

Pest Control Information for the safe storage of Organic Grains and Flours.

Dear Client

It is important to remember that organic grains and flours are most vulnerable to pest infestation in hotter months, as they do not have any chemical residue protection against pests. The purpose of this overview is to provide general information about pests, how we control them at Kialla and tips to protect your organic grain and flour stocks. Following our recommendations below will help reduce the risk of product infestation.

Generally speaking stored grain and flour pests go through three stages - egg, larvae and then pupate into adult insects over a period of four to six weeks depending on their environment. Kialla uses a number of 'weapons' to control pest infestation organically. The first of these is gassing silos with CO₂. This is very effective on live insects however has only limited ability to control insect eggs with no residual effect once the gas has dissipated. CO₂ is obviously not an option for the majority.

Our second weapon is cold storage of finished goods. We keep all finished product in cold rooms at a temperature of between 10 - 14 degrees. While this does not kill any insects it does ensure they remain dormant and do not multiply. **Ideal temperature for pest egg incubation is 15 degree C and above.**

Our third weapon is general plant hygiene. All pests need a food source, so ensuring that flour and grain dust is regularly cleaned up ensures the life cycle is continually broken. Pests will breed best in a dark, quiet, stable temperature environment, which is usually the 'hard to get at' place in the storage area, therefore cleaning must focus on these areas rather than the easy to access areas.

What Products are most susceptible to infestation? The level of processing to which a product has been subject will have a large impact on its susceptibility to pest infestation. Minimally processed products like whole grain may have microscopic eggs still attached to them, whereas these eggs will have been destroyed, in large part, by the milling process for flour.

So what can you do to help reduce the possibility of pest infestation in your organic grains and flours?

1. Kialla advise that storage in cool dry conditions (ideally between 10 and 14 degrees C) is the most effective and efficient method to control pests in organic product. Refrigeration is also suitable.
2. Ensure you have a clean shelf/product storage environment. Other products can cause cross contamination issues and inspection of packaging for leaks etc on arrival at your store can stop widespread infestation.
3. While we all love the Kialla calico packaging, it does not provide any protection from outside infestation unlike our paper / plastic substrate retail products. This uses a double layer film which prevents insects from being able to pierce the plastic to lay eggs on the product. Products in calico therefore require closer attention than plastic or paper and are more susceptible to infestation.

4. Infested items can be placed in a deep freeze for three to four days. To improve the effectiveness of this treatment, alternate freezing treatments with a period of rewarming to room temperature.
5. Stock control - ensure you employ a rigorous system of stock rotation to ensure older stock is moved on.

Organic flour and grain-based products are always at risk of pest infestation. This is not necessarily a reflection on the quality of the product. The non-organic industry uses highly toxic chemicals such as Phosphine, Dichlorvos, Pirimiphos-methyl and Chlorpyrifos-methyl to control these pests, and while these chemicals provide a high percentage control of pests in flour and grain, they are nonetheless toxic to humans and leave residues in the product. Organic certification prohibits the use of any of these chemicals. Instead, we rely on CO2 gas, plant hygiene and cool storage. These methods are 'best practice' in the organic industry but do not necessarily guarantee 100% pest eradication.

As a result, there is a chance that sometimes there may be a pest infestation in an organic product, given certain climatic conditions and the longer the product remains in suboptimal storage. While these 'best practice' organic methods listed above ensure there is no toxic chemical residue in a certified organic product unfortunately they do not guarantee 100% insect control.

Due to our inability to control infestation once a product is despatched, Kialla will only accept infestation claims within a two-month period of despatch. This is based on the premise that if a product is infested when it leaves Kialla it will be obvious within weeks of arrival into store. We feel this is more than sufficient period given the lifecycle of these pests are between 4 and 6 weeks.