

How life has changed for the pest controller

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In 1967 I was a young recently qualified 'inspector' in the Ministry of Agriculture, Fisheries and Food's regional Infestation Control Inspectorate, stationed in Liverpool. My training had been several months of practical on the job training in the company of more experienced 'inspectors', which, for me, included a few weeks in Starcross and Exeter visiting flour mills, animal feed stores, mills, government offices, hospitals and prisons.

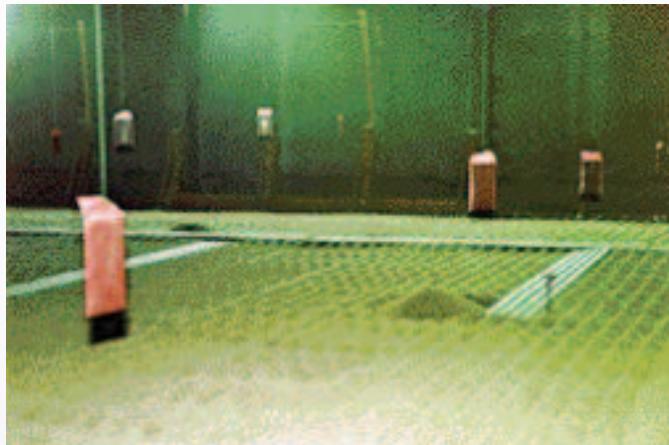
In at the deep end

We had responsibility for pest control in government buildings and were inspecting a cottage hospital in Lancashire. During this visit, while spraying wasps and ants, a young nurse asked, "How safe is that spray you are using?" My colleague leapt to answer, pulling up his sleeve to spray his bare arm, whilst shouting, "It is perfectly safe, look!" I was temporarily frozen to the spot. I did not know how to answer the question accurately in relation to the insects, us or the staff and patients.

This small incident has stayed with me over 40 years and has clearly left an impression on me.

In the course of my career, staying with MAFF, then Defra, until leaving

Gamma HCH spraying of bagged grain. This insecticide was banned many years ago and better protective equipment is now required by law.



Dichlorvos strips being used to control a moth infestation in a German intervention grain store. Their use resulted in the grain being dumped.

in 1995 to jointly found Acheta with Adrian Meyer, I have always wanted to know why and how the pesticides we have available work, both on our target pests and, by accident, on us.

My experience of 1967 sparked off an increasingly relevant interest in probably the biggest change of all in the whole subject of pest control – safety with pesticides.

My colleague's reaction to the question from the nurse was based more on a blind faith that MAFF would only give us products that were 'safe', but with virtually no technical information to help him form his own judgement.

Classified information

Another early and personal experience which would not/could not happen now was when I moved to the East Riding in 1972 and to an old house.

As a pest control person, I was irritated that the mortgage lender insisted that the woodworm damage in the kitchen and elsewhere had to be treated by an external contractor. The local company wanted several hundred pounds to spray a small area of shelving and roof beams. I argued with the lender that I could do the same job but much more cheaply.

When the contractor was asked

what they would use they replied that it was a 'secret mixture and very effective'. Can you imagine any servicing company saying that to me, or to anyone else, today?

Dramatic changes

We have seen the practices, regulations, expectations and armoury of the pest controller change dramatically over the last 40 years.

This dramatic change has taken place almost despite the pest control companies.

Government legislation, starting with the initial Control of Substances Hazardous to Health (COSHH) regulations arising from the Health and Safety at Work Act, has made us all think much harder about what and how we control pests.

COSHH gives everyone a responsibility to assess the need for pest control and then to choose the least hazardous method and materials.

Back in the early 1970s the Vapona Strip became available for the control of flies in some buildings.

Homes and offices could buy these strips to kill the occasional intruder fly in our offices. The active ingredient was dichlorvos, an organophosphate insecticide impregnated into a thick plastic strip.

When removed from its protective foil wrapper the strip was sus-

pended from the ceiling in its thin cardboard 'cage', allowing dichlorvos vapour to escape and 'treat' the air space, killing all flying insects present.

The Royal Dutch Shell Company developed this fly killing technique but, just as it was being registered in the UK, the Dutch government was having second thoughts.

Control – just in case

My first experience with the Vapona Strip was its use in some MAFF offices in the mid 1970s, particularly in typing pools, where it was suspended, as normal, 'in case a fly comes in'.

It was not too long before we had reports of typists with severe headaches, some with very sensitive facial skin – a sort of neuralgia or nerve ending tenderness.

The typing connection was simply that typists spent many hours each day subjected to contact with a nerve poison – dichlorvos vapour.

The same effect would have been noticed by anyone working daily in a dichlorvos atmosphere.

Talking to the younger generation of pest controllers during training courses, they are amazed that we had such an approach to pest control.

A Royal Commission

HSE and COSHH and an earlier Royal Commission on pesticide use, between them, have created a far more responsible thought process – only do pest control if there is a pest to be controlled and then choose the least hazardous method.

For our typists and everyone else these days, the recommendation would be to close, or screen, open windows against flies!

The 'Vapona' type of impregnated strips have all but disappeared; but we were several years behind the Dutch government in removing them from general sale.

Large sized versions of these strips were also available to the pest con-

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trol industry. I remember seeing them suspended over the grain surfaces in intervention grain stores in southwest Germany.

The dichlorvos was to control an *Ephestia* sp. moth infestation in the surface layers of the long term stored grain, but unfortunately a couple of years later it was sampled ready for sale and found to contain excessive levels of dichlorvos residues and too contaminated to be used as a human or animal food material. It was therefore dumped on a waste tip.

The restriction in availability of many organophosphates over the past 15 years has been government inspired, but partly in response to the public's dislike for those 'nasty' insecticides, particularly organophosphates.

There was some justification for this view, since organophosphates can have seriously damaging and potentially permanent effects on the human nervous system, but only if they are misused with no regard for the advice printed on the labels.

The label and the law

The system of pesticide labelling has also come in for serious revision over the past decade. They are a real source of information for pest controllers (as are those used on consumer products) and for professional users, the 'statutory box' forms a legal document.

Here amongst other information, will be found the level and type of personal protective equipment required to apply these products in safety.

As the years go by, the most frequent changes to pesticide labels occur in the safety related areas.

As more information becomes available on the long term chronic effects of our insecticides on us and other non-target species, the registration authorities in the UK (most frequently the Health and Safety Executive (HSE) in relation to 'indoor' pesticides) continually re-appraise the phraseology of the labels on 'its' products and issue advice to registered companies of the need for amendments.

This does not mean that previous labels were necessarily wrong, but more experience and scientific information will often suggest better wording and more accurate safe limits.

Safety clothing has been so affected and we now see, for example, that even outdoor rat and mole control using phosphine gas releasing tablets should be done wearing a gas mask with the appropriate absorption filter.

For example part of a current manufacturer's label states that 'operators must wear suitable protective clothing (coveralls), suitable



Tubes and tubes of phosphine generating tablets being transferred into paper envelopes (for easy removal of the final powder residue). Six operators, three with gas masks, two with nothing, and one with a damp handkerchief as protection! This photograph was taken in India in 1998 before the start of a seven year safety training programme.

protective gloves and suitable respiratory protective equipment when opening container, handling and placing the pellets, ie full face respirator with appropriate gas filter cartridge (which also meets P3 standard for particulates) or RPE offering equivalent protection. To be used only by an operator instructed or trained in the use of aluminium phosphide and familiar with the precautionary measures to be observed. See HSE guidance note CS22: fumigation (and even this reference has changed in the last 12 months).

Many in the industry were not convinced that such precautions were necessary when handling apparently simple tablets which looked much like a well known indigestion tablet!

Since I do a great deal of fumigation training both in the UK and overseas, I am well aware just how hazardous these innocuous tablets can be – five days' exposure to kill insects in dried foods (grains, rice and peanuts) but, at the same concentration as a stack fumigation in a warehouse, we (you and I, and any other vertebrate) would survive about 30 minutes before death!

They are potentially deadly, hence the need for effective training, and the correct respiratory protective equipment (RPE).

Technical training

Without training, a typical untrained person's reaction to smelling phosphine gas (strong garlic like odour) is to breathe through a moistened handkerchief. If any of the original tablets have crumbled into powder, a wet hankie actually makes the human risk even greater.

An intensive seven year training programme was started in India in 1998 to minimise risk and death

amongst the pest control contractor staff. The extended training was not cheap but cheaper than the consequences of killing staff or bystanders.

Successes and failures

Years ago I was asked to assess a German cockroach infestation in a Liverpool nurses' hostel.

A major pest control contractor had tried unsuccessfully to get control and as a government property we had an obligation to take it on.

Night visits were essential (no Hoy-Hoy traps in those days) and we eventually used fenitrothion emulsion (another organophosphate) mixed in Polycell wallpaper paste and applied with a compressor and paint spray gun to walls and beneath tables and in some cupboards.

We understood much of the safety requirements (at least by 1967 standards) and achieved considerable success, at least from the viewpoint of the nurses, and their accommodation.

For about the last 10 years we have been able to use baits which are amazingly attractive to cockroaches and which are almost risk free. How is this so, when their active ingredients are actually much more toxic than the old fenitrothion?

Here is one of the great successes in modern insect pest control. The development of baits, which bring pest insects to your point of choice, rather than with the previous broad expanse contact sprays, with excessive over application and the potential to contaminate us and other non-target species and the environment.

The baits are pre-mixed, do not need touching by operators and are very effective quickly and for prolonged periods. We even have a

small choice of active ingredients, which should help keep resistance away for several years.

We also have very effective baits available for controlling the 'institution' pest Pharaoh's Ant, a tropical but long standing UK pest, causing serious health problems in many hospitals, shopping malls and multi-occupancy homes.

For these ants, there is even better news, in that the baits are as non-toxic as it is possible to get, utilising the insects' own hormones to interfere with the full development of the species. No toxic material in sight!

However, the situation for bedbug control is not so good and is possibly getting worse.

For many years we have relied on selected organophosphate insecticide localised sprays and some dust formulations and increasingly an older carbamate insecticide.

The carbamates, like the organophosphates are nerve poisons, requiring great care to avoid contamination of operator, occupant and the localised environment.

In recent months, we have heard from eminent experts that significant resistance has been identified in bedbug colonies across many parts of the UK.

During this same period, the choice of insecticide active ingredients has declined noticeably, for the laudable safety reasons mentioned above, leaving in reality very few choices, but putting the pest controller's favourite – Bendiocarb – under even greater pressure and with even more likelihood of increased resistance.

This species is probably the most important subject needing further research to identify a breakthrough in either application design or active ingredient, to counter the spreading problem of bedbugs in the UK.

Unfortunately, it is unlikely that we will ever have an effective bait, unless we can persuade enough volunteers to offer to take treatments like we do for dogs against fleas – a small drop on the back of the neck to contaminate our own blood to control the bugs which may bite us.

However, I can not see this method ever gaining government approval!

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Applying a cockroach bait during working hours with minimum protective equipment. The latest label would require the wearing of gloves.

