 1.0m and a target height of 3.5m. Planted in the winter of 2012/13 it will carry its first crop this year.

Discussing how much to leave on the trees after thinning, Piotr Bukowski anticipated leaving 30-40 apples per tree. Nigel commented that final fruit size was very important as the majority of fruit is marketed ‘by count’ in a polybag or flow-wrap format and fruit sizes above the optimum size simply increase the ‘giveaway’, to the detriment of financial return.

Commenting on pollination, Nigel said that previously the policy was to use a mixture of Malus pollinators - Professor Sprenger and Everest - but while Gala manages, Zari suffered from inadequate pollination due to the timing of the flowering of Malus and Zari. As Golden Delicious flowers at the same time as Zari, it seems prudent to rely on it as the main pollinator. Piotr said future orchards would comprise 10% Golden Delicious pollinators.

On the subject of Zari, pollination seems to be one of the reasons why the variety has not performed well at Griffin’s Farm.
Farm since the first meaningful yields in 2011. A combination of factors seems to have held Zari back from fully realising its potential. The tree is naturally vigorous and this, along with a lack of available pollination, is felt to be the reason behind the less than optimum yields in 2012 and 2013. Nigel anticipates that improving the efficiency of pollination, and the use of the growth regulator Regalis, will bring about a more balanced yield.

Without doubt, Zari offers a fantastic eating experience and, although originally anticipated to replace Discovery, Nigel said it is now clear that Zari falls naturally about two weeks later than Discovery on a ‘same site’ basis. However, the variety is proving to store extremely well and this enables marketing across a much longer period than originally intended. There are now four blocks of Zari at Griffins totalling 6ha, all planted at 3.5m x 1m and will be kept to a height of 3m. The oldest block achieved 40 tonnes/ha in the third leaf.

On the bottom of the farm, a 4.8ha block of Gala Schniga planted in winter 2011/12 with a spacing of 3.5m x 1m, and Malus Professor Sprenger and Everest as pollinators, produced a crop of 13 tonnes/ha in its second leaf. In answer to a question from the visitors, Nigel said that anticipated yields for Gala and Zari when fully mature are 60 tonnes/ha for Gala and 50 tonnes/ha for Zari. Target tree height for Gala is 3.5m and 3m for Zari.

All of the Cox, which amounts to 9ha, are in three-row-bed systems and are achieving about 24 tonnes/ha with Egremont Russet for pollination. It is planned to replace this in the winter of 2015/2016 with Zari. A small area of Bramley covering just 0.34ha will also be replaced with Zari.

Completing the reconstruction at Griffin’s Farm, the old 2ha block of Conference pears situated at the very bottom of the farm, is planned for replacement with Gala Schniga or Royal Beaut, also in winter 2015/2016. Gala Royal Beaut is a mutant of Gala found by Robert Zulch at Wakkerstroom, Ceres, South Africa. The variety is registered by Belgian nurseryman Johan Nicolai as Gala Royal Beaut Proselect®.

Once grubbed, the orchards will be given a ‘fallow’ year to rest and to allow efficient preparation of the soil before new planting takes place in the winter of 2015/16. The replacement varieties of Gala and Zari will rationalise the production systems at Griffins with future production concentrated entirely on Zari and Gala. All new trees will be ‘Knip’ trees.

Asked about scab control, Piotr Bukowski said that copper, Dithianon and Captan were used on a seven day programme. For mildew control the following programme is followed: Topas, Kindred (before flowering), Systhane-Stroby (twice) after flowering, follow by Cosine (twice) and finally Nimrod.
Co-operative Farms’ investment in East Kent poised to deliver unprecedented growth

writes Malcolm Withnall

F ollowing the acquisition of the tenancy to the Highland Investment Company Ltd’s farms in East Kent, Farmcare, the agricultural arm of the Co-operative Group, invested in a significant development programme to establish a major new production base in the east of the country to complement their existing, more mature orchard establishment at Tillingston in Herefordshire.

We spoke to Farm Manager, Sean Finlayson, in the week when members of the East Kent Fruit Society (EKFS) enjoyed a superb Blossom Walk at Highland Court Farm (now Bridge Farm), culminating in a barbecue at the splendid cricket pavilion at the farm. “We always hoped that 2014 would be a ‘showcase’ year, and we were pleased to host EKFS members to share where we were in our initial Five Year Plan”, explained Sean.

The Highland Court Farm tenancy totals 264ha across East Kent, and embraces Bridge Farm at Bridge and Upper Horton, both near Canterbury, and Paramour, Felderland and Worth Hill Farms near Sandwich. Bridge Farm has 1800 tonnes of CA storage and 700 tonnes of air storage. The tenancy comprises 122.4ha of apples, 14.1ha of pears and 74.4ha of blackcurrants as the core enterprises, with 7.3ha of plums, 4.7ha cherries, 2.9ha walnuts, 1.8ha of apricots and 9.0ha of pick-your-own at Sandwich, widening the portfolio of crops grown.

The main thrust of the Farmcare investment has been the establishment of 71ha of new apple orchards at Bridge and Horton, to bring what was a traditional Cox-growing business into a new market place. State-of-the-art planting systems and varieties have been employed, focusing initially on Horton and Bridge Farms, and, under Sean Finlayson’s management, new production systems developed to provide the most efficient use of capital.

“Like most others, we have invested in Gala and Braeburn - projected to represent 65% of the planted areas by 2019, and both are now well established as high performance varieties,” explained Sean. “Parallel to these new varieties we have developed new intensive fruit wall systems, and are developing systems of production that maximise the use of up-to-date machinery”.

Sean explained that the central strategy to a modern fruit growing business has to be to minimize the production cost per kg. 50 tonnes/ha is now regarded as an achievable yield target, whilst achieving the highest Class 1 grade-out in a range of fruit sizes commanding favourable prices across the longest season possible.

“We have placed emphasis on labour-intensive areas of production, including pruning, harvesting and spraying, and have focused on adding value at the front-end by investing in irrigation and fertigation systems,” he added. “We have gained significant mastery of these areas, and will turn our attention to fruit thinning in the near future”.

To address the costs of pruning, and reflecting the diminished supply of local, skilled labour, Bridge Farm has gained experience using cutting blades to prune and shape fruit walls in both winter and summer. “With a £500/ha benchmark for hand-pruning, we have combined machine pruning at £30/ha with supplementary hand-pruning at £130/ha, to make significant gains,” he said.

“We favour machine-pruning around the green cluster stage, and are prepared to use Regalis growth regulator to balance tree growth if needed, although our soils are not naturally strong,” explained Sean. “We are in the process of converting our earliest plantings to fruit walls, having planted specific fruit wall systems in 2011. We have now included varieties such as Bramley and Russet, both of which appear to be responsive”.

Sean commented that they are modelling a 60cm row width, and developing a fairly columnar tree profile. “Our walls are around 3.2m tall,” he said.

Consistent with pursuing high volume, high value, yield from their orchard plantings, the company has invested in a
borehole at Bridge Farm and is rapidly developing orchard systems with integral irrigation/fertigation. Sean paid tribute to a number of agronomists who have made invaluable contributions to the development of the farm to date, including Paul Bennett and Leon Jahae of Agrovista, Leon being central to the farms fertigation scheduling.

“I would also like to express appreciation to the Nicolai and Fleuren Nurseries in Europe who, between them, have developed a tree specification tailored for our needs, contributing greatly to the success of our recent plantings,” said Sean. “It is they who have introduced us to the new variety, Sweetie, which we have introduced into our portfolio and projected to be some 7% of the planted area by 2019. The variety is a Gala x Braeburn cross from New Zealand with a very high Brix value, and supplied via Rene Nicolai in Belgium.”

Commenting on their crop protection programmes guided by Agrovista, Sean referred to their Munckhof and Triprop tower sprayers, which support their Fantini orchard sprayers. “We are investigating three-row sprayers, but at the moment they are falling short in our ‘return on invested capital’ calculations,” he said. “In the longer term we foresee using three-row canopy sprayers for further efficiency and economy, as well as for environmental friendliness.”

One area under scrutiny for effective control was harvesting costs, but more importantly, matching the projected increase in bin numbers in the near future with picker numbers. “We are very much taken with the efficiencies gained from Pluk-O-Trac systems,” said Sean. “We have evaluated trains, but find that the Pluk-O-Trac system reduces harvest costs. Our recent benchmarks show 4p/kg, as against 5p/kg using trains, plus the potential improvements to fruit quality delivered to the grader”.

Sean explained that the Highland Court Farm tenancy had recently become a member of Wye Fruits Ltd, Ledbury, Herefordshire, linking to the existing membership of the Co-operative Group’s Tillington Fruit Farm and giving the business a huge logistical benefit and capital savings on investments in bulk bins as the production volumes rapidly increase around the farms - projected to double within three years to over 4,000 tonnes or 12,000 bins.

“Although the initial Five Year Plan is almost complete, I am confident that investments will continue to be made to take full advantage of the market place,” said Sean. “But to be successful we have to drive down all areas of production cost, maximising the substitution of labour with machinery to find the highest levels of efficiency at all times. However, at the same time we have to be very focused on generating the highest volumes of the right sizes and grades of fruit for our customers using the quality of land and personnel available to us, and employing the highest levels of technology and fruit growing practice”.

NOTE: up to 50% EU premium grant for growers in subsidy participating POs

HAIL HITS HARD! INSURANCE CAN SOFTEN THE BLOW

New and improved terms for 2014
Research Briefing

by Dr David Pennell

Natural elicitors of plant defensive response in strawberry

Natural substances such as elicitors of plant defensive response have become a promising option for the effective management of plant diseases and are a prerequisite for sustainable and ecological agriculture. The recognition of diverse elicitors, effectors and modulators, by specific and non-specific plant receptors, activates signalling cascades which eventually lead to gene expression and defence responses. Elicited or ‘primed’ plants display either faster or stronger activation, or both, of the various cellular defence responses that are induced following an attack by pathogens or insects, or in response to abiotic stress.

The aim of this work has been to develop new elicitor compounds from natural vegetal substrates, and predict their effectiveness in the field, by using robust molecular techniques and appropriate biomarkers of plant defence. Cells of Chandler strawberries were used to test the capability of new natural elicitors by a Spanish research team (*Journal of Berry Research*).

The susceptibility of strawberry plants treated with the new elicitor to *Colletotrichum acutatum* was tested under controlled greenhouse conditions. Collaborating with a commercial company, the researchers have produced new natural compounds that can act as elicitors. The elicitor activity of a new compound (EH) was compared with the commercial product BROTOMAX®. Both activated plant-defence-related genes in cell suspension cultures and increased the resistance of strawberry Camarosa to *Colletotrichum acutatum* plant infections.

The new natural bio-elicitors can be produced using low-cost procedures based on the fermentation of natural substrates derived from plants. The use of suitable, sensitive, appropriate and robust molecular bio-markers also provides an excellent tool to predict the effectiveness in the field of natural compounds with potential eliciting ability, which may be conveniently exploited as bio-inducers of plant defence response in strawberry and in many other important crops.

First report of resistance to fludioxonil in *Botrytis cinerea*, in USA strawberries

*Botrytis cinerea* is one of the most economically important pathogenic fungi affecting strawberry crops, with control dependant on site-specific fungicides such as fludioxonil. This fungicide is currently registered in the USA in combination with cyprodinil as Switch 62.5WG, for Botrytis control in small fruit.

In June 2013 strawberries with symptoms resembling Botrytis were observed, despite the application of Switch, in Federalsburg, Maryland and at another location near Chesnee, South Carolina. Scientists at Clemson University obtained isolates from fruits at each location and confirmed them to be *B. cinerea* (*Plant Disease*).

In sensitivity tests to fludioxonil (Scholar SC, 20.4% [v/v] active ingredient), eight of the 20 isolates (six from Maryland...
and two from South Carolina) were moderately resistant to fludioxonil, that is, they grew on medium amended with 0.1μg/ml fludioxonil and showed residual growth at 10μg/ml. Commercially-grown strawberries were sprayed with either water or 2.5ml per litre of Scholar SC to run-off and then inoculated with Botrytis of either two sensitive or four resistant isolates (two isolates from Maryland and two isolates from South Carolina). The sensitive isolates developed Botrytis symptoms on non-treated fruit but not on Scholar SC-treated fruit. The resistant isolates developed Botrytis on both - the water-treated control and the fungicide-treated fruit.

This seems to be the first report of fludioxonil resistance in *B. cinerea* from strawberry crops in Maryland and South Carolina. Resistance to fludioxonil is still rare in the USA, with the only other case being in isolates from a Virginia strawberry crop.

**Sweet cherry cold storage in CA**

Most sweet cherries produced in the US Pacific Northwest are in storage and transit for over three weeks. Researchers at Oregon State University studied the effects of sweet cherry storage, in various O2 and CO2 concentrations, on respiration, and the efficacy of modified atmosphere packaging (MAP) in extending shelf-life in Bing and Sweetheart cherries (*Postharvest Biology and Technology*).

Cherries were packaged at 8kg per box, in five different commercial MAP box liners and a standard macro-perforated polyethylene box liner and stored at 0C for six weeks. MAP liners that equilibrated with atmospheres of 1.8-8.0% O2 and 7.3-10.3% CO2 reduced the fruit respiration rate, and maintained higher titratable acidity and flavour compared to control fruit after four and six weeks of cold storage. In contrast, MAP liners that equilibrated with atmospheres of 9.9-14.4% O2 and 5.7-12.9% CO2 had little effect on inhibiting respiration rate and titratable acidity loss, or maintaining flavour during cold storage. All five MAP liners maintained higher fruit firmness compared to control fruit after six weeks of cold storage.

In conclusion, storage atmospheres of 1.8-14.4% O2 and 5.7-12.9% CO2, generated by commercial MAP, maintained higher fruit firmness; but only the MAP with lower O2 permeability (equilibrated at 1.8-8.0% O2) maintained the flavour of sweet cherries compared to the standard macro-perforated liners at 0C. MAP with appropriate gas permeability (equilibrated at 5-8% O2 at 0C) may be suitable for commercial application, to maintain flavour without damaging the fruit through fermentation, even if temperature fluctuations, common in commercial storage and shipping, do occur.
Kirkland displays machinery range at demonstration event

Malcolm Withnall reports

Specialist horticultural machinery suppliers, Kirkland UK, based in East Kent, staged a two-day machinery demonstration in May at Howt Green Farm, Bobbing, courtesy of A.C. Goatham & Son. Renowned for supplying and servicing machinery across the industry, Kirkland assembled its orchard equipment and expertise to engage with growers and managers, reflecting the sizeable investments in new orchards and post-harvest resources being made.

With its sister company Agricare also in attendance, Kirkland was able to display the comprehensive range of products available to growers, including those many items essential to modern fruit growing.

With many growers investing in three or four metre high fruit walls, the FAMA CKP250 hydraulically-driven mechanical pruning rig is available to counter the rapidly reducing availability of skilled pruning labour.

Kirkland’s Karl Glass explained, “Growers add an extra hydraulic tank to the rig for efficient response to the hydraulic controls, and generally it is considered to be a safe rig to operate”. Capable of utilising 2.1m, 2.5m or 3.0m vertical reciprocating blades, the unit is sufficiently versatile as to be able to trim hedges and windbreaks as well as fruit walls. However with sophisticated hydraulic controls and a range of cutting heads mounted on support bars, a range of two, three or four cutter heads offer versatile pruning techniques with multi-positional tilting, easily controlled from an electronic joystick.

The machine costs around £10,000 and, depending on the pruning system employed and the tree system adopted, it was reported that one to two hectares could be pruned per day. One visitor commented that “in using the machine, specific corridors of usage had to be identified to avoid clashing with other essential operations” and, for this reason, the machine is used predominantly in the post-harvest period.

Another interesting machine available to growers with sizeable areas of fruit walls is the Italian-made Frumaco Technofruit Harvester. This machine reflects earlier engineering developed in Holland to aid harvesting, and is sufficiently versatile to be used in pruning and tree management throughout the year. The six-man operating team, with or without an in-field quality controller, has the capability to harvest six bins per hour, placing fruit directly onto ‘collecting arms’ close to the tree. With a 12-bin carrying capacity and a sophisticated bin-filling unit, the payback on this investment of about £50,000 is the improved grade-out of the harvested fruit, greatly reduced picker fatigue, and the potential to run the machine over shifts throughout the harvest period to extend the working day.

Kirkland’s Ivan Worsley added, “In addition to the Frumaco, we offer the Hercules orchard platform for orchard multi-tasking, the Orvin three-bin picking train and three-bin picking platform, and the Kirkland HD Train, to offer growers a range of options at harvest”.

Of particular interest to soft fruit growers with tunnel-grown tabletop or bed systems, and the ever-increasing number of wine producers in the UK, is the range of smaller, affordable Kilworth four-wheel-drive tractors.

Kilworth is based in Leicestershire and has a smaller Kilworth four-wheel-drive tractor range includes a reversible driving position.
considerable following in the amenity sectors of horticulture. Their BCS range of Invictus, Valiant and Volcan tractors combine superb traction with small size and central articulation, which can achieve remarkably tight turning circles, which can be so helpful in intensive orchards. With high quality Kubota and Lombardini diesel engines offering a range of power outputs from 25hp to 46hp, these modern tractors, equipped with cabs, are attractive in comparison to their bigger ‘agricultural cousins’.

There is considerable interest among growers in matching intensive single row and fruit wall systems to their spraying equipment. With so much of the target being in close proximity to the nozzles, it is possible for inefficiencies associated with deposition to occur. The Kirkland range of mast sprayers, with their cross-flow, tower delivery outlets, including the Duoprop and Triprop models, together with the Kirkland Tower Quatt sprayer, offered growers a range of delivery options to match the growing systems and crop protection procedures employed. Options to combine spraying and mowing operations are also available, with 2.0m to 2.2m mowing widths, and 2.5m to 3.7m tower heights giving maximum versatility.

These machines have tank sizes ranging from 1000 litres to 2000 litres and come with high quality Comet pumps and 18-20 nozzle fittings. The Kirkland Triprop sprayer is an industry leader, complying with all of today’s operational health and safety requirements.

Agricare’s Russell Gardiner explained the contribution of the company’s product range to the dessert apple, cider and vineyard sectors of the industry. “With so many hectares of intensive systems being established, including many post-and-wire systems for fruit walls, we are able to
supply trellis system components down to the smallest detail," said Russell. "Our range includes posts, wires, anchors, canes, clips and tree ties, and battery-powered pruning sets for orchard operatives. We also supply ground covers for berry growers, including anchoring pegs, and have developed a unique structure for supporting raspberries".

Top of the range is the Electrocoup F3010 secateur capable of between two and six days' work between charges and costing around £1390, depending on options selected. One visitor reported having purchased nine of these units, one for each of his pruning team. An electric safety glove can be provided to give maximum operator protection; and a range of larger cutting heads of up to 55mm is available.

Agricare also supplies the Castellari range of fixed or folding chromium-plated pruning saws, with blade lengths from 150mm to 300mm, along with a replacement blade service. The company also supplies the Spanish Bellota range of secateurs, in addition to the Felco range.

One item not displayed, but of potentially great interest to growers, is the Electro'Flor Blossom thinner, which emulates the method employed by tractor-mounted rigs. This machine has the potential to reduce the current cost of hand thinning by reducing the number of man-hours required for the operation.
Coir helps drive expansion in soft fruit

Whether you look at the statistics, the expansion in UK soft fruit production since the turn of the millenium has been nothing short of phenomenal. As the crop has moved under protection into Spanish tunnels and under glass, the area of strawberries has increased every year since 2002, to stand at more than 4,600ha.

The transfer has been accompanied by the move out of soil and, for more efficient picking, into tabletop and gutter systems that rely on substrates – at first peat, and latterly coir. “We have been moving over to coir for the last 10 years or so,” says Laurie Adams, production manager at Hall Hunter Partnership, which has seven production sites across the south-east of England. “It has been a gradual process, starting with a few acres, which has increased year-on-year and has gone hand-in-hand with the development of irrigation control technology.”

Mr Adams sources coir in various formats – compressed bagged ‘slabs’ which may be washed or buffered, blocks for pot production, and sometimes loose – and from a range of suppliers, including Dutch Plantin which has recently appointed the agronomy company Agrii as its UK distributor. Because of the substrate’s physical characteristics and high air content, plants readily take up nutrients and root growth is better, he says. “It is more forgiving than peat in terms of irrigation management,” he adds. “If it dries a little too much, you can quickly re-establish the optimum moisture content; and if it gets a little too wet, it is quicker to drain than peat.”

Coir’s ability to keep its structure over time means that crop production is maintained for the life of the bag. “Generally we use a strawberry bag for three years but might replant it three times,” says Mr Adams. “The ‘slabs’ are all one metre long – the industry standard – and we specify a 20 litre volume in the main, more for everbearer crops because of their bigger root system. We opt for a standard pattern of drainage holes so whatever the configuration of tabletop or gutter, we always have enough drainage.”

Mr Adams says that 70 per cent of the company’s strawberry production is now in coir. “We intend to convert fully over from soil,” he says. “We collect run-off from a few fields – and are looking at doing more – but at present we don’t reuse it, disposing of it through reed beds. We have, though, started to look at reverse osmosis and UV as ways of treating run-off with a view to reusing it.”

Raspberries, blackberries and blueberries are also grown in coir at Hall Hunter. “The raspberries are in pots for two years but with the new raspberry varieties that have been introduced, we may be able to keep them for three or four years,” he says. Blueberries are grown in a peat/coir mix and are repotted several times over their 10-year life.

The company is looking at overall production this year of 10,000 tonnes of soft fruit of which 8,000 tonnes will be strawberries.
BIFGA Spring Farm Walk 2014

Small is Beautiful – Dr David Pennell Reports

The 2014 BIFGA Spring Farm Walk, hosted by Colin and Susie Corfield at Owl House Fruit Farm, Lamberhurst, Kent, and sponsored by N. P. Seymour Ltd, attracted nearly 100 BIFGA members. Whilst not the largest fruit farm in Kent, Owl House Fruit Farm lies on the Tunbridge Wells Sands just outside Lamberhurst overlooking beautiful countryside, and is an object lesson in making the most of your assets and experience.

Colin took over the farm in 1985, when the bulk of the fruit, mainly Cox and Bramley, was marketed through AGA (Apple Growers Association) to Tesco, but in 1988 AGA lost the contract and this triggered a change in direction for the farm. When he acquired the farm Colin produced a small amount of cider, an echo of his past experience working for Bulmers, and realised that the demand for fresh pressed apple juice was strong. He decided to concentrate on fruit juice production in order to finance the replanting of new orchards in 1990. Some orchards were also let out, but in 2003 Colin took these back, grubbing the MM106 trees and keeping the M9 for juice production. Now all the apples are made into Owl House’s own juice on the farm.

In addition to apples for juice, Owl House Fruit Farm grows five acres of cherries, most of which are sold to local shops. The original plantings were part of the diversification away from apple production and now the newer varieties Colney, SummerSun, Kordia, Regina, Van, Skeena and Hertford are grown, with harvest running from late June to the end of July. Crop covers and Pretect are used to help maintain fruit quality. The covers were ready for use when BIFGA visited and members could see a reasonable crop developing.

With all of the farm’s apples going into its own juice products, the range of varieties grown has developed to meet customer demand. Whilst Cox is still considered to be an excellent juicing variety, Worcester also gives good juice and Bramley is useful for blending with Cox. Jonagold and Red Windsor have been added in newer orchards and, more recently, Cheerfull Gold, which produces excellent juice with similar flavour to Cox but offering a denser texture and a longer natural storage life. Tree-ripened fruit is used in all of the juices from the Owl House orchards, which, as Colin explained, can give problems in some years with negative effects on return bloom and storage life.

The orchard spray programme for apples uses few insecticides, and Regalis and Cultar help in managing tree growth. Scab is rarely a problem as the farm is exposed to the wind, giving airflow which helps reduces infection periods.

Larger pests such as deer and badgers are a problem however. The whole farm is surrounded by high fencing, with deer having been a problem for many years, thriving in the nearby woodland. Neighbouring landowners have counted in excess of 120 deer in one field which butts onto woods. Badgers pose a rather different problem - Colin discovered the badgers had become ‘tree climbers’ in the cherry orchard,
and on one occasion he found two badgers high up in a cherry tree helping themselves to cherries. The creation of alternative food sources helped redirect their attentions but they can still cause problems.

The juicing operation is based in a farm building where the farm’s own fruit is held in air in a small coldstore until it’s ready for processing. The juices are pure and fresh with no added sugar, artificial sweeteners or preservatives. Colin explained the process used on the farm whilst walking through the facility. The apples are thoroughly washed and inspected before entering the mill, where they are crushed. The pulp is drawn through a belt press where the juice is gently squeezed from the fruit. After overnight settling in holding tanks the juice is pasteurised and the bottles hot-filled, before being automatically sealed with screw caps. Each bottle of fresh-pressed juice has a shelf-life of approximately one year. The bottling and labelling machinery enables production to be maintained steadily.

A recent addition to the equipment in the juicing plant is a carbonation machine to add CO2 to juices and create sparkling products. Colin commented that the apple seeds must not be squashed during pressing as they will produce a bitter taste, so setting up the belt press correctly is an essential part of the process. The press works from September to March, starting with Worcester and moving through the farm’s own fruit. Later processing relies on fruit bought in from local packhouses which Colin has used regularly, knowing that their fruit will be of the quality that Owl House requires.

Owl House produces about 500,000 litres of juice per annum, from a combination of Owl House-grown fruit and that of other growers. The Corfield’s also undertake juicing under contract to other growers who wish to have their own fruit juiced and labelled. Some juice is made from fruit brought in by very small producers, which includes those with trees in their gardens, the minimum quantity accepted being one bulk bin.

The Owlet range now comprises 14 juices, some single variety juices, others blends, and all available in one litre glass bottles. The blends are also available in 25cl bottles, which have proved to be popular with catering outlets. Larger 10 litre ‘bag in box’ packs have also been introduced for two of the blends - the popular Cox/Bramley blend, and apple and grape. The Corfields’ juice has twice won First Prize at the National Fruit Show, for Worcester and a Cox/ Bramley blend, and has won Great Taste Awards every year for the last 12 years.
Good tractors essential for Herefordshire organic fruit operation

Hand-weeding has been replaced by an efficient weeding machine in organic orchards managed by a fourth-generation fruit grower in Herefordshire.

As Joe Pardoe emphasises, when you’re running a fruit growing business single-handed for most of the year, having versatile and reliable machinery to call on is essential.

The twin-arm Ladurner weeder/cultivator that he uses to minimise competition from weeds in the Priors Grove orchards at Putley near Ledbury, Herefordshire, has hydraulic drive to a pair of rotary cultivator heads on the end of each arm. Sensing rods actuate the hydraulically-operated arms to move the blade rotors into close proximity to trees and posts without damaging them, so the machine is self-regulating to some extent. But in ground littered with stones and other potential hazards, the operator still has to keep a keen eye on progress. “That’s one of the reasons why I bought the new tractor for the cultivator,” says Mr Pardoe. “Because the Valpadana can be operated in reverse drive, I get a clear view of the weeding machine and what it’s doing.”

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The 66hp Valpadana 6575 ISR is one of two main tractors supplied by local dealer Richard Tooby Farm Services and used at Priors Grove to provide the muscle among 30 acres of apple, plum, cherry and pear orchards. A more conventional 92hp Landini Rex 100GT handles spraying, root-pruning and trailer-pulling work. It also mows between the lines of trees – just once before harvest; otherwise the grass is left intact to maintain a habitat for beneficial insects.

The key requirement of the Rex is that it should pull the seven tonne capacity Agrofer spreader up banks and turn in and out of the rows without having to shunt to and fro. It scores on both counts, and reliability too, says Mr Pardoe. “I’ve had three or four different makes of tractor over the years but the Landini is simply more robust and takes a lot of hammering,” he explains. “It’s also got a great power-shuttle; smooth, easy to use and reliable.”

The Valpadana also has a power-shuttle, which makes end-of-row turns easier, and, because the shuttle lever is mounted on the seat turntable along with the steering wheel and instrument panel, it is always in the right position, whether the tractor is used in conventional or reverse-drive mode.

In practice, the Valpadana is always used in reverse at Priors Grove because its other main duty is to operate a compost spreader: “As we’re organic, we do things a bit differently,” says Mr Pardoe. “The compost is fed out alongside the trees and then incorporated by the cultivator to provide nutrition and keep the soil around the trees in good condition.”

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In practice, the Valpadana is always used in reverse at Priors Grove because its other main duty is to work as a forklift deploying bins into the orchard and then loading them onto a trailer once the pickers have done their work. “It’s brilliant using the linkage-mounted forklift because you’re facing the right way, not having to twist round to do the job so there’s no more cricked neck,” says Mr Pardoe. “The steering is at the back when you’re working the tractor this way, which is where you want it for good manoeuvrability, and the power-shuttle makes it easy to do things quickly but smoothly.”

That is also the essence of what a one-man operation needs when it comes to tractors and machinery. The focus is very much on the fruit and nurturing it through to harvest - operating reliable and effective machinery means there is one less thing to worry about.
New developments in fruit production

A comment from Hugh Lowe

Last month’s report of the Global Berry Congress was very interesting - it is always encouraging to read about the positive attitude taken by fruit growers and suppliers of the equipment and other materials which are essential to modern fruit production. The rapid uptake of research results and the willingness of growers to adopt new ideas and advice have contributed much to the increasing yields of top quality fruit, which must be encouraging for the scientists who we are fortunate to have working for the fruit sector.

I was very pleased to read that Peter Kendall has accepted the post of Chairman of the AHDB, which will address our continuing need for marketing and production research developments, something which he is clearly very keen on and which we will continue to rely on in the future.

The yield levels which most growers achieve as a matter of course nowadays are much higher than was normal 20 years ago, and the quality and flavour of modern varieties is also much better than it used to be. This is largely due to research; plant-breeding must be one of the most effective ways of keeping up with our consumers’ requirements, but we should not forget the continuing need for pest and disease control and to stay ahead of the increasing, and probably legitimate, demands of the Chemical Regulation Directorate (CRD). ‘Nature’ always seems to keep a few cards up her sleeve and, just when a solution for control of a troublesome pest or disease seems to have been found, there is always something new, either because it has evolved or, perhaps, because it has arrived from abroad.

Obviously, seasonal labour availability and costs are very much in growers’ minds at present, but, while there are several promising ideas about cost-saving in the production phase, we still do not have a reliable solution to the continuing need for an adequate supply of seasonal labour to get our fruit picked in good order. Of course it still has to be hand-harvested and, in light of recent political developments, future availability of an adequate workforce is rather uncertain. Obviously, tabletops for strawberries is a significant step forward - they make the job more congenial and faster, but do the local young people that growers try to recruit - usually without much success - know that this particular task has become much easier? Perhaps it needs to be publicised on the internet, with short videos of what modern strawberry picking is actually like, compared to the old way of picking from plants on the ground. Most growers have already solved the problem of having to work in the rain by using polytunnels and one no longer has to bend one’s back to reach the fruit. A video of this might catch the attention of young unemployed people, for whom a season’s work on a fruit farm might help them to get a job more suited to their aspirations. I have always believed that it is easier for the young to get a permanent job when they are already working, rather than having been unemployed for some time.

Or, should growers be considering the opportunities offered by making more use of harvesting rigs? I know they are said to be a good way of making a slow picker into a faster one, but that, on a farm where some are employed to pick standing up, while others can have an easier life on a harvesting rig, can encourage people to work slowly in the hope of being selected to work in greater comfort on a rig. However, if the opportunities on a modern fruit farm were more widely publicised, to contradict the conventional public opinion that fruit picking is physically demanding and, dare I say it, boring, we might find that young people would be more interested in starting their working lives by taking a seasonal job.

It was interesting to read the comments from James Smith, a young top fruit grower from Kent, who has been planting new orchards with all the opportunities offered by current and, I expect, future mechanisation developments in mind. I believe that he is right, if only because people will continue to eat apples and pears and the recent favourable developments in consumer attitudes towards home-grown fruit are beginning to take effect. I am not so sure whether he is right about the need to introduce genetically modified varieties, with the inevitable negative comments from certain sections of society; we can, at present, assure our consumers that British fruit is “GM free”. But this raises the issue that GM plant breeding may be a good way of dealing with certain pests and diseases without the use of a sprayer.

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Biological control of vine weevil in strawberries

Developing Integrated Pest Management (IPM) solutions, as well as alternative approaches and techniques, are central principles of the recently introduced Sustainable Use of Pesticides Directive (SUD). Growers of strawberries and raspberries have an amazing tool to control vine weevil that will not only do the job well, but will also comply with this important piece of legislation.

“Nemasys L (Steinernema kraussei) is an insect-parasitic nematode that controls immature stages of the Black Vine Weevil in strawberries and other crops under a wide range of temperatures. It is preferable to use biological control for vine weevil, and recent independent studies have reiterated that Nemasys L is the best weevil product on the market,” says Dr Aoife Dillon of BASF Agricultural Specialities.

Black Vine Weevil (Otiorhynchus sulcatus) is a devastating pest of many plants, particularly soft fruit and nursery stock. In strawberries alone they are said to be responsible for losses of over £10 million per annum. The adult feeds on the foliage, producing characteristic notches, which is more of a problem in nursery stock where cosmetic damage can make the plants unmarketable. “It is the larvae in the soil or growing medium that cause the most economic damage, feeding on roots, leading to wilting or even death of the plant. When applied as a drench or through irrigation systems, Nemasys L controls the damaging larvae rapidly and safely across a soil temperature range of 5°C to 30°C. This assured activity across a wide temperature range is what differentiates Nemasys L from other biological competitors such as other nematode products and Metarhizium anisopliae, which are not effective at lower temperatures,” comments Aoife.

In ADAS/HDC trials in strawberry plants in coir substrate, the Nemasys L treatment, applied in September, reduced the weevil population by about 96%. The number of weevil larvae in growbags treated with Nemasys L was reduced to less than two larvae per bag, compared to up to 44 larvae per bag where nematodes were not used.

Aoife Dillon explains that the adult vine weevil is active from the end of June through to October. The adult female lays 1000 eggs in the soil or compost from July through to September. The eggs are 1mm across, white turning to brown, and are difficult to see. Larvae hatch after two weeks and start feeding on plant roots. The larvae pupate in late spring and emerge from June onwards. The beneficial nematodes seek out the vine weevil larvae and once inside release symbiotic bacteria, quickly killing the insect pest. The microscopic nematodes reproduce inside the insect and release a new generation of infective juveniles that seek further larvae, providing long lasting effects.

Nemasys L is applied with standard spray applicators from February to November when the vine weevil larvae are present and soil temperatures are above 5°C. In addition to being effective at warm and low temperatures, Nemasys L has no resistance problems, no residue concerns, no non-re-entry interval, no requirement for protective clothing and no disposal restrictions.

Rob Storer, Speciality Crop Manager for BASF, notes that “undoubtedly there is increasing pressure for effective pest and disease control in specialist crops, particularly fruit crops, but there are more legislative and practical challenges for growers. We need effective alternative options to boost yield and protect quality in these speciality crops and Nemasys L does just this. BASF is developing market-leading science in both conventional and biological approaches, along with a combined approach to plant treatment.”

He says that BASF are fully committed to both horticulture and agriculture and that the integration of world-leading biopesticide technology fits well into the company’s quest for “Innovation beyond crop protection.”
A.C. Goatham and Son building for a sustainable future

Speaking at the EMRA Top Fruit Storage Day in March, Clive Goatham gave a thought-provoking insight into his approach to environmental issues and, in particular, energy saving measures.

The business which is A. C. Goatham and Son today has evolved from a family farming business in which Clive Goatham has been involved since 1967. Having been lucky enough to be close to nature and involved with it throughout his life, Clive acknowledged the guidance he had received from parents who were involved in agriculture and horticulture, and who loved the land they worked on, recognising the responsibility they had to look after the land and the environment they lived in.

From this basis Clive explained the approach to generational custodianship and management of the land and local environment to which the Goatham business adheres, where it’s recognised that we have only one chance to get the care right for the environment of which we have temporary custodianship. He believes that growers have a fundamental advantage over others who advocate and promote various environmental issues, in the love and respect they have for environment in which they live and work, and have a vested interest in its sustainability over the long term. The landscape also makes significant economic contributions and, whilst big businesses can come and go, the countryside will meet the continuing need for food, if allowed to do so.

Energy efficiency is a significant part of providing a sustainable future for growing, but the costs of achieving meaningful improvements should not be ignored, especially as food production specialists come under increasing pressure to lower costs whilst maintaining a sustainable, viable future. Clive reminded the audience that to achieve meaningful energy efficiency requires substantial ‘front end loaded’ capital investment, which is difficult for many growers achieve, often due to the pressure on margins.

Competition from overseas continues, and this operates on what appears to be a far from level playing field, from the regulatory and environmental point of view. Erosion of margins reduces the viability of growing and reduces the capital available for investment in energy efficiency and other desirable improvements. Growers must constantly review production costs and competition in the market. A key requirement is to find the cheapest route to market, taking out non-essential cost elements from the marketing process. Businesses need to become operationally efficient, from farm to consumer, before we can embark on the investment required for energy efficiency. All the environmental measures, including energy saving, which the industry is exhorted to adopt, come at a price and with substantial ‘front end loaded’ investment.

Recent energy efficiency measures at A.C. Goatham have involved every aspect of the business, ensuring that it is financially sound and efficient in other ways before making investments. Energy saving is not about electricity alone but covers all inputs. Investments made so far have involved new storage units, improved use of fertilisers and a new headquarters complex opened in August 2013.

Cold storage is a major energy user and expense, so when building stores to meet increasing production four years ago, the business set out to achieve a cost-effective rate per tonne by installing new technology from Hycool. This resulted in significant electricity cost savings of up to 33%, compared to the costs of direct expansion systems within the company. When considering the next storage project, due for completion for the 2014/15 season it was natural to consider the Hycool system again. However, the added cost of Hycool now, compared with direct expansion systems, has risen substantially. Four stores with direct expansion can now be built for the same cost as three Hycool stores. Financial assessments of Hycool versus direct expansion indicate that the investment in Hycool could not be recovered over the life of the stores making it uneconomic to proceed. The advantages of ‘green’ systems seem to have encouraged manufacturers to increase prices to levels which the make use of the technology uneconomic for growers.
The recent opening of a new headquarters at Flanders Farm on the Hoo Peninsular has enabled packhouse operations to be centralised, along with management, at one location, merging three packhouses into one larger packhouse, resulting in financial and energy savings. The 10,000-bin storage block is using a Hycool refrigerant system. All water, including foul water and rainfall, is collected into a central reservoir which is used for irrigation of surrounding orchards. £250,000 has been invested in solar panels on the roof which, when the sun shines, provides enough power to run the packhouse, distribution centre and office complex. Over the winter this has provided £9000 of electricity, equal to 22% of usage, but again with substantial ‘front end investment loading’.

The centralisation of operations has also made recycling more feasible, with 600 tonnes of waste fruit being converted into compost by a third party and 40 tonnes of plastic being recycled between August and December. 185 tonnes of cardboard and 242 tonnes of timber have also been recycled. There has also been a substantial reduction in lorry movements, with 10,730km being saved in the first four months alone.

On the farms, GPS has recently been rolled out across the whole business. Fertiliser application is now linked to soil and tree requirements. This has followed three years of trialling the system at Gore Farm and the company is now confident that its accuracy, efficiency and cost saving are worthwhile, as well as giving improvements in yield, crop quality and tree health, resulting in financial and environmental gains. In the trial a saving of £6,360.35 was achieved on 11.95ha.

Currently Clive believes that A.C. Goatham and Son is nearly as lean and mean as it can be at production level, and that many other fruit businesses are as environmentally friendly and efficient as they can afford to be. Further improvements in the industry will require substantial investment, all ‘front end loaded’.
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Landseer Limited
Lodge Farm, Great Hall Lane, Galleywood
Chelmsford, Essex, CM2 8PF, England
T: 01245 357109  F: 01245 494165  E: info@Lanfruit.co.uk

www.Lanfruit.co.uk

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