PSOCIDS *Liposcelis bostrychophila*

PSOCIDS *(pronounced so-sids)*

From time to time people find that their food cupboards have become infested with tiny grey or brown insects. These are often found on the packaging of dry goods such as flour, powdered milk, sugar or semolina. The aim of this leaflet is to explain what these insects are and how best to prevent them.

WHAT ARE PSOCIDS?

Psocids - or booklice - are usually between 1 and 2mm long and might be found in dry foods. They are not caused by poor hygiene and are just as common in the cleanest of homes, be they old or new. They prefer to live in dark, warm, humid places - such as the folds of packaging in food cupboards - and dislike light or disturbance. They feed on a wide variety of food products - such as flour - and also the microscopic moulds that develop in humid conditions. They may live for about 6 months during which time the female may lay up to 100 eggs. Several independent studies have shown that the psocid species which causes the majority of problems in homes is rarely found in factories or supermarkets.

Psocids prefer areas with high humidity but can tolerate dry conditions for some days. The kitchen environment is likely to provide the conditions they need and fitted cupboards provide the darkness that attracts them. Some food products, including fresh flour, naturally contain moisture. In warm conditions psocids can rapidly increase in number. This is most likely to occur during summer months when temperatures are higher, leading to their discovery in the autumn.

WHERE DO PSOCIDS COME FROM?

King's College London carried out some research between 2003-2005 to look into the source of psocid infestation; essentially to determine whether psocids originate in domestic and/or industrial settings. Bags of flour were bought in pairs from a variety of retail outlets throughout the UK and Northern Ireland. One bag acted as a control and was sealed immediately. The other was treated as a normally purchased bag of flour, taken home and placed, unopened, in an ordinary domestic kitchen for one-week. Over 100 kitchens were used in this experiment. The control and experimental bags were sealed separately to avoid cross-contamination and sent to King's College for analysis, beginning with a three month incubation period - this being sufficient time for any psocid population to develop from any eggs or individuals in the bags. In total, 268 bags of flour were analysed (135 controls and 133 experimental). There were 22 instances of psocid infestation in the experimental bags. **None of the control bags showed any sign of psocid presence.** No differences were found between different flour types. Statistical analysis showed these findings to be very significant.

To conclude: psocid infestation was found not to be an industrial issue. Significant findings showed that psocids did not originate from food manufacturers, processors or retailers. Please see overleaf for how to prevent and control psocids in the home.

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PSOCIDS

Liposcelis bostrychophila

Psocids prefer starchy, moist foods and will abandon their present food source in favour of a newer, fresher supply. This is because most starchy food, including flour, desiccates - it dries out with age. Therefore a newly bought unopened bag of flour might become infested within hours or days of purchase; while older bags in the cupboard may no longer show any signs of the previous infestation visible to the naked eye.

PREVENTION OF PSOCIDS IN THE HOME

To prevent the manifestation of psocids in the kitchen:

- Packets of food that have been opened should be used up quickly and not pushed out of sight to the back of the cupboard. Alternatively, store them in air-tight containers as soon as possible after purchase, and inspect food storage areas regularly for psocids.
- Food storage areas should be well ventilated and cool. (*Liposcelis bostrychophila*, the psocid that is overwhelmingly the most important psocid pest in the domestic situation, likes warm humid conditions. Cold and dry situations are unfavourable for its survival.)
- If storage in cool ventilated cupboards is not possible, make sure that your cupboards are always free from condensation and damp. If you notice that condensation occurs in your kitchen, particularly during cooking or washing, open your windows. If the problem is continual, it may be necessary to take additional precautions. Advice on preventing condensation should be sought from the local Environmental Health Department.
- Any potential hiding places should be sealed with paint or mastic. Many fitted kitchen cupboards are made from laminated chipboard, and the surfaces which are not on view tend not to have a laminated finish. These unfinished edges can provide crevices for the psocids to hide in and should be sealed with a coat of paint or varnish.
- Regular cleaning of cupboards is advisable, since crevices in cupboards harbouring dry food can also provide a food supply for psocids. Use of a vacuum cleaner is recommended, provided the contents are then immediately disposed of in an outside waste bin. Do not use a very wet cloth since this may seal dry food into crevices, encourage humidity and the growth of mould in chipboard.

CONTROL OF PSOCIDS IN THE HOME

If these prevention measures fail and you do discover psocids in your food, do not use an insecticide because of the danger of contaminating your food. Dispose of all visibly infested packages in an outside waste bin and thoroughly clean the cupboards using a vacuum cleaner, paying particular attention to crevices. If psocids are found in other parts of the house, clean the area with a vacuum cleaner. Immediately after use, dispose of the cleaner contents in an outside waste bin.

It is important to make sure that, when foodstuffs are replaced in cupboards that have been cleaned, they do not reintroduce the psocids. Containers and packaging may be treated by placing them in a deep freeze for 24 hours (enclosed in a plastic bag). This will kill any eggs or juveniles that might be hidden in the folds of packaging. Labels should be removed from tinned food, bottles and jars to ensure that no psocids are hiding behind the paper. Use a felt tipped pen to label the bare containers. The freezer treatment is also suitable for books and other objects which you might suspect of harbouring eggs/ individuals (enclose them in plastic bags).

For more information visit: www.fabflour.co.uk/ or http://www.kcl.ac.uk/ip/bryanturner/other/index-psocids.html

If the problem persists, contact the Environmental Health Department of your local council.