

PESTWEST NEWSLETTER

DID YOU KNOW...

Honeybees can lift 300 times their own body weight - equivalent to the average person lifting 15 tons.

Neurobiology researchers have found that larger-bodied social wasps have larger brains and devoted three times more of their brain tissue to regions that coordinate social interactions such as learning, memory and complex behaviours. Intra-species, queen wasps have larger processing areas of the brain than worker wasps.

Male Fruit flies, *D. melanogaster*, perform a complex courtship ritual to attract the attention of female flies for mating. The male performs a "song" by extending a wing and vibrating it. The pulsating acoustic signal produced sounds like humming to the human ear. The female fly finds the sound irresistible. A robust male performance is crucial for the success of mating.

PestWest
FLYING INSECT SCIENCE



FSC Mixed Sources
Product group from well-managed forests and other controlled sources
www.fsc.org Cert no. SA-COC-001754
© 1996 Forest Stewardship Council

Flying Insects and *E. coli*

Dr Moray Anderson BSc(Hons), PhD, FRES, CBiol, FIBiol



This year has seen severe EHEC outbreaks in several European countries, most notably in Germany. EHEC stands for enterohaemorrhagic *Escherichia coli*, the pathogenic strain of the bacterium *Escherichia coli* which occurs naturally in, amongst other places, animal intestines. There are hundreds of different *E. coli* strains, most of which are harmless to humans. The enterohaemorrhagic *E. coli* strains, however, can induce hemorrhagic diarrhea.

The enterohaemorrhagic *E. coli* bacteria (EHEC) have several distinctive features that increase their pathogenic potential. Firstly, they can attach themselves to the intestinal wall by means of a special protein. Secondly they possess a gene which is responsible for the production of Shiga- or Vero-toxins which cause hemorrhagic diarrhea as well as damage to the kidneys which can lead to kidney failure.

Transmission

EHEC can be found naturally in the intestines of ruminants like cattle, sheep, goats and deer. The bacteria are excreted through the excreta and can survive for weeks in the environment, soil and water. The bacterium is easily transmitted to humans through contact from person to person or animal to person or through the ingestion of contaminated food. Raw meat and milk can be contaminated with the bacterium and are the main source of human infection. Contamination of vegetables and fruit can also occur through contaminated water. Another possible form of contamination, which has so far not been mentioned in the press, is the transmission of the bacteria by flies. Potentially food can be infected with EHEC through contact with flies, their feeding habits or faeces.

The potential for contamination of human food with disease-causing agents has been proven over the years and these agents are able to survive on the outside body surfaces of the flies, particularly among the numerous hairs. They also survive in the flies' gut and in their blood system.

Flies have, over the years, been incriminated many times as potential vectors of food poisoning organisms (Ostrolenk and Welch, 1942).

In the last twenty-five years we have seen increasingly sophisticated experiments and studies into the transmission of food-borne pathogens by flies. Research has included case control epidemiological studies, fly population suppression studies and field studies into the transmission of pathogens by flies, which have fed from an infected reservoir (Olsen, 1998).

Most flies breed and feed in unsanitary conditions, where their larvae feed on decaying organic matter. Female flies choose suitable areas of rotting vegetation and decaying animal matter in which to lay their eggs. Adults emerge from the pupae in these unsavory sites and in the process can become contaminated with disease-causing agents. The adults then often move into sensitive areas where human food is prepared, processed or consumed, to look for their own food!

The potential for contamination of human food with disease-causing agents has been proven over the years and these agents are able to survive on the outside body surfaces of the flies, particularly among the numerous hairs. They also survive in the flies' gut and in their blood system.

Among the most dangerous of the disease-causing bacteria that have been found on flies are *Listeria*, *Salmonella*, *Shigella*, *Cryptosporidium*, *Klebsiella*, *Campylobacter*, *Streptococci*, *Chlamydia* and *Escherichia coli*.

Recently there have been a number of publications showing evidence for the transfer of *Escherichia coli* O157:H7 by flying insects. The most recent was a serious outbreak of enterohaemorrhagic colitis caused by *Escherichia coli* O157:H7 (EHEC-O157) in September 1996 in a nursery school in a rural area of Japan.

The importance of professional pest control



The incident highlights the importance of having UV-fly control units maintained and serviced by trained, professional Pest Control Operators

The BBC reported that eight people appear to have been 'sunburnt' by a UV fly killer at an Inverness hospital. Caused by a incorrect bulb that was fitted to an electric fly killer, a statement from NHS Highland said: "The bulbs used emit UVC light instead of UVA light and this has resulted in the affected staff experiencing mild sunburn of the exposed skin on their head and neck, and cornea of the eye, which led to the soreness and watering.

"These effects are short term.

"Staff have been briefed and reassured that there is no long term damage or implications for their health."

Similar symptoms were reported at Raigmore earlier in the year; however the health board have now said that all similar devices throughout NHS Highland have been

checked and appropriate procedures put in place to ensure that the incident does not happen again.

Through information obtained from independent sources it has transpired that the tubes were changed by a contractor who is not a Pest Control Operator, which resulted in the fitting of a UVC germicidal tube instead of a UVA tube.

The incident highlights the importance of having UV-fly control units maintained and serviced by trained, professional Pest Control Operators. Not only can UV-fly control units potentially become ineffective without proper servicing and maintenance, as seen here, they can even become hazardous as a result of incorrect servicing.



Your solution to seasonal pests

The Problem: CLUSTER FLY *Pollenia rudis*.

Identification

Adults are 7-9mm. Has distinct stripes on the thorax with golden hairs Gray pattern to the abdomen.

Characteristics

Parasitize earthworms and can be found in large numbers in attics and voids during cold weather/winter months.

The Solution: The PestWest Titan 300 electronic fly killer can be operated as a Cluster Fly Unit. If used as a Cluster Fly Unit, the tray must be detached and insects must be removed regularly to avoid build up and fire risk. The wrap-around safety guard prevents access to the killing grid and allows for the unit to run safely and efficiently even with the catch-tray detached, making the unit ideal for areas with high insect population.

Control

Insect light traps are very effective. Exclusion through sealing the openings, leading to the interior, and chemical barriers provides good protection.



The Problem



The Solution

PestWest[®]
FLYING INSECT SCIENCE

SUNBURST

PestWest is proud to introduce a new front-of-house unit to its award winning range of UV fly traps - the Sunburst. The stylish and decorative unit is not only discreet, with the glue board and fly catch hidden from view, but also highly effective and powerful. Equipped with a 20 Watt compact tube, the Sunburst provides a coverage area of 35m² and powered by an electronic ballast, it allows for energy efficient fly control.



Scan the QR code for more information on the **Sunburst**





Patent applied for

star power

New slimline technology

Chameleon[®] **VEGA**

Stylish, efficient and economical

The Chameleon[®] Vega is a stylish, powerful and economical UV fly trap. Its elegant and ultra-slim design is combined with an all stainless steel construction.

The Chameleon[®] Vega features new higher energy efficient T5 14-watt UVA tubes with integrated Reflectobakt[®] technology powered by a state of the art electronic ballast to deliver efficient fly control with low running costs.

- Unique slimline design
- New high efficiency RoHS compliant PestWest Quantum BL tubes
- New integrated Reflectobakt[®] technology for improved fly catch
- Reduced glass content & electrical consumption without compromising performance
- Improved ease of service
- All stainless steel construction
- 3-year guarantee

Weight: 3.2 Kg
Dimensions: H x W x D = 30 x 57.5 x 4 cm
Coverage area: 150 m²