

AWB Wheat Quality Fact Sheet

Pink Stained Grain

AWB Receival Standards

According to AWB's Wheat Receival Standards, assessment of Pink Stained Grain is conducted on wheat held above a 2mm screen, following sieving.

A maximum limit of 2% applies across all the major milling grades.

Off-grades such as AGP and Feed have a maximum Pink Stained Grain tolerance of 5%.

The Pink Stained Grain tolerance is cumulative with the Stained Grain standard (which is a maximum of 5% across the major milling grades). This means that if a grower tendered a delivery containing 1.5% Pink Stained Grain and 4% Stained Grain, it would be downgraded to AGP as the total Stained Grain would be 5.5%.

Photographic standards have been developed to assist classifiers in identifying Pink Stained Grain.

Nature

Pink Stained Grains, have a distinctive Pink tinge on the outer seed coat. In extreme cases, Pink Stained Grain may appear to have been treated with a pickling compound.

In the majority of cases affected grains appear relatively normal apart from the obvious pink staining. However, in very severe infestations grain may also become shrivelled and distorted.

Cause

Pink Stained Grain arises from the infection of certain fungal species such as *Fusarium* spp, *Epicoccum* spp or *Drechslera* spp. These fungi multiply on grass or crop residues and infect wheat heads during flowering.

The fungi that cause pink staining are favoured by warm, humid conditions during anthesis. The symptoms develop when conditions are continuously warm and moist for a period of a few days. Prolonged favourable environmental conditions may increase the severity of symptoms.

Impact

Pink Stained Grain is highly visible in a bulk, therefore reducing its overall appearance. In the flour mill if the level of staining is severe, the bright pink colour may adversely affect the colour of milled flour and end products produced.

The fungal species responsible for the development of pink staining may potentially produce toxic metabolites called mycotoxins that are extremely harmful to both humans and animals. These harmful toxins are regarded as quite stable compounds and will remain active even after processing. Hence end products such as bread and pasta made from contaminated flour will contain mycotoxins. Mycotoxins can also potentially make feed grains unpalatable to livestock at high levels.

Due to these facts both export and domestic customers view the presence of Pink Stained Grain as a major quality concern. As a consequence, AWB has set tight Receival Standards and monitors the presence of Pink Stained Grain closely.

What can be done?

Sound paddock hygiene (removal of grass weeds) and rotation of cereal and grass crops with non-host species such as broadleaf crops can be quite effective in reducing spore loads and ultimately preventing the development of Pink Stained Grain.

With the varieties currently available to growers there is no documented resistance to the fungi that cause the appearance of Pink Stained Grains.

Post harvest, the technology currently available does not allow growers to economically grade Pink Stained Grain out of sound wheat. This is due to the fact that the majority of Pink Stained Grain in a bulk will be relatively identical in size and weight to that of sound grain, so preventative measures are essential.