Explanatory Advice Pulse Standards 2020/21 Season

1. Background

This paper outlines all issues considered and changes made by the Pulse Standards Committee (Committee) in development of the 2020/21 pulse Standards.

These Standards are now adopted and should be used by industry as of 1 August 2020.

2. Changes Adopted in the 2020/21 Season

The Committee implemented the following changes in the 2020/21 Standards.

2.1 Agreed Change: General – All pulse commodities

A number of minor wording changes have occurred as follows:

- The current links in the Standards to various Australia Government and industry websites for use by industry in reference to a range of issues such as maximum residue limits for chemicals and market quarantine requirements have been updated.
- For consistency with other commodities and to clarify the current intent of the definition for pulses, add the following to the definition of Objectionable Material in relation to unacceptable contaminants "or other contaminants greater than the tolerance or specifications as allowed in the Standards".
- A nil tolerance of live stored grain insects applies in all Standards. This nil tolerance applies to all stored grain insects specified in the Standards, and those considered as a stored grain insect at export, as listed in the Export Control Act as implemented by the Department of Agriculture, Water and the Environment. The definition for Stored Grain Insects has been updated accordingly. This required removal of the Hairy Fungus Beetle (*Typhaea stercorea*) from the category of Field Insects to Stored Grain Insects.

2.2 Agreed Change: Visual Recognition Standards Guide – All pulse commodities in VRSG

- Existing sections for pulses (desi chickpeas, kabuli chickpeas, Angustifolius lupins, faba beans, field peas and red lentils) in the existing Visual Recognition Standards Guide (VRSG) located on the GTA website at http://www.graintrade.org.au/fact-sheets-publications have been reviewed and altered where required to improve clarity. This included changes such as:
    - Revision of photos and adding new photos deemed necessary for clarity.
    - Revision to definitions for clarity.

Other changes are outlined below.

Commodity	Standards Issue	Agreed Outcome
Desi Chickpeas	Stained & Weather Damaged	A submission was received that the Tiger Striping and Speckling definitions in the VRSG were confusing and required clarification. No change was made as the Committee considered the current definition appropriate.
Faba Beans	Insect Damaged and Fungal Affected	To provide greater clarity on the differences between these quality parameters, the prior wording has been re-introduced, being "The lesion generally appears intense dark brown to black and often fluoresces. It is commonly oval to circular and localised in nature, but may vary in shape. The lesion may be similar in colour to mould or weather damaged. The lesion may also be associated with the presence of fungal growth of various colours. A lesion may appear on one or both sides of the seed coat or kernel. A lesion greater than 20% coverage on any one side of the seed coat is considered defective. A lesion less than 20% on any one side of the seed coat is considered sound. Any lesion of any size on the kernel is defective." The previous photo of a Fungal Affected kernel has been included.
Faba Beans	Frost Damaged, Stained	For greater clarity, wording in the definition has been altered to "Visible damage from frost impacting on the grain resulting in staining on the kernel. Any level of stained on the kernel, as a result of frost, is classified as defective. Where staining does not occur on the kernel, but results in staining only on the seed coat, refer to the Poor Colour definition". In addition, wording has been added under the four photos of Defective Grains that "Photos do not depict the minimum required".
Faba Beans	Pea Seed Borne Mosaic Virus	For greater clarity added wording "Is included in Poor Colour".
Lentils, Red	Fungal Affected	For greater clarity added wording "Fungal Affected is included in Poor Colour".
Lupins	General varieties	For clarity, revised the size of the photo of each variety to reflect the general difference in size.
Lupins	Frost Damaged, shrivelled and Wrinkled	Replaced the second defective grain photo with a darker grain that is more commonly seen. Removed the previous small whole grain as this was not needed.
Mung Beans	All Defects	The Committee intends to work with the Australian Mungbean Association on revised definitions and photos. It is hoped these will be included when the next version of the VRSG is published at some time in the future.

The 2020/21 version now applies and replaces the previous VRSG version which should not be used.

2.3 Agreed Change: Varietal Lists – All Commodities

As initially implemented in 2019, on an annual basis, the list of varieties by commodity on the Pulse Australia website has been reviewed to ensure it is up to date. A process has been developed to ensure all new pulse varieties by commodity are listed. This process will ensure that the previously introduced statement in all Standards of "Approved Varieties - Approved varieties as listed in these Standards or on the Pulse Australia website" does not cause any commercial trading issues.

2.4 Agreed Change: Insect Eggs on Grain – All Commodities

During 2019 a number of instances arose where insect eggs were present on the Seed Coat of grains. There was no clear definition in the Standards and varying interpretations by industry were being made. The Committee considered this issue and a number of factors were discussed:

- While mainly on desi chickpeas, other commodities were/may also be affected.
- Eggs were mainly as a consequence of the Cowpea Bruchid, but other species could also be present.
- Eggs relate to Stored Product Insects (not Field Insects) where a nil tolerance for live insects apply.
- It is difficult if not impossible to identify if the eggs are alive at the time of classification.
- Adult insects may or may not be present in the kernel.
- Insect damage to the kernel may or may not be apparent.
- Eggs may be controlled (killed if alive) via fumigation, however may remain on the surface of the grain and be visually unappealing.
- In general eggs were not present on the grain at delivery during harvest, but appeared during the storage period (i.e., were present within the grain).
- Different end-uses of grain impact on the interpretation of this quality parameter. For example
    - The splitting market removes the seed coat hence eggs only on the Seed Coat are not a significant issue from a quality issue (but may be visually unappealing and a food security/hygiene issue).
    - The whole seed market may reject these grains due to their appearance.

A range of options to interpret this quality parameter were discussed including:

- In the absence of proof the eggs were dead, classification of eggs as live, thus falling under the definition of Objectionable Material with a nil tolerance applying.
- Seeking a Commodity Vendor Declaration from the grain provider that the eggs were dead.
- Classification as Foreign Material.
- Classification as Insect Damaged, with one industry submission seeking separate tolerance for Insect Damaged within the Total Defective category.

Following discussion, the Committee agreed to clarify that eggs on the surface of all pulses would be included under the definition of Insect Damaged, and thus fall under the tolerance of Total Defective for the 2020/21 season.

The impact of this change, including the potential for changes or additions to tolerances for related quality parameters (such as Insect Damaged), will be reviewed by the Committee during the development of future Standards.

2.5 Agreed Change: Defective Grain Sub-Categories & Tolerances – Faba Beans, Green Lentils, Red Lentils

The existing No.1 Farmer Dressed Receival Standards for the above commodities list a tolerance for the Total Defective category, including separate tolerances for various sub-categories such as “Poor Colour” and “All Other Defects” (this also applies in the No.2 Farmer Dressed Receival Standards for Red Lentils).

In contrast, the Farmer Dressed Export standards for each of these commodities did not specify an “All Other Defects” limit. A request was made, as outlined in 2019, to remove the “All Other Defects” category.

It is recognised that damage to faba beans, green lentils and red lentils can occur in the storage and handling process. As a result, it is acknowledged there should be a difference in the defective tolerances between Farmer Dressed Receival Standards and Farmer Dressed Export Standards. However it was felt by some in industry (based on prior submissions to the Committee) that there must be reasonable balance between the two Standards.

The prior difference was not considered reasonable given that if no Poor Colour is delivered by growers at receival, a restrictive limit is placed on "All Other Defects" such as splits and brokens. For example, in Faba Beans, if the level in the delivery is just over the limit for "All Other Defects" the delivery is graded No.2. The grain on outturn may still be able to be sold as No.1 given there is no category of "All Other Defects".

In light of the discussion, the Committee agreed to remove the category of "All Other Defects" for the 2020/21 season in all grades for the three commodities listed. For clarity the following now applies in the 2020/21 Standards:

Commodity Name	Faba Beans
Commodity Grade Number(s) & Name(s)	CSP – 5.2.1 FABA BEANS – NO.1 GRADE MINIMUM RECEIVAL STANDARD FARMER DRESSED
Prior Definition / Tolerance in 2019/20	Total Defective: 6% Max by weight, includes - 3% Max by weight Poor Colour - 3% Max by weight total of All Other Defects except Mould
Agreed Change for 2020/21	
Quality Parameter	Total Defectives
Definition	6% Max by weight, includes - 3% Max by weight Poor Colour Note – no change to Mould

Commodity Name	Red Lentils
Commodity Grade Number(s) & Name(s)	CSP – 7.2.1 RED LENTIL BEANS – NO.1 GRADE MINIMUM RECEIVAL STANDARD FARMER DRESSED
Prior Definition / Tolerance in 2019/20	Total Defective: 4% Max by weight, includes - 1% Max by weight Varietal Restriction - 1% Max by weight Poor Colour Seed Coat - 1% Max by weight Poor Colour Kernel - 3% Max by weight total of All Other Defects except Mould
Agreed Change for 2020/21	
Quality Parameter	Total Defectives
Definition	4% Max by weight, includes - 1% Max by weight Varietal Restriction - 1% Max by weight Poor Colour Seed Coat - 1% Max by weight Poor Colour Kernel Note – no change to Mould

Commodity Name	Red Lentils
Commodity Grade Number(s) & Name(s)	CSP – 7.3.1 RED LENTIL BEANS – NO.2 GRADE MINIMUM RECEIVAL STANDARD FARMER DRESSED
Prior Definition / Tolerance in 2019/20	Total Defective: 8% Max by weight, includes - 1% Max by weight Varietal Restriction - 3% Max by weight Poor Colour Seed Coat - 1% Max by weight Poor Colour Kernel - 5% Max by weight total of All Other Defects except Mould
Agreed Change for 2020/21	
Quality Parameter	Total Defectives
Definition	8% Max by weight, includes - 1% Max by weight Varietal Restriction - 3% Max by weight Poor Colour Seed Coat - 1% Max by weight Poor Colour Kernel Note – no change to Mould

Commodity Name	Green Lentils
Commodity Grade Number(s) & Name(s)	CSP – 7.1.1 GREEN LENTIL BEANS – NO.1 GRADE MINIMUM RECEIVAL STANDARD FARMER DRESSED
Prior Definition / Tolerance in 2019/20	Total Defective: 4% Max by weight, includes - 1% Max by weight Varietal Restriction - 1% Max by weight Poor Colour Seed Coat - 1% Max by weight Poor Colour Kernel - 3% Max by weight total of All Other Defects except Mould
Agreed Change for 2020/21	
Quality Parameter	Total Defectives
Definition	4% Max by weight, includes - 1% Max by weight Varietal Restriction - 1% Max by weight Poor Colour Seed Coat - 1% Max by weight Poor Colour Kernel Note – no change to Mould

2.6 Agreed Change: Mechanical Damage & Sample Size – Broad Beans

A submission was received from industry covering two issues related to the Broad Bean Standards.

a) Mechanical Damage

The prior Standards included a definition and tolerance for Mechanical Damage that did not apply to any other pulse. In summary, the definition stated that if there was any damage to the seed coat, it was classified as Mechanical Damage. A request was made to delete any reference to Mechanical Damage and apply the definition of "Broken, Chipped, Loose Seed Coat and Split" as per other pulses such as faba beans.

During discussion, a number of factors were discussed including:

- The variation in classification between faba beans and broad beans was significant when applying the differing standards definitions.
- Feedback from overseas customers was they weren't concerned with a small fracture in the bean seed coat that would be classified as Mechanical Damage under the Standards. Reasoning being that many customers treat broad beans as "faba beans" in terms of Standards. In addition a major use of broad beans requires frying during which the seed coat is partially/wholly removed.
- Removal of the Mechanical Damage quality parameter would greatly speed up classification.

The Committee agreed with the submission and all references to Mechanical Damage have been removed from the Broad Bean Standards. The definition of "Broken, Chipped, Loose Seed Coat and Split" now applies in the 2020/21 Standards.

b) Sample Size for Assessment

The Standards previously required a 400 gram sample of broad beans to be assessed. As broad beans are large grains, the number of grains in a 400 gram sample for assessment is "relatively low" and industry considered that the sample may not be representative given this low number of grains.

Given the major defect tends to fall under the existing category of Mechanical Damage, there is a risk of inaccurate assessment of the load based on this low number of grains. A request was made to increase the sample size. The increased sample size and thus time for assessment would potentially be offset by the reduction in time for assessment of Mechanical Damage.

The Committee agreed with the industry submission and altered the Broad Bean Standards for 2020/21 to increase the sample size for assessment to 600 grams (reflective of grain size compared to faba beans). Given this change in sample size from 400 grams to 600 grams, the permitted limits for various contaminants in the Broad Bean Standards have been altered, without changing the tolerances that apply.

While the above changes (deletion of Mechanical Damage and increase in sample size) may have an impact on forward sales contracts, it was agreed this change should apply in the 2020/21 Standards.

2.7 Agreed Change: Bleached Grains – Kabuli Chickpeas

An issue was raised during 2019 on the classification of "bleached grains" in Kabuli Chickpea Standards. Following a review it was determined that industry was applying a different interpretation to this defect:

- Seed Coats appeared "bright white/bleached" with some in industry classifying these grains as Weather Damaged. As such, grains were being classified as Poor Colour or under the Total Defective category.
- Seed Coats may or may not appear loose, resulting in seed coats falling off during grain movement and grains then falling under the definition of "Broken, Chipped, Loose Seed Coat and Split".
- In some instances a varietal difference may lead to grains appearing as "bleached".
- These "bleached grains" may or may not be able to be clearly distinguished from other grains in the sample.

The Committee discussed the issue and determined that the current Standards definitions were not clear on the interpretation of this defect. While the defect of "bleached grains" may lead to other defective grain parameters, it was agreed that these grains would be included in the category of Poor Colour for the 2020/21 season and the definition would be revised accordingly.

3. Changes Not Accepted in the 2020/21 Season

The Committee reviewed its draft decisions developed during 2019 and industry feedback received following release of the 2019/20 Standards. As outlined below the following proposed change was not approved for the 2020/21 Standards.

3.1 No Change: Poor Colour - All Pulses

The Committee was advised of a proposal to alter the definition and thus tolerance of all small Poor Colour pulses that fall below the screen. The proposal was that these grains not be included as Poor Colour but are classified under Total Defectives.

The Committee is aware that there may be differences in interpretation of these grains, with some calling these grains Poor Colour and others as Total Defective (given they are pulse material that fall below the screen).

A number of factors were discussed on this issue including:

- Small grains (below the screen) may or may not be removed prior to processing.
- A large number of Poor Colour grains may be visually unappealing in a sample.
- If small Poor Colour grains are present in a sample there may be other defects present causing this quality parameter.

- Small Poor Colour grains may be a relatively frequent issue for some commodities but not others.
- There is a desire for consistency in interpretation across all pulse commodities, to assist accurate classification.
- If small Poor Colour grains falling below the screen were not to be classified as Poor Colour, the time taken for classification may be reduced.

Following discussion it was agreed that no change be made to the Standards for any pulse. For clarity, any small Poor Colour grains that fall below the screen following shaking are to be assessed as Poor Colour.

4. Future Review

Noted below are issues that were previously advised by the Committee for consideration over time.

4.1 Future Review: Nil Tolerance Parameters – All Pulses

The Committee has previously advised industry of research being undertaken by Grain Trade Australia (GTA) on the applicability of a nil tolerance in Standards. In conjunction with GTA the Committee will review various aspects related to this topic including:

- The definition of Nil.
- The applicability of a Nil tolerance to apply for each quality parameter in a bulk grain load.
- Regulatory impacts of any potential change away from Nil.
- Suitable tolerances by quality parameter and commodity to apply.
- The consistency of the definitions and tolerances across commodities.
- The method of assessment, including sample size.

The review by GTA has commenced and the Committee will consider any implications and possible changes in pulse Standards once the project findings have been made available.

4.2 Future Review: Truck Sampling – All Pulses

In prior seasons the Committee has been made aware of variations in procedures used by industry for sampling of static loads of pulses tendered for delivery. On various occasions the Committee has reviewed the current sampling procedures (as also applied to a range of cereal and oilseed commodities) and determined that if applied correctly, those procedures are suitable for obtaining a representative sample from each load tendered for delivery for the purposes of assessment against pulse Standards.

In 2018 the Committee was advised of planning for a potential research project to review the practicalities of using the documented sampling procedures for all commodities including pulses, and the implications of varying those procedures. The research would include other aspects of sampling such as the suitability of the probes and reduction in the sample to the size required for assessment as per the Standards.

As required, the Committee will participate in planning and implementation of that research project to ensure outcomes for pulses are adequately considered. At this point in time the project has not commenced however industry will be advised if the project proceeds.