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Who's picking our food?

A special investigation into exploitation in the supply chain

Who's to blame for the 'slavery' behind our food?

Andrew Wasley, Ecologist editor

I've just returned from southern Italy where a good deal of our tinned tomatoes (and other processed tomato products) originate. Whilst there I was secretly taken to one of numerous slums hidden deep in Basilicata's arid countryside (similar places are dotted acoss Puglia and Campania too). The grim collection of shacks I visited are home to some of Europe's so-called 'tomato slaves' – mostly migrants from impoverished west African nations, a few from Eastern Europe – trying to scratch a living harvesting the region's abundant tomato crop.

I discovered that life for these men (from places such as Ghana, Birkina Fasa and Ivory Coast), and as many as 50,000 others like them, is blighted by shocking levels of exploitation and abuse. Many workers – some of them illegal immigrants – are forced to toil for up to 14 hours a day picking tomatoes in harsh conditions (the heat can reach 40C) for poverty wages (sometimes as little as 17 pounds a day), frequently under the control of (sometimes brutal) gangmasters. The workers live in appalling squalor. Home is often a derelict building – such as those I visited – many without power or any form of effective sanitation. As many as thirty people can be crammed into a single, filthy, one floor house. Some workers described how, at the height of the annual harvest season, people simply sleep outdoors, perhaps on a scavenged mattress or blanket.

What's shocking is that this is happening inside Europe. We're (unfortunately) all-to-used to horror stories blighting our food supply chains in less developed parts of the world (not that such cases are any more acceptable whether they are in Honduras or Kenya or Thailand, particularly where UK companies sell the goods in question) but most people will be particularly alarmed that this is happening on our own doorstep.

What's equally shocking is that the tomatoes being picked will be processed and shipped across Europe – including to Britain – to be sold in tins, as pastes, purees and passatas, or for use in pizza toppings, ready meals or other everyday food products. This means that virtually every household in the UK could have, at one point or another, unwittingly consumed a tomato harvested in such disturbing conditions.

Culture of impunity

Perhaps most shocking of all however is the apparent culture of impunity around the issue: some Italian farmers and industry insiders acknowledge the use of migrant labour in the tomato sector yet choose to ignore the exploitation and squalor. The current economic climate being what it is, they argue there's little choice but to keep overheads to a absolute minimum – and migrant labour is cheap labour.

All of the large processors and retailers I spoke to denied they were linked to the scandal and insisted strict codes of conduct and ethical audits are in place to prevent such abuses on their patch. One supermarket – Waitrose – announced an inquiry into the issue following our revelations (we don't yet know what they've found, if anything), the others said they were satisfied their products were not tainted by the problem.

Who is to blame then? The trade is dominated by a handful of large companies who in turn sell to supermarkets, bulk wholesalers and specialist shops. But, in common with many consumer goods, the complex nature of the supply chain (more than 200 companies are apparently process Italy's tomato crop) and the scale of the problem make it difficult to establish whether specific tomato products are tainted by exploitation. At least that's what campaigners say.

Unions and welfare groups are attempting to tackle the problem by getting all of the major players involved to sign up to an industry wide protocol, akin to a certification scheme, in order to agree minimum standards and an ethical code. Although in theory this should help tackle the worst abuses, a stamp of approval from a certification scheme does not necessarily guarantee an ethical purchase: only in April an Ecologist investigation uncovered allegations of sexual abuse and poor conditions for workers at a Rainforest Alliance-certified tea plantation in Kenya supplying Unilever's PG Tips and Lipton brands. Campaigners say they are expecting resistance to the mooted industry protocol from at least some of those involved in the tomato business.

But genuine progress will only be made when all parties – producers, processors and retailers – start acknowledging there's a serious problem connected to the sector, regardless of who specifically is to blame, rather than pretending it doesn't exist. Until that happens the 'tomato slaves' I met, and others like them, will continue to toil, almost invisible to the outside world, and consumers will continue to have little idea of what really lies behind the food on their plates.

Cover image courtesy of The Harvest

Revealed: scandal of Europe's 'tomato slaves'

Across southern Italy as many as 50,000 migrant workers are believed to be harvesting the region's tomato crop. Photo: Piet Den Blanken / Flai-Cgil

Across Italy an invisible army of migrant workers harvests tomatoes destined for UK dinner plates. Paid poverty wages and living in squalor, medical charities have described conditions as 'hell'. Andrew Wasley reports from Basilicata, southern Italy

In the parched countryside outside the town of Venosa, in Basilicata, southern Italy, along a rough track fifteen minutes' drive from the nearest road, you come to a series of ruined farmhouses. Overgrown and run down, the brickwork crumbling, and surrounded by the detritus of poverty – rubbish, abandoned water butts, washing draped out of windows, dogs roaming – at first glance it's difficult to believe anyone lives here.

The slums are in fact home to several hundred migrant workers about to harvest the region's abundant tomato crop. Every August, thousands of itinerants, mostly from Africa, some from Eastern Europe, descend on southern Italy to scratch a living picking tomatoes that will eventually be processed and exported across Europe – including to the UK – to be sold in tins, or as pastes, purees or passatas, or used as an ingredient in other food products.

But an Ecologist investigation has revealed how the lucrative trade is blighted by exploitation and abuse: workers – some of them illegal immigrants – are forced to toil for up to 14 hours a day picking tomatoes in harsh conditions for meagre wages, frequently under the control of a network of gangmasters who make excessive deductions or charge inflated rates for transport, accommodation, food and other 'services'. Those complaining can face violence and intimidation.

Workers frequently live in appalling squalor: home is often a derelict building without power or any form of effective sanitation. As many as thirty people can be crammed into a single, filthy, one floor house. Healthcare is virtually non-existent and contact with the outside world minimal.

So bad are the living and working conditions endured by the migrants that campaigners have dubbed them 'Europe's tomato slaves'.

Most seek out the precarious employment in order to send money to family back home, but find themselves caught up in

Housing conditions for migrant workers in Puglia, Basilicata and beyond are primitive. Here a worker sits outside a makeshift shelter. Photo: Piet Den Blanken / Flai-Cgil

a brutal spiral of poverty and exploitation. Unable to save sufficiently to transfer any money – or pay for a flight out of Europe – the workers become trapped and are forced to seek out similarly low paid and back-breaking work harvesting oranges, lemons, olives or strawberries in order to survive.

Human rights groups and unions say as many 50,000 migrant workers could be affected, toiling in the agricultural regions of Puglia, Basilicata and Campania, amongst others. The figure could be much higher as many migrants are thought to be in the country illegally.

Conditions are so poor that the charity Médecins Sans Frontières (MSF) – more usually associated with providing medical aid in conflict zones – has in recent years sent mobile clinics to treat migrants in some areas, and issued a scathing report describing the workers' experiences as 'hell'.

Suffering and squalor

Those living in the first house the Ecologist visited didn't want to talk. There had been rumours of television cameras coming, and – in a clear sign many were in Italy without visas – fears that the 'authorities' could be conducting inspections. One man refuses to look up from gutting the carcass of an unknown animal that's hanging from the shack's roof.

Further down the track there is another, almost identical, building. A dozen young African men are gathered around; some smoking, some lounging in the stifling Italian heat. These guys are happier to talk: this house is 'home' to fifteen migrants at present, mostly from West Africa – countries such as Ivory Coast, Burkina Faso and Ghana.

There's no running water or electricity. The men appear to sleep communally on mattresses spread out across the stone floor. The workers cook, wash and shit outdoors (there's no toilets here; as we left one worker was squatting just yards from the house). The tomato harvest begins in late August in Basilicata; when it does, these men will be joined in the house by up to fifteen more workers. They say it will be so overcrowded that some will have to sleep outside.

The men tell us they are here for one thing: to work. Some had been in Italy for several months, some for several years. Most had no idea of when – or how – they'll return home. When not harvesting tomatoes they might be picking oranges or other fruit, or might go back to Naples, where much of Italy's itinerant workforce dwells when not actively harvesting. Some migrants beg on the city's streets.

Asked whether this what he expected to find when he set out for Italy, one worker, Joseph, from Ghana, tells us: 'It's not what we expected to find that matters, but what we found,' gesturing at the surroundings.

Another migrant, Armel, from Birkina Fasa, says 'It's not better here [than Africa], we're not used to this type of work.' He says it's not easy to send money home as prices [paid for work] are very low – and they have to buy food and other items for everyday living. 'Every harvest is the same, the orange harvest is even worse... there's too many people for the work [available]'.

Daniel, also from Birkina Fasa, tells us that once the harvest gets underway in the coming days, he expects to spend between ten and twelve hours a day in the exposed tomato fields, picking by hand; bending, plucking and carrying the filled crates. The work is arduous, repetitive and hot. The temperature can reach 40C degrees.

Contracts are non-existent for most tomato pickers. The migrants are paid on a piece-rate system based on the amount of tomatoes successfully harvested. Although it can vary from location to location, Daniel, Armel and Joseph can expect to earn between 20 -30 Euros (£17 - £26) per day – the current going 'rate' – depending on the number of crates picked. The crates are heavy, holding as many as 350 kg of tomatoes when full.

'But there's only enough work for three days [per week]', Daniel says. 'The other days are spent here.' This means, in practice, that some workers here could earn no more than 51 Euros (£45) per week. And that's before a gangmaster has

taken his cut or workers have paid for essential items.

Strict hierarchy

In common with seasonal horticultural operations across Europe – and the US – gangmasters are central to Italy's tomato harvest. They broker deals with farmers and producers, and supply the workforce, as well as providing transport, organising accommodation, food, water and other essentials for the workers.

The relationship between gangmasters and producers in Italy is complex with a strict hierarchy governing those involved in the supply of seasonal labour. In many cases an Italian gangmaster, known as a capo bianco (white chief), will approach a tomato farmer, or collection of farmers, to establish a business relationship. They will then agree the quantity of land to be harvested, and negotiate an overall price and the number of workers needed.

The capo bianco will then typically instruct one of a number of other gangmasters he manages – usually a foreign national from a country that is home to migrant workers; these are known as capo neros (black chiefs) – to physically recruit and manage the required workforce.

The capo nero usually lives alongside workers, but doesn't actively take part in the harvest, instead ensuring the correct number of migrants are delivered to the fields, providing their transport, accommodation, food and water, and paying the wages.

Some deduct money from wages upfront for workers' food, accommodation and transport. Others charge for these essentials after they've been paid. Other 'services' and supplies must also be paid for – charging a mobile phone, organising clean drinking water, supplying a bike – with many enterprising gangmasters ensuring they take a cut on each sale. Often, a capo nero will take the first crate of tomatoes picked in a day as additional payment for his services.

A capo nero is present when the Ecologist visits. He's unrecognisable apart from being marginally better dressed than his peers, and being one of few who say they've managed to return home – in his case Ivory Coast – since arriving in Italy. His presence means these workers are nervous about openly discussing financial details, although one young migrant complains that 'too much money' is sometimes charged for basic items.

Intimidation and violence

Relations between gangmasters and workers frequently break down as resentment over exploitative practices spills over; in recent years there have been regular reports of intimidation and violent attacks on workers who have spoken out, according to campaigners.

Union officials told the Ecologist they are currently concerned about the whereabouts of one African migrant who had been living in the Venosa area after it became known he had written a letter complaining about poor conditions. And in the Lecce region of Puglia (another hotspot for migrant labour) seasonal workers have recently complained about poor treatment by gangmasters and are currently 'striking' in protest.

In a groundbreaking investigation for 'L'espresso in 2006, Italian journalist Fabrizio Gatti first revealed how African and Eastern European migrant workers harvesting tomatoes in Puglia were frequently threatened, beaten up and racially abused by gangmasters and farm owners.

In one disturbing incident, a Romanian worker was allegedly savagely beaten by a gangmaster before being left to die – he was later secretly fed by fellow workers and eventually taken to hospital where, after a major operation, he was handed over to police for deportation.

He was lucky to have received treatment at all. MSF has reported that many immigrant workers employed in southern Italy's tomato and citrus fruit harvests have been turned away from hospitals whilst seeking treatment, and that others, without permission to be in Italy, have been too afraid to access medical attention for fear

Conditions during the tomato harvest are often harsh, with workers such as these in Puglia enduring heats of up to 40C. Photo: Piet Den Blanken / Flai-Cgil

Many migrant workers have little access to running water, sanitation or electricity. Photo: Piet Den Blanken / Flai-Cgil

of being reported.

The organisation, which has documented disturbing patterns of poor health amongst migrant workers, including skin, respiratory and gastrointestinal illnesses, became so alarmed by conditions that it provided mobile health clinics and other humanitarian assistance to workers in several regions, including Basilicata.

Although the situation in Basilicata is poor, campaigners says conditions are worse – and the scale of the problem even greater – in Puglia, in the Foggia and Lecce regions in particular. It's estimated that there are as many as 15,000 migrant workers in Foggia, around 2,000 in Lecce. When the Ecologist visited Baslicata the figures were much lower, less than a 1,000, although that number is expected to swell as the harvest begins in earnest.

Gervasio Ungolo, from the advocacy group Osservatorio Migranti, which works to improve conditions for migrant communities, says that although many of the tomato workers are in Italy legally – he estimates around 80 per cent, with the remainder in the country illegally – conditions are so poor and the future so bleak that many migrants simply despair. 'They reach the bottom of the scale, the bottom of the barrel,' he says 'they lose all self respect.'

> There's no running water or electricity. The men appear to sleep communally on mattresses spread out across the stone floor.

Workers interviewed near Venosa concur: 'The situation in Africa is not so good, but the basis is still respect; not here... here there is no respect', says Armel. Another migrant, Raul, tells us: 'We want to go back to Africa, we need people to help us go home. Life should be better... this is not life.'

As we leave, two of the younger migrants approach discreetly. Despite insisting that they are in Italy, and thus Europe, legally, they want to know whether it's possible to reach the UK and work unofficially: 'how do you get there? do you need paperwork? is it possible to work without a passport? is the work better than here?'

Keeping costs down

Few Italian tomato farmers will freely admit to employing migrant workers despite it being an 'open secret' within the industry. One grower interviewed by the Ecologist acknowledged however that the practice was common, particularly when weather conditions are poor and machines (increasingly being used by larger farms to mechanically harvest) cannot operate.

The farmer, Giovanni Lagana, based near the Basilicatan town of Lavello – a major hub for tomato growing – says that foreign workers have been employed during the Basilicata tomato harvest for years. 'Twenty years ago, in the beginning, they were from North Africa, now it's Central or Western Africa,' he says. 'Tunisian students came to train and learn the harvest.'

He says the migrant workers he uses are 80 per cent African, 20 per cent Eastern European – Italians apparently don't want to do the work – and that all are supplied by a gangmaster. 'It's necessary [to use gangmasters] so I don't have to talk to forty people, just one, to arrange the work. They say "how many workers do you need?", we negotiate the price for a box, it's a guarantee for the workers and farmers – they take care of everything.'

Lagana, who cultivates up to 900 tonnes of tomatoes each season, some of which are supplied to major processing companies for export and sale as tinned tomatoes overseas, says there is an economic imperative to keep costs, including labour costs, down: 'The price we have now in 2011 [for tomatoes] is the same as 30 years ago, but the [production] costs have risen.'

The farmer says tomato growers are under acute pressure as plants, irrigation systems, fertilisers, pesticides, and the harvest, all have

to be paid upfront, and that the prices paid by the food industry are too low. Each year, the price for a tonne of tomatoes is fixed by Italian food industry representatives and local producers organisations, he says. These regional organisations, or co-operatives, of which most growers are members, then meet with processing companies to set up a deal and agree prices for the season.

'It's a bad life, tomato production with this system is destined to disappear. Prices are too low; maybe they are going to lower them more and more because of Chinese production,' says Lagana. Although still one of the world's leading suppliers of tomatoes – and tomato products – Italy is facing stiff competition from other growing nations, including China, to keep prices competitive and this pressure trickles down to individual farmers.

A representative from one regional producers' organisation told the Ecologist that the 'wider market' is to blame, and that if a major retailer says it is going to pay a certain amount per tin, 'the industry has to follow this price'. He made no correlation between the need to keep costs low and the apparently widespread use of migrant workers however; in fact, he denied that foreign workers were used in Basilicata to harvest tomatoes at all.

Culture of impunity

Although acknowledging that tomato farmers face increasing pressures, human rights groups and unions argue that many growers simply turn a blind eye to exploitation: 'Farmers? They don't care, they know about the inhumane conditions,' Vincenzo Esposito, from the Flai-Cgil union, says. The union is behind a major campaign Oro Rosso – Red Gold – to raise awareness of the problem in Basilicata, Puglia and elsewhere.

Esposito says there are two principal problems – the number of workers, and the payment system: 'There's too many workers, too many people, immigrants from elsewhere coming here, yet they cannot always get work here,' he says. 'Every year the Basilicata region deals with an emergency situation with the arrival of hundreds of workers. The situation in Puglia is worse, and the gangmasters are more aggressive.'

Flai-Cgil is calling for an industry wide protocol, akin to a certification scheme, to be adopted by national tomato producers, in order to agree minimum standards and an ethical code. On September 28th they are planning a national day of action to promote the scheme.

Gervasio Ungolo, from Osservatorio Migranti, says there's a culture of inpunity around the issue: 'It's like in World War Two, when you had the trains [carrying Jews to the death camps]; everyone knew but didn't act because of fear, it's exactly the same with the tomato slaves.'

Ungolo used to cultivate tomatoes but left the sector after witnessing abuses: ' I used to see workers in the fields, slavery among workers, and bags of money [changing hands] – and decided to get out of this game,' he says.

Mechanical harvest

Tomatoes – and processed tomatoes in particular – are big business in Italy: the country produces up to 4 million tonnes each year with as many as 90 per cent destined for processing. Italian tinned tomato exports were estimated to be worth more than $900 million in 2008. The country is responsible for around 75 per cent of the world's canned tomato exports. Britain is the largest importer of tinned tomatoes in the world – with more than 80 per cent of its processed tomato products coming from Italy.

The trade is dominated by a handful of large companies. Leading suppliers deny any involvement in the migrant workers scandal.

Conserve Italia, manufacturer of the popular Cirio brand, processes approximately 300,000 tonnes of tomatoes annually, including some cultivated in Puglia and Basilicata. The company sells to Sainsbury's, Waitrose and Morrison's, as well as supplying cash and carry outlets and specialist Italian delicatessens.

Conserve Italia admitted that some of its tomato suppliers use migrant labour but said they are employed by farmers and not directly associated with the company. The company also stated

These workers in Puglia have little more than cardboard for shelter. Photo: Piet Den Blanken / Flai-Cgil

Southern Italy's tomato fields are blighted by exploitation of migrant workers. Photo:Beatrice Crippa Muti / Flai-Cgil

that a strict code conduct prevents abuses in their supply chain.

'Conserve Italia has an associated cooperative in Apulia [Puglia] that provides 50 per cent of the total amount of fresh tomato processed in our factory in Apulia. This cooperative associated to Conserve Italia guarantees that all the production is made in compliance with our code of ethics, which prescribes to the associated farmers to produce and harvest the tomato without exploitation of illegal labour,' a statement said.

'Moreover of the total quality processed in Mesagne [in Puglia] factory, 80 per cent is harvested by machines and only 20 per cent is harvested by hand, with workers that are legally employed by the farmers not associated to Conserve Italia. The suppliers subscribe a commitment with Conserve Italia that engages them to respect all regulations in terms of use of labour. Most of the workers employed by our suppliers are Romanians and Bulgarians,' the statement continued

La Doria, which through its subsidiary LDH Ltd, supplies many of the large UK supermarkets – including Sainsbury's, Tesco and Waitrose – with tinned tomatoes and other tomato products for 'own brand' items, has a major processing plant situated in Lavello, Basilicata, but denied using any migrant labour for its harvest.

The company said: '100 per cent of the tomatoes processed by La Doria are mechanically harvested where prices and contracts have been agreed, with approved growers in March this year prior to the planting of the crop. In the La Doria factories 100 per cent of seasonal workers are Italian and contracted to La Doria. La Doria have an ethical code which is not only followed throughout the group but also given to the contracted growers for them to respect. In addition a team of La Doria agronomists work closely with the growers to monitor closely all aspects of the cultivation and harvesting of the crop.'

A spokeswoman for Waitrose told the Ecologist: 'We take very seriously the welfare of all workers in our supply chain. Our expectations on labour standards and working conditions are outlined in our Responsible Sourcing Code of Practice, which all suppliers are expected to comply with – this includes branded suppliers such as Cirio.

'La Doria supplies us with canned tomatoes, and as a Waitrose supplier is engaged in our ethical compliance programme and expected to comply with our Responsible Sourcing Code... in addition, the tomatoes grown for Waitrose are mechanically harvested, which is much less labour intensive than manual harvesting, therefore bypassing the need for a large workforce.

'We build our supplier relationships on honesty, fairness and mutual respect and expect all our suppliers to respect the rights and well-being of their employees. As such we have immediately begun a thorough investigation to make sure our code of practice is being adhered to.'

Sainsburys said: 'Sainsbury's was a founder member of the Ethical Trading Initiative and expects all suppliers to follow our Code of Conduct for Ethical Trade, which incorporates the ETI Base Code... Sainsbury's has a clear approach to corporate responsibility to ensure that we do business in an ethical and sustainable way.'

A spokesperson for Tesco said: 'We work in partnership with our suppliers to ensure our products are sourced responsibly and will work to resolve any problems we find without delay. We have investigated these reports and do not believe our supplier is affected.'

Back in Basilicata, driving past the arid tomato fields around Venosa, Vincenzo Esposito is hoping their efforts to establish some sort of certification scheme will prove successful – soon: 'We've got immigrants living without water, without electricity... they are treated like animals.'

In the main square at the centre of Venosa, we take a break, waiting for contacts to come back to us with news. We order a coffee and a cheese and salad sandwich from one of few cafes open at this – scorching – time of day. The owner's very sorry, our translator says, however, 'he's run out of tomatoes.'

Additional reporting and translation: Gianluca Martelliano

**The names of all workers and farmers have been changed to protect their identity*

http://www.osservatoriomigrantibasilicata.it/
http://www.flai.it/
http://www.stopcaporalato.it/

Chemical warfare: **the horrific birth defects** linked to tomato pesticides

One of the children born with appalling deformities

The 'Immokalee babies' were born with severe deformities after their mothers were each exposed to pesticides whilst harvesting tomatoes. **Barry Estabrook** reports on the case that shocked the US

Tower Cabins is a labour camp consisting of about thirty drab wooden shacks and a few deteriorating trailers crammed together behind an unpainted wooden fence just south of Immokalee, a city in the heart of southwest Florida's tomato-growing region.

The community of poor migrant labourers is dreary at the best of times, but just before Christmas a few years ago, there were reasons for joy. Three women, all neighbours, were expecting children within seven weeks of each other. But in the lives of tomato workers, there is a fine line between hope and tragedy.

The first baby, the son of twenty-year-old Abraham Candelario and his nineteen-year-old wife, Francisca Herrera, arrived on December 17. They named the child Carlos. Carlitos, as they called him, was born with an extremely rare condition called tetra-amelia syndrome, which left him with neither arms nor legs.

About six weeks later, a few cabins away, Jesus Navarrete was born to Sostenes Maceda. Jesus had Pierre Robin Sequence, a deformity of the lower jaw. As a result, his tongue was in constant danger of falling back into his throat, putting him at risk of choking to death. The baby had to be fed through a plastic tube.

Two days after Jesus was born, Maria Meza gave birth to Jorge. He had one ear, no nose, a cleft palate, one kidney, no anus, and no visible sexual organs. A couple hours later, following a detailed examination, the doctors determined that Jorge was in fact a girl. Her parents renamed her Violeta. Her birth defects were so severe that she survived for only three days.

In addition to living within one hundred yards of each other, Herrera, Maceda, and Meza had one other thing in common. They all worked for the same company, Ag-Mart Produce, Inc., and in the same vast tomato field. Consumers know Ag-Mart mainly through its trademarked UglyRipe heirloom-style tomatoes and Santa Sweets grape tomatoes, sold in plastic clamshell containers adorned with three smiling, dancing tomato characters named Tom, Matt, and Otto. 'Kids love to snack on this nutritious treat,' says the company's advertising.

Giving up work was not an option. Herrera said that her boss, a subcontractor to Ag-Mart, told her if she did not work, she would be kicked out of the room that he was providing.

From the rows of tomatoes where the women were working during the time they became pregnant, the view was not so cheery. A sign at the entry warned that the field had been sprayed by no fewer than thirty-one different chemicals during the growing season. Many of them were rated 'highly toxic,' and at least three, the herbicide metribuzin, the fungicide mancozeb, and the insecticide avermectin, are known to be 'developmental and reproductive toxins,' according to Pesticide Action Network. They are teratogenic, meaning they can cause birth defects.

Safety violations

If they are used, the U.S. Environmental Protection Agency mandates 'restricted-entry intervals' (REIs in the jargon of chemical agriculture), the time that must elapse between when pesticides are applied and when workers can go into the fields. In all three cases, the women said they were ordered to pick the fruit in violation of REI regulations.

'When you work on the plants, you smell the chemicals,' said Herrera, the mother of limbless Carlitos. Subsequent investigations showed that Herrera worked in fields that recently had been sprayed with mancozeb twenty-four to thirty-six days after conception, the stages where a child begins to develop neurologically and physically.

Meza recalled: 'It has happened to me many times that when you are working and the chemical has dried and turned to dust that you breathe it.' Although regulations require that handlers of many of these pesticides use protective eyewear, chemical-resistant gloves, rubber aprons, and vapour respirators, the three pregnant women said they had not been warned of the possible dangers of being exposed to the chemicals. They wore no protective gear, unless you count their futile attempts to avoid inhalation by covering their mouths with bandanas.

Herrera said she felt sick the entire time she worked in the field. She described being coated in pesticides and suffering from dizziness, nausea, vomiting, and lightheadedness. Her eyes and nose felt as though they were burning. She developed rashes and open sores.

Giving up work was not an option. Herrera said that her boss, a subcontractor to Ag-Mart, told her if she did not work, she would be kicked out of the room that he was providing. Ironically, the impending arrival of her first child made it all the more important for her and her husband to have a place to live. She worked in the fields from preconception, through the early stages of gestation, right up until her seventh month

of pregnancy, only a few weeks before Carlitos's slightly premature arrival. Even after quitting the fields, she continued to hand wash the chemical-soaked clothes of her husband and her brother, Epifanio.

Jesus's jaw deformity proved not to be as dangerous as first thought, and doctors told his mother that the baby's condition would likely improve as he grew older. Violetta's parents had to mourn the death of their child. But after the birth of Carlitos, Herrera and Candelario's problems intensified. The end of the winter picking season in Florida was approaching, and the family would have to migrate north to find work. But Carlitos needed constant medical attention, which he was receiving through a local agency, the Children's Medical Services of Lee County. Even though he was an American citizen by birth, his parents were Mexican and had no documentation. Deportation was a real possibility.

Things took a turn for the worse when at three months of age the baby developed respiratory problems that made it difficult for him to breathe. He had to be flown from a hospital near Immokalee to Miami Children's Hospital. Lacking a car, Herrera and Candelario had to rely on rides from social workers to make the journey across the state, trips that took two and a half hours one way and could be undertaken only on days when Candelario was not required in the fields, where he still had to work to pay the rent. 'There was nothing we could do for our little boy,' said Candelario.

Legal help

One of the social workers helping Carlitos's parents realised that the family faced an insurmountable financial burden and needed legal help. The social worker contacted a local lawyer, who confessed that he would have been completely over his head with such a complex case. He did, however, have a colleague who specialised in catastrophic personal injury, product liability, and medical malpractice litigation.

He picked up the telephone and put in a call to Andrew Yaffa, a partner in the firm Grossman Roth, which has offices in Miami, Fort Lauderdale, Boca Raton, Sarasota, and Key West. Although they had no way of knowing it, Abraham Candelario, Francisca Herrera, and Carlitos had just caught what might have been the first break they had ever received in their hardscrabble lives. If you are injured in a car accident, hurt on the job, or the victim of a negligent physician, you could do no better than getting Andrew Yaffa to represent you.

As soon as I met him, I understood why Andrew Yaffa became such a successful lawyer. The day I visited, he was working out of the boardroom in his firm's Boca Raton office. 'I live out of a FedEx box,' he said. 'I serve every office we have.' That afternoon he had taken over the conference room table. File folders were strewn here and there. His laptop was open. His expensive suit coat was folded over the back of a chair, and his tie was loose. Every few minutes when a cell phone on the table warbled, he glanced at its caller ID and replaced it without missing a conversational beat.

In his early forties at the time of Carlitos's birth in 2004, Yaffa is widely recognised as one of the top lawyers in the state. He has won many multimillion dollar settlements in cases tried before some of Florida's toughest judges. One of Yaffa's competitors in Florida described him to me in an e-mail as 'a great lawyer…solid person… integrity…partner in a fabulous law firm…creative…innovative…bright… ethical…the works!'

Yaffa is tall and has the sort of telegenic good looks that would make him a shoo-in to play the role of the leading man if someone ever does a movie version of his life as a crusading attorney. His short dark hair is brushed back and moussed neatly in place, and I caught the merest whiff of cologne. His handsome face is tempered by a kind of Midwestern earnestness. (He's actually a Virginia native.)

Yaffa establishes an instant rapport, speaking with a soft, unwavering voice. When I asked him why he chose to take on such a long shot case as that of Carlitos Candelario, he eyed me the way he might stare at an uncooperative witness and said, 'I see a lot in my work. But when I see a child or a family that has been harmed and in distress, I don't need a whole lot more motivation than that.'

Initially, Yaffa could hardly believe what his friend had told him. He needed to see for himself and to talk to the child's parents. Were they people who would come across as credible? Would a jury relate to them? Would they even want his help? Leaving behind his usual car, a new BMW, to avoid drawing attention to himself, he got in the road-weary Chevy Suburban reserved for weekend fishing outings and trips to the beach with his kids and drove from his Miami office across miles of uninhabited saw grass prairies in the Everglades to the shabby two-bedroom trailer that the young couple and their tragically deformed child shared with seven other migrants.

When Yaffa knocked on the door, Herrera answered. He was struck by the fact that the petite, round-faced woman was barely older than a child herself. All the men who lived in the trailer were in the fields. Carlitos was propped up in a baby seat. Strips of drying meat hung from a clothesline stretched across the living room, and the humid air was rank and pungent. Flies buzzed

everywhere. When Carlitos began fussing, Herrera took the six-month-old baby out of the seat and laid him on the floor. An orphaned puppy that the trailer's residents had adopted came bouncing around, and the child watched it, smiling and cooing.

'No arms, no legs'

The puppy yipped, pounced, and started nipping at the baby. Carlitos began to scream, and Herrera rushed to pick him up. Yaffa was powerfully affected. The child, who did not even have the ability to flick away a fly or push back against a puppy, faced a lifetime of need. 'The pesticides got into her system and affected this child that was forming and lo and behold, he ends up being born with no arms and no legs,' he told me.

Speaking in Spanish, he tried to draw out Herrera, who spoke very little Spanish herself. As is the case of many migrant farmworkers, her first language and the one she was most comfortable communicating in was a native Indian dialect. Yaffa explained that a social worker had contacted him, and he was there for one reason—to help her. He told Herrera that there was no pressure for her to work with him. As is the norm for lawyers in his field, he would bear all the legal expenses himself and be paid only by taking a percentage of anything they won.

When Herrera finally nodded her head, Yaffa vowed that he would do everything in his power to help his new client. But even a lawyer of his track record and courtroom acumen had his work cut out for him. Because of all the nearly infinite variables—heredity, exposure to chemicals at other job sites, possible smoking or drug abuse, environmental factors—cases linking pesticide exposure to birth defects are notoriously hard to prove.

Instead of pursuing the conventional approach by trying to determine the chemical that caused the damage and suing the company that made it, Yaffa decided to do something he had never done: He would try to get compensation from the corporate farm where Herrera had worked. In essence, he would try the entire modern agricultural industry and the chemical-based philosophy on which it is founded.

Extracted from the 'Chemical Warfare' chapter of Tomatoland: How Modern Industrial Agriculture Destroyed Our Most Alluring Fruit by Barry Estabrook, published by Andrews McMeel Publishing http://politicsoftheplate.com

Consumers and farm workers at risk from toxic pesticides sprayed on salad

COMMENT: More than a 100 pesticides are licenced for spraying on the humble lettuce. As well as posing a threat to consumers, workers harvesting the crop face contamination and poisoning, says **Nick Mole**

Pesticides of one sort or another are used to produce 95 per cent of the produce grown in the UK and are promoted by the companies that make them as being the only way to ensure that yields remain high, prices remain low, and that growers can make a living. However, this is far from the truth, and many studies show that it is possible to maintain yields and profitability with reduced pesticide inputs by working with nature rather than against it.

The problem is that reliance on agrochemicals, and pesticides in particular, is hardwired into our current agricultural system. Factors such as the demands of supermarkets for perfect produce, the limited range of varieties available to farmers, monocrop systems and crop rotations that create ideal conditions for pests to develop all place pressure on farmers to use more and more pesticides with devastating consequences for the environment and human health.

From field to fork the use of pesticides ensures that people and the environment are exposed to potentially harmful risks from these toxic chemicals that are designed to kill. In the UK over 20 000 tonnes of pesticides are sprayed on farmland annually to grow the food that we eat.

Toxic threats

A great number of these chemicals are potentially toxic to humans, pollute waterways and have harmful effects on our biodiversity as has been seen by the recent loss of bees and other pollinators here in the UK and elsewhere.

We know that the impacts of pesticides are incredibly serious. In 2008, a European parliament commissioned study concluded that the families of farm workers are far more susceptible to childhood leukaemia's than the general population. It is also estimated that 25 million agricultural workers suffer at least one incident of pesticide poisoning annually. And you can add to this all the unreported poisonings of bystanders and residents that occur throughout the pesticide spraying season.

All along the production trail people – whether it is the grower, the picker, the packager, local residents and bystanders or the end consumer – are exposed to pesticides.

> … the insecticides are taken up into the structure of the plant as it grows making the plant itself poisonous to its pests.

Pesticides are used from the very earliest stage of production – and can be applied to the very seeds themselves. Dressing seeds with pesticides prior to planting is touted as a 'safe' way of applying pesticides that will reduce human exposure. Under this approach, the insecticides are taken up into the structure of the plant as it grows making the plant itself poisonous to its pests. What this also means is that the pesticide remains in the plant even after harvesting and no amount of washing or cooking will eradicate it.

But farmers and farmworkers are also exposed through handling the seeds. Many do not realise that the seeds are toxic and they – and neighbouring residents – can be contaminated by the pesticides covered dust that is kicked up and dispersed.

Exposure risks

Other fungicides, herbicides and insecticides are applied throughout the growth cycle of the plant to opening up yet further potential routes of exposure. The pesticide applicator, while at greatest risk, is usually required to wear protective equipment to reduce exposure. But others are not so lucky.

One particular group, that has been neglected by successive UK governments, is rural residents. People who live in the countryside can be exposed to pesticides during and after spraying in fields close to their homes. This exposure can go on for years and increases the risk of chronic illnesses including some cancers and neurological diseases like Parkinson's.

Workers in the fields are also open to exposure as they walk amongst the crops and particularly if they are put in the fields soon after the crops are sprayed.

In particular, labourers employed to harvest the crops can be exposed to pesticides that remain on the crops whilst they pick them. Even after leaving the field, exposure is still possible on clothes that have been contaminated with pesticides taken home for washing or often used again the next day.

The problems can be exacerbated by the fact that many of the labourers used to harvest and pack produce in the UK do not have English as their first language and so cannot understand warnings about what they need to do to minimise or avoid the risk of pesticide contamination. Their status also often limits their ability to report any incidents of pesticide poisoning that might occur and so these incidents go largely unreported in the UK.

And finally, the end consumer will come into contact with pesticides as residues on the food that they eat. The DEFRA Expert Committee on Pesticide Residues in Food (PRiF) samples a range of produce each year. This sampling shows that 30-40 per cent of the food purchased in the UK has pesticide residues present on it - and often multiple residues are present.

Chemical cocktail

Multiple pesticide residues are particularly concerning because some pesticides can interact with one another and increase their toxicity – the so-called cocktail effect. If we take lettuce as an example there are 122 registered professional pesticides that can be used for growing lettuces in the UK of those:

- 20 are fungicides
- 45 are herbicides
- 57 are insecticides

Amongst them are some particularly unpleasant actives:

Mancozeb, a fungicide that is also classified as a carcinogen, a developmental or reproductive toxin, a suspected endocrine disruptor and a potential groundwater contaminant. Pirimicarb, an insecticide and also classified as a carcinogen and a cholinesterase inhibitor. Lambda-cyhalothrin, an insecticide and suspected endocrine disruptor. Cypermethrin, an insecticide and classified as a possible carcinogen and suspected endocrine disruptor.

Fungicides are applied to the soil even before sowing. If the lettuce is grown under cover, it is possible that two to three applications of fungicides could be used as well as an insecticide.

The Pesticide Action Network UK has analysed the figures made available by PRiF between the years 2000 and 2006 and found that of 826 non-organic lettuces tested, 36.7 per cent contained pesticide residues with 19.5 per cent containing a cocktail of residues.

Because lettuces along with many other crops such as soft fruits are considered to be high value crops, farmers will often use pesticides prophylactically in a bid to head off pest damage rather than to treat an existing pest problem. Unnecessary applications result in higher usage and on the whole don't ensure that the crop will actually be any better protected.

Significant reductions in pesticide use are easily achievable simply by changing crop rotations, or using resistant varieties can dramatically. But this requires a fundamental shift in the approach away from pesticides first to pesticides last. This means that pesticides would only be used when all other methods have failed and then they would be used in a targeted manner ensuring that what is used is the least toxic option available. It requires working with, rather than against, nature and if we do so, we will all benefit.

Nick Mole is a senior campaigner at Pesticide Action Network

Toxic fallout as activists challenge strawberry industry's pesticide use

Faced with the potential use of a dangerous pesticide methyl iodide to spray crops in their backyards, a group of Californian teenagers decided to stand up to the might of industrial agribusiness. Rosie Spinks reports

Local communities were worried about the health impacts of pesticide spraying

It's a short walk - about five or six steps - from the neat and cosy kitchen of Carolina Rios's family home to the edge of the strawberry fields that serve as her backyard. On a calm Monday evening in April, Carolina's father, Sabino (both pictured below), stands between two rows, his crisp white sweatshirt blending with the mist hanging over the farm.

Bending down, he places a ripe berry between two fingers and, with a flick of the wrist and

a firm yank, plucks it from the plant. That's the best way to pick a strawberry, he says. Sabino would know. He and his wife have been piscadores, or strawberry pickers, for 20 years, since emigrating here to Watsonville, California, from Mexico.

The berry that Sabino has picked in his demonstration is of a certain type: fresas chiquititas, he calls them. Small strawberries. They're small because the fields in which they grow are too close to the family's home to be treated with certain pesticides.

Sabino points to other fields visible from where he stands.'Fresas más grande pero más peligroso,' he says. 'Bigger strawberries, but more dangerous.'

Sabino and his wife have long known that the pesticides routinely sprayed where they live and work are potentially toxic. It's why they wash their work clothes separately from their children's clothes. However, they recently learned that a new fumigant approved for use in California may present an even greater threat to their family's health. They have their daughter to thank for that.

'When I came home from school and told them about it, it was the first time they had heard of methyl iodide,' 17-year-old Carolina explains. Her parents nod in agreement.

In December 2010, the California Department of Pesticide Regulation (DPR) approved methyl iodide for use in the state. This despite fierce and ongoing opposition from scientists, environmental advocacy groups, and agricultural communities, who say methyl iodide poses a danger to farmworkers and residents—though not to consumers, since this particular fumigant degrades long before it can leave residue on a crop. Meanwhile, the manufacturer, Arysta LifeScience, insists it's safe.

For Carolina and her peers, there's no debate. They believe that if methyl iodide is used in their community, it will end up in the groundwater they drink, in the air that dries their laundry, and on the boots that their parents wear home from the fields.

In the months since methyl iodide's approval, no growers in the Watsonville or neighboring Salinas area have applied for the permit to use the pesticide. These young activists have had something to do with that. And they intend to keep it that way.

'My house is literally surrounded by the fields,' Carolina says frankly. 'We're doing this to protect our homes and our families.'

Big business

Thanks to a Mediterranean climate and near constant marine layer, Watsonville and Salinas produced nearly 90 million trays of strawberries last year—roughly half of California's $2.3 billion strawberry industry. Central Coast berries can be found in produce aisles in New Jersey, Tokyo, and Mexico almost year-round.

Strawberries are a high-value crop, but growing them is a risky business. An unproductive acre (wiped out by a soil-borne pathogen, for instance) can mean a loss of tens of thousands of dollars. To avoid this, growers have routinely applied methyl bromide on their fields, a soil fumigant used prior to planting that essentially renders the soil—once teeming with nematodes and microbes—lifeless, good only for supporting crops.

Taking a stand

Although applying methyl bromide is beneficial for strawberry growers' bottom line, it isn't so great for the ozone layer. Thus, in the late 1980s, 196 nations signed the Montreal Protocol, agreeing to phase out the use of ozone depletors such as methyl bromide as soon as a suitable alternative was developed.

Methyl iodide is that alternative. The U.S. Environmental Protection Agency gave it federal approval in 2007, but the State of California required a separate review process. The DPR approved it late last year after what the agency called the 'most extensive evaluation [of a chemical] in the department's history,' imposing regulations much stricter than the EPA's.

Impenetrable tarps, limited application rates, wide buffer zones, certified applicators, mandatory permits—these are some of the stringent conditions the DPR set for the fumigant. The agency set the acceptable level of exposure for a farmworker at 96 parts per billion, which is 120 times higher than the level recommended by its own toxicologists. DPR officials maintain that this level, along with the required precautions, means methyl iodide can be used 'without exposing workers, the public and environment to harmful levels.'

Innocent strawberries - but at what cost?

Airborne transmission, groundwater accumulation, developmental effects, thyroid disruption, cancer—these are some of the potential consequences that led an independent scientific review committee, commissioned by the DPR prior to its approval of methyl iodide, to conclude that 'there is little doubt that the compound possesses significant toxicity' and would thus result in an 'adverse impact on the public health.' Committee chair John Froines went even further, saying there is 'no safe level of release' for the chemical.

Arysta LifeScience says that no incidences of methyl iodide-caused illness have been reported in the handful of states where the chemical is currently being used. Devika Ghai of Pesticide Action Network says that claim is misleading. The most damaging health effects, Ghai notes, will likely surface years from now, after prolonged exposure to low doses. 'It's all very well to say "no negative health effects reported," but no data does not mean no effects,' she says. 'The truth is more complex and, unfortunately, more ugly.'

To date, the opposition to DPR's registration of the chemical has been enough to warrant reconsiderations at both the federal and state level. The EPA opened a second public comment period, and California governor Jerry Brown resolved to take 'a fresh look' at registration of the chemical. Permits to apply methyl iodide are currently available, though only a handful of growers have applied for them in the state. However, activists across the state are trying to persuade the governor, via lawsuits and grassroots efforts, to reverse the DPR's approval.

Homegrown activism

Sitting at their lunch table at Watsonville's Renaissance High School on a bright Tuesday morning, Carolina and her close friend Joanna 'Jojo' Magdalena talk about things you would expect to hear from high school seniors—homework deadlines, graduation, summer jobs. While both girls seem shy, their actions over the past few months have been anything but.

Like Carolina's home, her school is surrounded by agricultural lands. At most schools, it's cool to be an athlete or a dancer or a debater. These days at Renaissance, it's cool to be an activist.

The girls pick disapprovingly at lifeless hamburgers wrapped in foil, a product of the subsidised free-lunch program, which most students at the school dislike and, of course, are trying to change.

On paper, Renaissance appears an unlikely breeding ground for student-led activism. A continuation high school, it's a place for students who have fallen behind or struggled at other schools. Many of its 200 students, 95 percent of whom are Hispanic, attend only briefly, hoping to get caught up on credits, or as a last chance to earn a diploma. More than 75 per cent come from homes that qualify as low income.

A walk around campus though, reveals a high level of engagement. Students are eager to tell visitors about things like the hip-hop chess federation, which blends music, chess, and martial arts to promote nonviolence and positive life skills. Others cook stir-fry with the harvest from the school's garden. One young man talks enthusiastically about the new dance crew he's organising.

And then there's the political activism, at the center of which is an English teacher named Jenn Laskin, who invokes the phrase 'sí, se puede' ('yes, you can') with unrelenting frequency. Laskin's ability to motivate young people appears innate as she walks through campus casually conversing with students at lunchtime.

'Be the lawyer in the boardroom who is suing Monsanto,' she tells young activists, 'not the hippie in

the street who's protesting against it.'

Jenn, as her students call her, hates it when Watsonville youths end up in the prison system for minor offenses. She hates it when her students get caught in the 'linguistic middle ground' of no Spanish at school and no English at home. And she hates that eight schools in the district are surrounded by agricultural land that's regularly doused with pesticides.

At the lunch table, Carolina and Jojo explain that their first awareness of methyl iodide came from an extra-credit opportunity offered by Laskin: They attended a community forum about the chemical sponsored by the Watsonville Brown Berets, an activist group whose members fight for the 'liberation and amelioration of [their] barrios.'

'At this meeting we got mad and decided this was a serious problem, so we formed a school club,' says Jojo, whose mother works in the strawberry industry.

'Renaissance is in the middle of fields, so it was pretty easy to get everyone to sign the petition.'

After getting their schoolmates on their side, Carolina and Jojo, with the help of the Brown Berets and other community groups, went further. They made anti–methyl iodide presentations to the school board, the Watsonville City Council, and the mayor, all of whom adopted formal resolutions against the fumigant. They handed out bilingual flyers at the Friday mercado, got campesinos to sign their petition, and talked about the health risks to their moms, dads, brothers, sisters, tias, and t&iacuteos—anyone who would listen.

Carolina and Jojo were well on their way to embodying Laskin's bold style of activism when they learned a hard lesson. On December 1, 2010, the day after the girls' triumphant presentation to the Watsonville City Council, the DPR announced its approval of methyl iodide.

Enthusiasm for the cause lulled at school, Jojo says, as some students felt that all of their work was for nothing. Still, Carolina and Jojo maintained their resolve. 'The thing about being an activist,' Jojo says, 'is that when you get mad, you don't go out there and fight with violence; you go out there and organise.'

Laskin is proud of her students' efforts and their growing confidence that's emerging alongside their activism. She says the girls' efforts, and that of other community groups, are one reason why methyl iodide has yet to be used in Watsonville and Salinas.

'If a grower registers to use methyl iodide in Santa Cruz or Monterey County, they will immediately become a target for sustained nonviolent direct action against their company, at their offices, in their fields,' Laskin says.

'Everyone will know that this company is planning on using methyl iodide, that they are going against all of these resolutions and public opinion.'

> This grassroots activism is part of a larger fight for environmental justice

A larger struggle

Carolina and Jojo may not realise it, but this grassroots activism is part of a larger fight for environmental justice by Latinos. According to a 2008 Sierra Club survey, the first-ever environmental poll to specifically address this community, close to 40 percent of Latinos in the United States have health problems linked to environmental causes.

'This is a community that is most punished by environmental degradation,' says Javier Sierra, a Spanish-language columnist for the Sierra Club. 'Poor and minority communities are always burdened with the most undesirable places to live because it's much cheaper to set up shop there.'

The average salary for a U.S. agricultural worker is roughly $13,000 per year, according to U.S. Department of Labour statistics. Strawberry pickers like Sabino receive an hourly wage of about $5—well below the minimum wage—plus $1 for every 8- to 12-pound tray they fill.

Harvesting the favourite fruit

Both Carolina and Jojo see the harsh economic realities of an agricultural livelihood firsthand. Although Jojo realises that her mom supports her activism, she also realises that such support can only go so far.

'Knowing how the financial situation is around here, it's really hard for someone like my mom to acknowledge what's really going on,' Jojo says. 'On one side, we're trying to take care of our health and safety. But on the other side, we're trying to survive financially.

But they say it's safe

With words like 'carcinogen' and 'neurotoxin' trailing nearly every mention of methyl iodide, you'd think its manufacturer Arysta LifeScience wouldn't be so eager to talk about its product. However, Jeff Tweedy, Arysta's head of business development, seems to be waging a public relations offencive on behalf of the company.

Read a favourable mention of methyl iodide—either in a letter to the editor or in the comments section of an online article—and it's likely been written by Tweedy. Seeking out interviews with journalists, Tweedy combats unfavourable claims of the company's product by citing the chemical's other manifestations.

'Do you know who the largest manufacturer of methyl iodide is?' Tweedy asks in a February interview. 'The ocean. . . . It's a naturally occurring substance. Iodide is part of the daily diet. We need it or our thyroid won't function properly.'

Tweedy explains that in agricultural use, methyl iodide is combined with water and then applied via drip irrigation. After application, the field is covered with a tarp and, according to the DPR, the chemical 'is then allowed to degrade to low levels safe for crop growth,' usually for about two weeks.

> The factors that make methyl iodide so effective are the same that make it unsafe

Tweedy insists that these precautions, along with the DPR restrictions, are sufficient. 'We've got stringent stewardship, and we work very hard to make sure people are trained properly,' he says. 'I believe that if the product is applied per directions, it can be applied safely and we can maintain that urban balance with agriculture.'

The problem, according to critics of methyl iodide, is that the people who make and market the pesticide are working, living, and breathing in a very different world from the residents of Watsonville. Arysta's world is a place where tarps stay put, winds don't change direction in the middle of application, and eight-year-old kids always heed the skull and crossbones warning them to stay away from recently fumigated fields.

Watsonville's world is real, full of accidents and unforeseen effects. It's one where a lack of public transportation means that kids cut through the fields on long walks to school. It's one where a portion of residents get their water supply not from pipes but from easily contaminated wells. And it's one where farmworkers don't always know what they're being exposed to at work.

Emmanuel 'Manny' Ballesteros is another young activist who works with the Watsonville Brown Berets. He says that growing up in and around the agricultural fields of Watsonville, where pesticide usage has long been the norm, his fear of exposure is a daily reality.

'I hate just going somewhere, wearing my hoodie, and then picking up my little niece when I get home, and then suddenly I'm thinking, "Did I make her sick?"'

Manny has even more reason to

Children are among those at risk from spraying

worry about methyl iodide than he did with its chemical predecessor, says Edward Loechler, a molecular biologist at Boston University. Loechler, along with eight other scientists from diverse disciplines, sat on the independent scientific review committee that the DPR commissioned to evaluate the existing science around methyl iodide. He says that because of the chemical's volatility, it's highly likely that it will rise into the air in plumes after being applied to the soil.

'In terms of toxicity, would I want to walk into Room A with methyl bromide or Room B with methyl iodide?' Loechler asks. 'I'd walk into the methyl bromide room. Methyl iodide is just more reactive.'

The factors that make methyl iodide so effective are the same that make it unsafe, contends Anne Katten, staff scientist with the California Rural Legal Assistance Foundation and a trained industrial hygienist.

'There's a double-edge sword with all fumigants,' she says. 'They need to be highly volatile and toxic to work and are applied at high concentrations, compared to other pesticides. But that also makes them harder to control, with more immediate and long-term health effects.'

Loechler dismisses Tweedy's comparison of methyl iodide to naturally occurring iodide, which can be found in table salt. 'That's not even apples to oranges—it's apples to swing sets,' Loechler says. It ignores the obvious fact that 'a little bit of something is a good thing, but too much is a bad thing.'

Arysta's data is sound, Loechler says; it's the interpretation that's skewed. 'A lot of the science Arysta did was well done, and so I don't want to be critical of the data itself,' he says. '[But], if a graduate student came to me and interpreted the science the way the Arysta scientists did, I would send them back to third grade.'

Because pesticides are the lynchpin of the region's strawberry industry, farming without fumigants such as methyl bromide or methyl iodide would almost certainly mean lower yields, smaller berries, a shorter growing season, and fewer jobs for an already economically stressed community.

Even if large-scale growers adopted more ecologically sound practices—such as integrated cultivation methods and more-resilient crop varieties—production would almost certainly fall. This would probably mean no more strawberries in New Jersey markets in January. But that might not be such a bad thing, argues Steve Gliessman, a farmer and professor emeritus of agro-ecology at the University of California, Santa Cruz, who was a pioneer in developing organic cultivation methods for strawberries.

'The grower and consumer are so separated, they're both being exploited,' Gliessman says. 'We need to put the 'culture' back into agriculture.'

A brighter future

After a long day at work, Sabino sits with his family at the kitchen table, the smell of the evening's finished dinner still lingering in the air. His three-year-old daughter (pictured right) hangs from his neck with that look of adoration that little girls only have for their dads.

Sabino explains that he doesn't like working with chemicals that are harmful to his kids and himself, but says that he has little choice. He needs the work. When asked if he would ever sign a petition against methyl iodide, he immediately says yes—as long as he would be able to do it after work hours or on his lunch break. He wouldn't sign it on company time. He wouldn't want to risk getting fired.

If he did get fired, he says that he would go work somewhere else, maybe with lettuce or broccoli. But he's well aware that pesticides would be used on those fields too. If he had the opportunity to work on a rancho orgánico, he would take it, but he says there just aren't enough of those around.

Sabino does this hard work so his children won't have to. 'I really don't want my kids to work bent over all day,' Sabino says in Spanish. 'They have to study so they won't have to pick berries.'

If Carolina ever did end up working as a farmhand, he jokes, she should pick raspberries, because at least they grow on stalks and not the ground. Carolina laughs at the prospect. She doesn't plan on a life of agricultural work. She plans to go to college to study sociology.

In Spanish, the verb agachar, 'to bend over,' has two meanings: to physically lower oneself to the ground, and to lower oneself before power. So far, much to her parents' delight, Carolina has done neither.

This article was oringinally published online by Sierra magazine, the national publication of the U.S. Sierra Club, in May 2011.

The Harvest: new **film reveals scourge of** child labour in US farming

Did you know that child labour in US agriculture is common? Photo: The Harvest

Despite campaigning to reduce child labour internationally, the US is home to at least 230,000 child labourers toiling in the fields to pick blueberries, tomatoes or cotton. **Rosie Spinks** reports

From the cocoa plantations of the Ivory Coast to the textile factories of India, the prevalence of child labour in the world today is staggering. The UN estimates that roughly 250 million children are subjected to a life of work instead of schooling, with nearly half that number working full-time.

But now a new film - The Harvest - documents the occurrence of this trend where few would expect to find it: the United States agricultural industry.

U Roberto Romano is an award-winning American filmmaker who spent over a year documenting the lives of three migrant worker families and their children across the US. He said that while he was aware of child labour from his work in other countries, what he found in the US was shocking.

'I, like many people, thought this was a problem that affected brown skin children in the rest of the world', Romano told the Ecologist. 'I didn't expect to find it here in [the US] with children that were American citizens'.

As the film reveals, not only is child labour happening in the US food system, it's perfectly legal. This is due to an antiquated exemption built into the Fair Labour Standards Act of 1938, the landmark piece of US legislation that established standard practises like the 40-hour work week and a minimum wage. Roberto explains that agriculture was excluded because of the different food system at the time.

'When the fair labour standards act was written, a huge portion of our food was produced on family farms, so this was designed to help families who needed children to work on their farms', Roberto said.

Like those profiled in the film, the 230,000 thousand children working in US agriculture today are no longer helping on family farms, which now produce a negligible portion of US agricultural output. Instead, they and their families are included in the 40 per cent of industrial agriculture workers who must move with the harvests if they want to have jobs. Whether it's blueberries in North Carolina, tomatoes in Florida, or cotton in Arkansas, these families leave their homes for portions of the year and, because of a lack of childcare options, bring their children with them.

'The larger corporations externalise their responsibility and turn a blind eye', Roberto said. 'And a lot of the smaller farmers I dealt with don't feel like they can refuse the families that extra income if parents bring their children to work. It's a system that is designed to perpetuate a cycle of poverty and failure'.

In 2009, the United States Department of Labour published a report documenting the goods that are produced as a result of child labour worldwide in an attempt to 'inform the public of the significant incidence of child labor and forced labor'. The report lists myriad goods - as diverse soap, sugarcane, and tin

- coming from more than 45 nations, however it does not include United States.

'There are dozens of goods [on that list] that I have seen worked on or produced with child labour in this country', Roberto said. 'I have long maintained that when it comes to agriculture in America is a third world country. Our standards are those of a developing or less than developing country'.

Roberto hopes that his film will continue the growing debate on what he sees as the troubling 'culture of agriculture' in a country that spends the lowest percentage of individual income on food in the world. While he endorses consumer-based responsibility and buying food that's organic and from local producers, he says that's not quite enough.

'I have asked that people remember that they are both citizens and consumers', Roberto said. 'They should write to their congressman and they should support legislation that puts an end to this inequality'.

Roberto hopes that his film will continue the growing debate on what he sees as the troubling 'culture of agriculture'

Bitter harvest: how migrant workers on UK farms are 'still exploited'

Fresh allegations of abuse and poor conditions for migrants have emerged

Migrant workers are vital for meeting the UK's demand for year-round fruit and vegetables. But despite improvements since the Morecambe Bay tragedy, allegations of poor conditions and abuse in the horticulture sector persist. Andrew Wasley reports

'There's no justice, there's discrimination... people are treated like cattle, not human beings, I never expected it could be like this,' Irena Jaysenka says, before breaking down into a flood of tears. Irena's a migrant worker from Lithuania who until recently was employed in the UK's horticulture sector. Like thousands of others – from Poland, Romania, Bulgaria, Ukraine and beyond – she left her homeland in order to earn

a living harvesting British fruit and vegetables. But Irena says her experience – and that of others – has been marred by exploitation and harsh working conditions.

She became unemployed after being dismissed – unfairly and without warning, she says – from her job packing tomatoes for a company supplying UK supermarkets. She'd been away and upon her return was told by the agency that employed her that there was no more work available. She managed to find a job picking strawberries at another farm but was sacked, she claims, after taking time off to attend a union meeting. 'I didn't encounter these problems at all in Lithuania in my whole working life,' she says, sobbing again.

In the seven years since the Morecambe Bay tragedy, which saw more than twenty Chinese workers drown whilst harvesting cockles, conditions for migrant workers employed in the UK's agricultural and food sectors have had a spotlight shone on them like never before. The deaths led to the introduction of the Gangmasters Licensing Act and the establishment of the Gangmasters Licensing Authority (GLA) to regulate labour providers across the food processing, packing, agricultural, horticultural, forestry and shellfish gathering sectors. The GLA aims to ensure workers receive a minimum wage, adequete accomodation, safe transport, contracts and decent working conditions.

The tough stance of the agency and its high profile operations – it uncovered more than 800 workers being exploited, prosecuted a dozen companies and revoked the licences of over 30 gangmasters in one recent 12 month period – combined with an industry-wide drive to clean up its act is widely believed to have curtailed many of the worst abuses that would have been common a decade ago. Back then, according to one industry source, some of the UK's major horticultural growing regions – Lincolnshire, West Sussex, Kent – were more like 'the wild west, with criminals and gangsters running the show and everybody turning a blind eye'.

But an Ecologist investigation has uncovered fresh allegations that working conditions for some migrant workers employed in Britain's fields, greenhouses and packing plants remain poor, with exploitative practices continuing. Additionally, there are concerns that funding cuts could reduce the GLA's operational ability – the organisation itself acknowledges it faces 'a major challenge' to continue its work with the prospect of fewer resources.

The 'line of death'

'In the beginning it was fine,' says Irena, describing her time working in the Kent packhouse boxing up tomatoes. 'Then they brought in a computerised system for weighing the tomatoes... weigh, check, pack, weigh, check pack... we had to do 3-4 punnets in a minute. If you had three splits [of tomato packaging] in a day you were out. Everything had to look perfect – if not you had a problem.'

Irena describes how there would be fourteen people in a line, working from crates of tomatoes weighing 15-20 kilogrammes, and that they would not be allowed to talk. Most days she worked between 8 and 9 hours, with one half hour break; her longest shift was 14 hours. 'Line number two, that was known as the line of death,' she says. 'There was a Lithuanian supervisor and you'd be put with her to be dismissed.' Despite being employed at the same packhouse for more than two years, packing 'thousands of punnets in a day' Irena – whose son lives in London; her husband remains overseas – says she was sacked after returning from a trip abroad and being told by the agency employing her that 'there's no more work.'

She was offered no possibility of recourse with no right of reply or appeal process. She believes that her activities for a trade union played a role in the agency's decision to dismiss her, especially as a number of grievances had recently been made, heightening tensions.

Irena found work at another Kent farm supplying fruit and vegetables to supermarkets but says treatment of the migrant – mostly Polish, Bulgarian and Latvian – workers was even worse. She started work harvesting strawberries but was switched to picking vegetables after developing problems in her fingers. Irena was paid the minimum wage – £5.93 – and charged £32 per week for accomodation in a caravan, sharing with four others. She worked six days a week.

She claims that workers at the farm were sacked daily if supervisors thought they were not productive enough: 'The agency would calculate what everyone [in the team] had picked, then the least performer would be sacked,' she says. 'They'd be eight people in a plastic tunnel when you'd go for a

break but by the time you get back four could have been sent back to the caravans if work was not up to scratch.'

Additionally, Irena says, workers were expected to walk between different fields – sometimes considerable distances, taking 20 minutes or longer – but the time spent doing so would be unpaid, with the agency deducting the total 'transit' time from wages. 'There would be a climate of fear... I was dismissed because I came to a union meeting,' she says.

'Systematic' exploitation

Campaigners believe that experiences such as Irena's are far from unique. The Unite union recently launched a major campaign to force horticultural companies to employ workers on a more permanent basis, phase out casualised labour, and allow unions greater access to workplaces. Industry representatives have branded the demands 'unrealistic' because of the seasonal nature of production and the demands of modern supply chains.

In an opening salvo earlier this year, Unite accused Thanet Earth – one of Britain's largest salad producers supplying Tesco, Asda and Marks and Spencer – of operating 'sweatshop labour' conditions at its vast Kent greenhouse complex. Although a subsequent GLA inquiry largely cleared the employment agencies supplying Thanet of any wrongdoing – in two cases no evidence of abuses was found, in a third case, non compliance with some GLA standards was discovered – Unite says problems persist, stating that some workers have no access to appropriate grievance prodecures. The union claims at least 70 grievances submitted by migrant workers have yet to be resolved.

Dave Weeks, Unite regional officer, said: 'It is Unite's belief that these workers deserve at least the basic protection of access to a grievance and disciplinary procedure and the positive right to be represented by a trade union. We will continue to put this case to the employers on site and to their customers, the Ethical Trading Initiative and others.'

The union now plans to roll out its campaign to other horticultural suppliers across the UK, where it believes exploitative practices are 'rife'.

> Pickers regularly complaining of suffering skin problems after harvesting plants without gloves or other protective gear.

The Ecologist has learnt that at least two other major UK suppliers of fruit and vegetables are now the subject of allegations over poor conditions for migrant workers. At one large fruit farm in the South East, former employees – and a gangmaster – have alleged that migrant workers are being 'systematically' exploited, including claims of daily dismissals for 'not performing well enough', bullying, and ongoing problems with workers' pay.

And a former supervisor at a sizable salad producer, also in the South East, has described living and working conditions for some, mainly Polish and Bulgarian, workers as 'dreadful'. According to the supervisor, some migrants, especially those just arriving for a season's employment, are temporarily accomodated on a holiday park in caravans about to be scrapped for being 'too run down for tourists.'

'There would sometimes be eight or ten workers squeezed into a truck [caravan] designed for only four...', the supervisor said. 'And they are dirty, some without proper heating or beds. Sometimes [workers] would complain of having to share rooms and being kept up at night by other migrants drinking or having sex.' These workers had more than £30 deducted from their wages each week to pay for 'living in this squalor,' he claimed. He cited previous cases of casual workers spending the summer months 'living on the beach' to avoid incurring accomodation fees for substandard caravans.

The supervisor also alleged that health and safety procedures were 'virtually non-existant' at peak harvesting periods at the firm's salad farms, with a number of accidents reportedly 'covered up' and pickers regularly complaining of suffering skin problems after harvesting plants without gloves or other protective gear. They blame the reactions on pesticides or other chemicals applied during cultivation.

Similar complaints were made by workers at Thanet: an unpublished dossier compiled by Unite notes that workers claim to have suffered rashes and skin complaints arising

from work in a tomato-cultivating greenhouse – one worker cited this as a reason given by his agency for his dismissal – whilst others had reportedly signed a petition relating to an alleged lack of provision of drinking water in greenhouses. Thanet Earth declined to comment on specific claims.

Supermarket pressure

Pressure from major food retailers on horticultural suppliers to provide – at short notice, and around the clock – large volumes of vegetables or fruit is at least in part to blame for ongoing problems, say campaigners. Many suppliers rely on a highly flexible, disposable workforce in order to meet the demands of the 'just in time' ordering system now universally adopted by the large supermarkets.

Growers say it's unrealistic for them to switch from using casual, migrant labour because they frequently require workers for no more than six or eight months of the year and therefore need flexibility. 'There's no realistic way a sizable supplier [in this sector] can have all of its workforce on permanent contracts; can you imagine, they'd be paying for a third of the year where very few workers are even needed,' one farm manager told the Ecologist.

'We cannot move to a more permanent employment model and stay in business. Thanks to seasonal demand, weather forecasts and events such as sporting fixtures, our requirement for labour fluctuates to such an extent that it is impossible to predict how many people we need on site further than 24 hours in advance. To permanently employ more workers than we already do would be economic suicide. Every business in our industry works this way too,' Thanet Earth said in an earlier statement.

Growers and industry bodies maintain that recent years have seen improvements in conditions for migrant workers. They point to apparent success stories such as G's Marketing in Cambridgshire – one of the UK's largest suppliers of salad and vegetables and one of the biggest employers of migrant workers in the horticultural sector. The company, part of the Shropshire Group, which supplies lettuces, beetroots, celery, leeks and onions to Britain's supermarkets, has won accolades from within the horticulture sector for its treatment – and unique facilities – for up to 4,000 migrant workers it employs each year.

'The Shropshire Group has built an entire village for its staff, complete with social club, football pitches… it's exemplary,' the owner of one horticultural company said. 'Since the GLA licensing system came in we're seeing fewer examples of bad practice. Even in major hubs we've seen improvements. There's still some problems with migrant workers coming out of the big cities such as Manchester but the situation has improved.'

> …the GLA uncovered more than 800 workers being exploited across the UK, prosecuted twelve companies and revoked the licences of 33 gangmasters.

Rob Orme, Chief Executive of Concordia, a charity which has been supplying students to work on British farms since 1943, said he believes the industry has cleaned up massively in recent years. 'I'd like to think that the problems have gone away and that things are getting better,' he said.

David Camp, spokesman for the Association of Labour Providers (ALP) said that following the high profile scandals that rocked the sector early in the last decade, all parties – farmers, processors, the

Horticulture work is tough and often badly paid

labour providers, retailers – have been increasingly working together to tackle the problem . 'There's been a significant improvement for migrant workers receiving their rights in accordance with the law', he said. 'We've seen a multi-stakeholder approach... the supermarkets want to do the right thing and reduce reputational risk.'

Camp acknowledges that problems still persist however: 'What you see is jobs being advertised in native languages. This can be an entrepreneur or a gang controlled operation. "We have work in..." they advertise through Gumtree or migrant workers sites. This is for a service provided, they pay to travel over, take them to the door of the labour provider, they know nothing of their backgrounds,' Camp said. He also said recent years had seen a switch from gangmasters being predominantly British to being foreign nationals: 'If you look at the licenses being revoked it's people from their own communities.'

'Factories in the fields'

The GLA adopts a similar stance – pointing out recent successes but admitting there's still work to do: 'There's still plenty of it [exploitation] out there... you have a situation where no-one wants to work in agriculture and there's large numbers of unskilled workers here,' a senior figure told the Ecologist.

Figures on the precise number of migrant workers operating in the UK are hard to pinpoint, largely because of the transient nature of the sectors involved, but recent research indicated that more than 80 per cent of all peak season agricultural workers are migrants. In 2009, the UK Border Agency estimated that at least 90,000 migrant workers had been active in the previous fours years within the agriculture industry, although the total is believed to be significantly higher as workers recruited by gangmasters and employment agencies were not included. Illegal migrants – some of who work within the sector – were also not accounted for.

Between April 2010 and March 2011 the GLA uncovered more than 800 workers being exploited across the UK, prosecuted twelve companies and revoked the licences of 33 gangmasters, according to the organisations' latest annual report. And a number of major cases are forthcoming, including the prosecution of more than a dozen farmers in the dairy sector who are accused of using unlicensed labour. Arrests also recently followed a major operation into people trafficking in the North West.

But the agency faces a difficult period as spending cuts begin to bite. It has been hit by a number of funding reductions, including the slashing of funds for a network of community intelligence operations set up in cooperation with local councils. The GLA's most recent annual report notes that it 'faces a major challenge in seeking to prevent the exploitation of vulnerable workers with the prospect of fewer resources'.

Campaigners point to recent criminal cases as evidence of ongoing problems in the sector – and why the GLA's work is so vital: earlier this year, Northampton Crown Court heard allegations that Eastern European workers picking leeks for several major supermarket chains 'were treated like slaves', with workers 'intimidated, threatened and beaten' by gangmasters, and many workers housed in 'squalor.'

Donna Simpson, a researcher with the Centre for Food Policy at City University, London, spent several months living and working with migrant farm workers as part of a Phd study into the horticulture sector, Salad, Sweat and Status. Her research uncovered a wide variety of experiences for migrants – some positive and some negative – and she is cautious about drawing simplistic conclusions which paint the entire system as exploitative: 'There are some farms and horticultural employers that clearly do value their seasonal workforce and make great efforts to retain them hence the provision of good accomodation and social activities,' she said.

Despite this, Simpson said no-one should be in any doubt that problems do exist, or that the work in question is physically tough: 'Having experienced three months of harvesting lettuce myself, I can honestly say that it was only by doing this work that I appreciated and understood the intensity of it. There are too many notions of the rural idyll and romanticism about physical work. The current work regimes in horticulture make injured robots out of people in an environment that is industrial in its scale of production. We have factories in the fields and small islands of workers living in caravans.'

Some names have been changed

Inside the salad 'mega-farm' supplying the UK's appetite for lettuce

In contrast to the squalid conditions faced by many migrant farm workers, employees of salad producer G's Marketing live in specially-built hostels with a social centre, sports pitches and a bar. Is this the future of industrial horticulture? **Andrew Wasley** reports

You've probably never heard of Barway, a small village just outside of Ely in Cambridgeshire, but chances are you've eaten a lettuce that was grown there. Barway is home to G's Marketing, one of the UK's largest suppliers of salad and vegetables – and one of the largest employers of migrant workers in the horticultural sector.

G's is part of the Shropshire Group, a major farmers co-operative supplying lettuces, beetroots, celery, radishes, leeks and onions to Britain's top supermarkets, wholesalers and processors. The group, which has a turnover of more than £240 million, has won accolades for its treatment – and unique facilities – of the thousands of migrant workers it employs each year, mainly from Eastern Europe.

As part of our major investigation into conditions for migrant workers employed in the horticulture sector, the Ecologist was granted unique access to the company's operations – from touring workers' accommodation to visiting the harvesting rigs to meeting employees in the packhouse and business department, the nerve centre where the company ensures that constant, round-the-clock orders from retailers and other clients are met.

During peak seasons the group employs as many as 4,500 people – many of them migrants – at cultivation and processing sites in Cambridgeshire, Norfolk, Warwickshire, Gloucestershire and beyond: the company also has operations in the Czech Republic and Spain, the latter ensuring a year-round supply of produce even outside of the UK growing and harvesting season.

The workers housed at the main company hostel at its Barway headquarters are recruited directly from Eastern European countries; G's says it doesn't charge workers a fee for joining the company – in contrast with many agencies and gangmaster outfits which do. Some other parts of the business do rely, from time to time, on gangmaster-supplied workers.

The Barway hostel houses up to 600 workers – including Poles, Bulgarians, Lithuanians and others – in dormitory style accommodation or, when at capacity, in a few nearby caravans. Each room contains six beds, a freezer and a fridge (workers cook in a separate dedicated kitchen, or eat in an onsite canteen). Couples can apply for a space in a dedicated two-person room. There's also a shop, an internet café, a social centre – complete with a well stocked bar – as well as football and basketball pitches, a tennis court and outdoor barbecue area.

The salad village

It isn't a hotel – the building is closer to a university halls of residence with long corridors, artificial lighting, fire notices and communal bathrooms. Stepping outside, the industrial nature of the site becomes more apparent: almost immediately adjacent to the main accommodation block are the 'spillover' caravans, further washrooms and other factory buildings that form part of the giant processing plant that churns out salad and vegetables seven days a week.

But, as the company maintains, people are here to work, to make money to take home to pay for university, to help towards buying a house, to get married. They're not here to enjoy a holiday.

The money most earn at G's far exceeds what they could expect to earn back home (in one example mentioned, a week's wages at G's enabled a worker to pay his college accommodation back home for many months in advance.)

It's quiet when the Ecologist visits. It's mid-morning and most of the workers are out in the fields or busy in the packhouse. One or two are resting in the bedrooms and there's a few ouside reception where small groups are standing or sitting around chatting, smoking or talking on mobile phones. Someone's hosing down the floor, and some machinery whirs in the background.

The staff at the hostel are genuinely enthusiastic about the facility. Will Goosen, a manager at the Barway hostel, says he believes the company offers foreign workers a good package: they are offered regular work, decent pay, good living conditions and social facilities which far exceed that provided by many other companies. If workers have a problem, be it personal, practical, or relating to work, the hostel staff are on-duty 24 hours a day, he says. Additionally, there's a dedicated phone service for workers to make any complaints in their own language to an independent third party which operates the scheme.

Workers receive an induction when they arrive at Barway in their native language – something which can, Goosen acknowledges, be challenging – are allocated a room, enrolled at a local medical centre and given assistance with other practical matters such as opening a bank account if needed. The migrants typically come to G's on contracts of between three and six months – as much as 65 per cent come back – and spend

up to six days a week working shifts involving the planting, harvesting or processing of salad and vegetables. Each day, rotas are posted on a giant work allocation sheet so workers know what shift they are doing and in which team.

More you work, more you earn

Most workers are paid on a piecework system with payment based on results – the more work completed the more money a worker earns – although some jobs are based on an hourly rate. G's says all its payment rates are in accordance with the current national minimum wage (£5.93 per hour) or the agricultural wages order (£5.95 per hour), which is soon to be scrapped with the winding down of the Agricultural Wages Board.

Typically, according to the company, workers earn around £250 per week; a figure that can rise for experienced – and fast – employees. All workers are expected to carry out overtime, orders permitting, and all pay tax and national insurance as they are fully registered and legally working in the UK. £32 is deducted each week for accommodation.

Workers at Barway are not part of a union, although the company operates an Employers Consultative Committee (ECC) system, where elected representatives can make representations to management on any aspect of their employment. Although there is not much free time – during peak seasons (April until October) workers are in the fields or factories six days a week – the company lays on excursions and organises social activities. The Barway plant has a yearly 'open farm Sunday' when members of the public are invited to the facility to meet workers and see the operation for themselves.

According to Sharon Cross, group HR operations manager, the company has steadily built up a good relationship with the local community, and gone to great lengths to ensure people are aware that workers inject money back into the wider community by using local shops, pubs and other services. This contrasts with reports from elsewhere across East Anglia, Lincolnshire and beyond which have consistently described relations between migrant workers and locals as being marred by hostility.

G's unique approach – building dedicated accommodation and supplying workers with just about every facility they need in one location – has undoubtedly reduced the risk of problems. If the thousands of migrant workers G's employs each year tried to find rental accommodation in local towns or villages there'd be massive concerns over overcrowding and conditions, as well as a knock-on effect for locals trying to find somewhere to live. Additionally, such circumstances could attract the attention of unscrupulous characters looking to cash in on easily exploitable workers.

Several locals in Ely the Ecologist spoke to weren't even aware of the G's operation; two others said they'd heard of the company but had only been told 'good things'; a third person knew all about it – her husband worked at Barway. There are also those who hold the common opinion that foreign workers are taking jobs that Brits could do, but, as has been repeatedly demonstrated, most British workers don't want to do this work because of its physically demanding nature.

G's are upfront from the outset about the work they offer: 'We work outdoors in all weathers and the jobs tend to be physically demanding...' the company's website says. 'The work is mostly manual planting, picking and harvesting of salad and vegetables, which involves a considerable amount of bending, walking and lifting.'

Relentless pace

The Ecologist visited workers harvesting both lettuces and celery out in the fields beyond Barway. The work is undeniably tough, with teams of pickers shuffling slowly in the mud alongside the giant 'rigs' that double as mobile factory processing units. The celery teams, consisting of between 13 and 16 workers, continuously bend, grab a stick, cut the bottom, cut the top, chop off the leaves. Then it's onto the conveyor belt which carries the vegetables into the processing area above. Here, the celery are sized, washed and wrapped – all virtually automatically (small and overweight units are separated for later use in vegetable snack pots assembled in the packhouse).

It's relentless, dirty, noisy work. This is Europe's biggest celery grower. Ysvetomir Tsenkov, celery harvest manager, explains how as many as 30 million sticks of celery are cut and processed here each year between June and November. As many as 200 workers can be out on the rigs harvesting at any one time, each rig completing an eight hour shift that will see thousands and thousands of sticks picked. During peak seasons it can be a 24 hour operation – the company has giant spotlights which can be brought in to illuminate the fields

so workers can harvest through the night.

One worker looks up from his job in the processing area and shrugs, saying if he didn't like the work he wouldn't stay. He's living at Barway and says there's lots of people and much socialising. His girlfriend is also here. He's studying economics back home but needs the money that this work provides. Another man – who says where he's from but it is impossible to hear – appears less enthusiastic, saying that although the money is good, the work is hard and he's looking forward to returning home.

On the rigs harvesting little gem lettuces, the pace is just as intense: today there's five rigs with crews of 21 each working the fields; 10 to 12 people cutting down below, the others on top. As many as 70,000 little gem lettuces being harvested in one day is common – there was one occasion when staff say 132,000 were picked in a single day. Upstairs, in the noisy rig bay area, the lettuces come off the conveyor belt thick and fast, straight into plastic wrapping. These are going to Tesco, the labels indicate. They'll leave Barway tonight, a worker explains, go to the depot and then be on their way to the supermarket shelf soon after.

We leave the lettuce gang to it, swapping the exposed rig for a comfy 4x4. It's dry outside today, but I wonder what things are like when it's raining. A canopy is used, says Will Goosen, but the ground, and just about everything else, including the workers, presumably still get soaked.

Intensive supply chains

Back in the packhouse, the Ecologist accompanies a shift of workers about to start processing and boxing up some of the produce coming in from the surrounding fields. Biosecurity is tight; overalls and hairnets are given out and hands washed while bags and other items have to be left in the locker room. Inside, teams of operatives are busy on production lines laid out in front of a wall containing data relating to the days' orders – how many of each product, in what format and at what price. This is where the scale of the G's operation really becomes clear. Information is processed through to here from a team of product managers and logistics experts situated elsewhere in the building. A supervisor oversees processing and the dispatching of large consignments out to waiting trucks.

Charlie Kisby, product manager, based in the company's business centre, later talks me through the complex process of ensuring the company's clients – including all of the major supermarkets – receive what they want, when they want it. At 8am an order may come in, for say 10,000 or 20,000 lettuces - by 6 or 7pm that consignment needs to have been ordered, harvested, processed, boxed up and be on its way to the depot. This is a typical time span but it can vary. G's gets paid on what it delivers. It's very rare for an order to be 'dropped' and not delivered.

There's night shifts organised to cover extra large orders, or a shortfall from daytime harvesting – if not enough workers are booked in, loudspeaker messages are broadcast at the hostel asking for extra hands who want to do overtime – alongside a 24 hour packhouse operation if needed. Nothing is left to chance and orders are predicted; the company has a dedicated computer system to enable it to accurately forecast sales, which takes into account myriad factors including historical order data, weather and supermarket promotions. Nothing can entirely equip the operation for some unexpected events however, such as when the BBC weather forecast predicts it is going to be hot and sunny and people get planning their barbeques. When this happens, orders for lettuce can go through the roof.

All this is explains in part why the industrial horticulture sector – in common with most other types of agriculture – is increasingly dominated by fewer, and larger, more integrated operators. The intense, last minute nature of modern supply chains means smaller, less well equipped outfits simply couldn't cope with the demands of the large retailers. The G's operation is the salad equivalent of the 'mega farms' currently being touted to supply the UK's appetite for cheap pork or milk.

Kisby acknowledges that there's not many small players any more. Despite this, he believes there's still only two key resources needed; soil type, and the people who make up the business. Without people, the business simply couldn't function, he says. There's no replacement for the human eye and judgement. He says that if the company didn't look after its workers, its labour source would dry up: from an ethical point of view, it's the right thing to do, he argues.

The cheap gang labour of the past is not going to do.

Why ethical trade is only possible with supermarket action

COMMENT: International supply chains leave horticultural workers harvesting our food vulnerable to exploitation. Retailers, unions, NGOs and governments must work together to tackle this, says **Julia Hawkins**

Mary is a young casual worker. I met her while she was picking fine beans on a smallholding farm in Tanzania, which had been contracted by a larger farm to produce beans for export to the UK.

Her work looked quite literally back-breaking: fine bean bushes grow to only about a foot from the ground, so she spends most of her nine-hour day bent almost double to pick the beans, then collecting them in plastic containers for weighing. The weighing bit is important – she gets paid per kilo, so she needs to work quickly to make sure she gets an adequate income at the end of the day. This is in temperatures rising to over 30 degrees in the shade.

Mary's situation is similar to millions of horticulture workers around the world who work for low wages, with little awareness of their rights, producing vegetables and salad sold to us through our supermarkets.

Yet she's relatively lucky. She told me she was aware she has rights, describing being shown how to bend in a way that doesn't hurt her back. She's also hopeful about the future, and trying to save for it, even though saving is harder for casual piece-rate workers who tend to get paid less than permanent workers.

Things were different twenty or so years ago. Most of our horticulture products were grown in the UK. So if we wanted green beans, we could have them, as long as they were in season. Then our supermarkets discovered that it's often cheaper to grow products in warmer climes than it is in the UK, where growing periods can only be extended by using expensive and environmentally damaging greenhouses.

So to satisfy our demand for year-round availability, they started sourcing first from Southern European countries like Spain, then further afield in East and Southern Africa, Asia, Central and South America.

A single product might now be sourced from as many as 20 countries, with production shifting

from one country to another as the seasons change. Many of these countries are poor, with governments often either unable or unwilling to enforce laws set up to protect workers' rights.

The horticulture sector is also highly seasonal, with huge peaks and troughs in demand as the weather changes. It's not unusual for a salad buyer to phone her supplier the day before a bank holiday to increase an order by 50 per cent if the forecast suddenly changes for the better.

This just-in-time ordering is fantastic for us consumers but it puts a great strain on suppliers. Often it forces them to hire extra numbers of casual, often migrant, workers at short notice, or to pressure workers to toil even longer hours. They may also resort to buying in product from secondary suppliers who may not be as interested as them in meeting the required labour standards.

Another characteristic of this sector is the prevalence of smallholders – farmers who own or rent very small plots of land. This is because produce like green beans and other horticulture crops need a lot of care and attention, which smallholder production allows. Smallholders also provide greater flexibility of production than larger growers.

But while growing cash crops for export provides smallholders with vital income, this type of production poses challenges for retailers seeking to improve pay and conditions in the sector.

Vulnerability of workers

For example, smallholder farmers are often heavily reliant on unpaid family labour and tend to lack awareness about the need to protect workers' rights. They are also sometimes geographically quite remote, making it hard for retailers to trace them and monitor their conditions.

All of this – combined with weak bargaining power of suppliers with their supermarket customers – increases the vulnerability of horticulture workers to exploitation. The migrant workers that are a feature of the sector are particularly vulnerable, often cut off from support networks and lacking the same legal protections as indigenous workers.

Yet horticulture exports provide vital income and livelihoods for millions of workers and farmers around the world. If that was to disappear, hundreds of thousands of poor and vulnerable people would become much worse off.

So what can be done to improve workers' lives across the sector?

There are a number of key things supermarkets and their suppliers can do. For a start, they need to properly map their supply chains. That means not just assessing workers' conditions in their direct suppliers, but tracing production right down to small outgrowers, working with others to understand risks and prevailing conditions. ETI members' experience has shown that workers are more vulnerable to exploitation the further they are down the supply chain.

Transparency

Secondly, they need to build closer and more transparent relationships with their suppliers, based on a recognition of mutual self-interest. Our members have also learned that top-down 'policing' of suppliers at best has been ineffective at driving change, and at worst has merely helped push problems underground. They are starting to invest far greater time in building suppliers' awareness of the importance of treating workers' with respect, and helping them build proper management structures, which reaps dividends for workers and business alike.

Third, they need to look at purchasing practices – including the lead times they give for orders, and contractual terms for suppliers. Some of our member companies are experimenting with developing balanced scorecards for their buying teams which incentivise them to consider ethical issues as well as price and quality when placing orders with suppliers.

Also, they need to collaborate with others. Low wages, discrimination and other forms of exploitation are present in many supply chains and no single company can hope to tackle them on its own. That means working not just with their peers, but also with trade unions that represent workers as well as the NGOs that campaign on behalf of workers and understand the wider context.

ETI demonstrated the power of industry-wide collaboration in the UK when we led the cross-industry alliance that successfully lobbied the government to introduce what became the Gangmaster Licensing Act. The Gangmaser Licensing Authority (GLA) has since proved effective at reducing the worst forms of exploitation in this sector.

Finally, and perhaps most importantly, they need to ensure workers' rights are a clear part of their sourcing strategies. That means thinking about the impact on workers of every sourcing and buying decision they make. It means listening to workers about what their main challenges are and educating them about their rights. It means encouraging suppliers to allow workers to organise into unions and other representative structures, so that they have the tools to shape their own destinies.

We are making progress, but it's not yet fast enough. We all – that's companies, trade unions, development NGOs and governments – need to work harder and smarter to raise standards across this sector. People like Mary deserve nothing less.

Julia Hawkins is Media Relations and Communications Manager at the ETI

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