

UK retailer steps up action on pesticides

With customers increasingly concerned about the impacts of pesticides on their health and the environment, Marks and Spencer is stepping up its strategy to regulate and reduce pesticide use within their supply chain. **Sam Franklin reports.**

In January 2007 Marks and Spencer (M&S) launched its environmental policy, a five-year plan (known as 'Plan A') that commits M&S to 'combat climate change, reduce waste, safeguard natural resources, trade ethically and build a healthier nation'. The plan sets targets for M&S to achieve by 2014 and has 100 action points, five of which specifically relate to farming and pesticides (see box).

M&S is committed to regulating and reducing the use of hazardous pesticides which is a fundamental way it differentiates its high quality produce. It was one of the first UK supermarkets to go beyond strict compliance with the UK government's pesticide legislation and to enforce additional controls on pesticides used within its supply chain. In 2002 M&S banned a number of pesticides from their supply chain. Most recently M&S came out top in PAN's retailer survey.

After a recent review process M&S expanded its position, engaging with its supply chain at every level from 'field to fork'. It aims to achieve its objectives under

Pesticide commitments within Plan A

Sustainable farming

Producing our fruit, vegetables, salads and meat to independent environmental standards and developing a set of sustainable farming measurements to demonstrate the environmental benefits of these standards.

Organic food

Tripling our sales of organic food in the UK and Republic of Ireland

Pesticides (Phase-out)

Phasing out pesticides which will be banned by the EU, in our fruit, vegetable and salad production across the world ahead of legislation.

Pesticides (Post-harvest)

Eliminating post-harvest usage of pesticides on our fruit, vegetables and salads.

Pesticides (Network)

Having launched a Pesticide Residue Reduction Network with our suppliers we plan to use its expertise to help us reduce pesticide usage.

four main workstreams:

Control

The control of highly toxic chemicals has been a part of the M&S pesticide strategy since 2001. Customers are becoming increasingly aware of the harmful effects that pesticides can have on the environment and workers' health and are concerned about the effects of residues in products. Marks and Spencer has its own farm assurance scheme, 'Field to Fork', that growers must comply with before supplying to M&S. The control of pesticides falls within this farm assurance scheme. Field to Fork currently covers all M&S fresh fruit, fresh vegetables and Food To Go (such as sandwiches) with future plans to roll the scheme out across all M&S produce.

To control pesticides that are used within their supply base M&S have devised three key lists based upon concerns and on pesticides that are being removed from the European market (excluded from EU 91/414 authorisation directive). (These lists should soon be available on M&S's website.)

Prohibited

Currently M&S have 70 chemicals that are prohibited globally by M&S for any of their production under Field to Fork. These have been chosen as they are particularly hazardous to human health or the environment. M&S use several official hazard classifications and UK and EU regulatory decisions. These include the UK Dangerous Substances Directive 76/464, the UK/EU endocrine disruptors list, the Rotterdam (PIC) Convention list, the UK anticholinesterase review list, the Montreal Protocol on ozone layer disruption (methyl bromide), WHO acute toxicity categories Ia; Ib; and II, bans, severe restrictions and withdrawals in the UK and EU.

Restricted

A list of 38 chemicals is currently restricted. To use one of these chemicals, a supplier must fill in a lengthy derogation form (focused on encouraging other less harmful alternatives) that must be submitted to M&S for sign off by a BASIS trained agronomist within the M&S team. The previous restricted list covered 20 active ingre-



Traditional pesticide use – farmers are mixing organophosphate with fertilizer with their bare hands

Photo: Marks and Spencer

dients and in early 2009 Marks and Spencer expanded this list to 38 priority active ingredients, with the aim of putting these on the Prohibited List in the future. Restricted List active ingredients include recent EU exclusions under the authorisation directive 91/414, plus those which may fall under the new hazard cut-off criteria in the recently agreed Authorisation Regulation [see PN 83 p16].

Monitored

These 115 chemicals are on our monitored list. To limit their use these chemicals are closely monitored by M&S's testing schedule. If they are detected within 50% of the maximum residue limit (MRL) the supplier must have a dedicated action plan in place to help reduce its use.

Support for our growers

A key feature of M&S's approach is the help they provide farmers to comply with the 'Field to Fork' farm assurance scheme. On-going revision of EU pesticide approvals has eliminated the use of hundreds of pesticides in recent years and more are likely to be withdrawn under new legislation. To enable our farmers to adapt their growing protocols we will be highlighting the chemicals that are to be removed and using our M&S Pesticide Network (see box) to find alternatives. This panel of global experts will be able to provide creative solutions to controlling pests and disease and will consist of specially chosen global experts in entomology, pesticide use, organics and IPM. The aim is to drive change where growers have become dependent on key chemicals and to provide these growers with creative non-chemical solutions.

Innovation in practice

Blow pests off

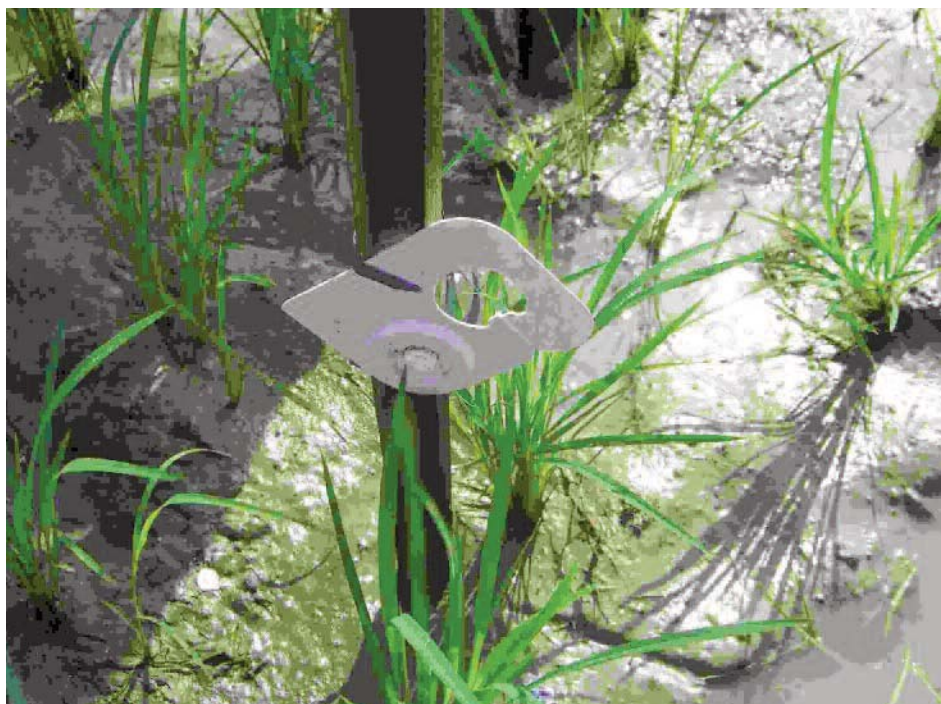
M&S consistently invest time and money in new pest reduction techniques to reduce the amount of chemicals applied to our crops. The most recent - a collaboration between M&S, Gaskains Growers and Total Produce

- has been dubbed the 'hairdryer'. It works by blowing insects off the crop and killing them with hot air. The machine, manufactured by Lazo TPC, was originally used in the table grape vineyards of Chile, and works by supplying high velocity air at 100°C to the plant. This creates a micro-climate around the plant reducing the development of micro-organisms and insects without the use of chemicals. It seems the heat shock triggers stress factors in plants enhancing their natural defence response, as well as having direct effects on micro-organisms. It is currently being used in Kent this year on raspberries as an alternative to pesticides. The trial is only half complete but the preliminary results seem promising. M&S hopes to promote the use of this machinery across its business.

Confuse pests

M&S has expanded its pesticides policy into other key areas of the business, especially to areas where there are particular concerns. One of its most recent projects is to control yellow stem borer on Basmati rice in the foothills of the Himalayas where M&S is part-funding a project with Exosect. [see PN62, pp10-11]

Yellow stem borer *Scirpophaga incertulas* is the major insect pest of rice across various growing regions of India and in fact in many other rice producing countries in Asia. The larvae damage the rice stems, affecting the crop health and reducing yield of rice grains. It has traditionally been controlled by using chemical insecticide treatments. These insecticides have tended to come from older chemistry. However, while these old chemicals have the advantage of being inexpensive their activity tends to be broad spectrum with effects on a wide range of non-target organisms and on the environment and human health. They are used by farmers and workers with little or



Pest control the Exosect way — pheromone traps are placed throughout the crop

Photo: Marks and Spencer

no training and and no safety equipment. Their impacts are generally not monitored.

Exosect with their Indian partner PCI India have developed a pheromone-based trapping system called Exosex YSB Tab, which lures the male moths and disrupts mating. By trapping adults and reducing reproduction, the technology can control yellow stem borer with an efficacy similar to that of conventional pesticide regimes, achieved at no additional cost to our growers.

The project with Exosect fits well into M&S's environmental commitments in that

- the traps are made locally which reduces transport and haulage of chemicals

- there will be no risk of pesticide residues in produce and no risk of pesticide residues reaching surface water, streams, rivers, and groundwater and ending up in non-target species

- substituting pesticides with a pheromone control system improves farmer and worker welfare by removing pesticides which could contribute to farmer and community health issues

Measuring success

M&S aspires to have all produce residue-free. However, this is not an easy task. Together with its growers and Pesticide Working Group it will work to deliver residue free produce. To measure the success of the work it is vital to monitor progress. M&S has a database of pesticide residue testing results. Using this along with testing results provided by suppliers will allow countries and crops with specific residue issues to be identified. This is currently being trialled with several key suppliers from the Pesticide Working Party.

Conclusions

M&S is currently working hard to decrease pesticide use and residues within its supply base without decreasing yields or increasing costs. Two pesticides currently targetted for removal are paraquat and endosulfan which M&S believes should be feasible in the short to medium term. These pesticides are also key priorities for PAN.



The 'hairdryer' moves through the crop giving out high-velocity air which blows insects off the crop and killing them with heat

Photo: Marks and Spencer

Sam Franklin is Product Technologist - Fresh Produce, Marks and Spencer, Sam.Franklin@marks-and-spencer.com