

AWBI WHEAT CLASSIFICATION GUIDELINES

VERSION: FOR INCLUSION IN GRDC CLASSIFICATION TENDER AUGUST 2008

**NOTE: JANUARY 2008 VERSION MODIFIED TO INCLUDE DETAILS OF UDON
NOODLE SENSORY EVALUATION PROGRAM AND REMOVE SPECIFIC
ATTACHMENTS THAT ARE SUBJECT TO REVIEW AND NOT MATERIAL FOR THE
GRDC TENDER PROCESS**

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THE GUIDELINES

These Guidelines (and Attachments 1 – 7) constitute AWBI's guidelines with respect to the Classification of varieties of wheat. Unless indicated otherwise (by the use of inverted commas), terms starting with a capital letter within these Guidelines are defined in the Glossary in section 10.

The broad purpose of the Guidelines is to provide Industry Participants with information and guidance in relation to:

- (a) the objectives of wheat Classification;
- (b) the process for wheat Classification;
- (c) the grain samples, quality data and additional information that must be provided by Breeding Organisations to support an application for Classification of a variety of wheat;
- (d) the process to be followed by Breeding Organisations when submitting an Application for Classification of a wheat variety;
- (e) the objectives and grounds for reviewing the Classification of a wheat variety;
- (f) the process for varying the Classification of a wheat variety;
- (g) the grain samples, quality data and additional information that must be provided to support an Application for a variation to the classification of a wheat variety; and
- (h) the process to be followed when submitting an Application to vary the Classification of a wheat variety.

The Guidelines do not, and are not intended to exhaustively address all issues that may arise in respect of Classification. The Guidelines seek to address issues considered to be of central importance to Industry Participants. The Guidelines will be reviewed periodically, at which time feedback will be sought from Industry Participants as required. Elements of the Guidelines may be altered from time to time as required, and amendments (incorporated in the current version of the Guidelines) will be published on the AWB website at www.awb.com.au. Information in Attachments 1 to 7 will be posted in the Crop Shaping section to which access can be gained through agreement to the Crop Shaping Terms and Conditions. Industry Participants may also seek clarification and additional information from AWB at any time.

In addition to, but distinct from these Guidelines, AWBI, in its Crop Shaping function, publishes a "Wheat Varieties Guide", which is designed to provide an indication of market preference, and provides advice for payment incentives through the "Golden Rewards Premium Choice Varieties Program". Each of these is described briefly below:

- Wheat Varieties Guide: Each year, AWBI categorises wheat varieties that are dominant in production, or newly released, into three classes according to quality

characteristics and market suitability – Preferred, Acceptable and Marginal. These categories, and the preferences they reflect, are based solely on the quality characteristics of each variety, and how well that quality meets International market requirements. Growers seeking information on agronomic and disease performance of varieties for their specific production region should consult the appropriate sources (for example, a variety sowing guide produced by their State Department of Agriculture or equivalent). Further information is available by contacting AWBI; and

- Golden Rewards Premium Choice Varieties: This program is an AWB National Pool payment system designed to “shape the quality of the crop” by rewarding growers, through payment of a premium, for selecting and growing high quality wheat varieties that meet quality targets. This premium may vary from time to time and according to the variety of wheat.

2. THE OBJECTIVES OF CLASSIFICATION

Classification of wheat is the categorisation of a variety of wheat into a “Wheat Grade”. A Wheat Grade is awarded to a product based on its processing and end-use qualities. Quality requirements of a Wheat Grade may change from time to time in response to market requirements.

The Classification Process aims to deliver grain of consistent physical quality, processing performance and end-product quality to customers and end-users and thus increases the marketability of Australian wheat.

Review of the Classification of a variety of wheat (including downgrading in accordance with section 9 of these Guidelines) involves similar considerations of marketability. The Review process is outlined in section 8 and section 9 below.

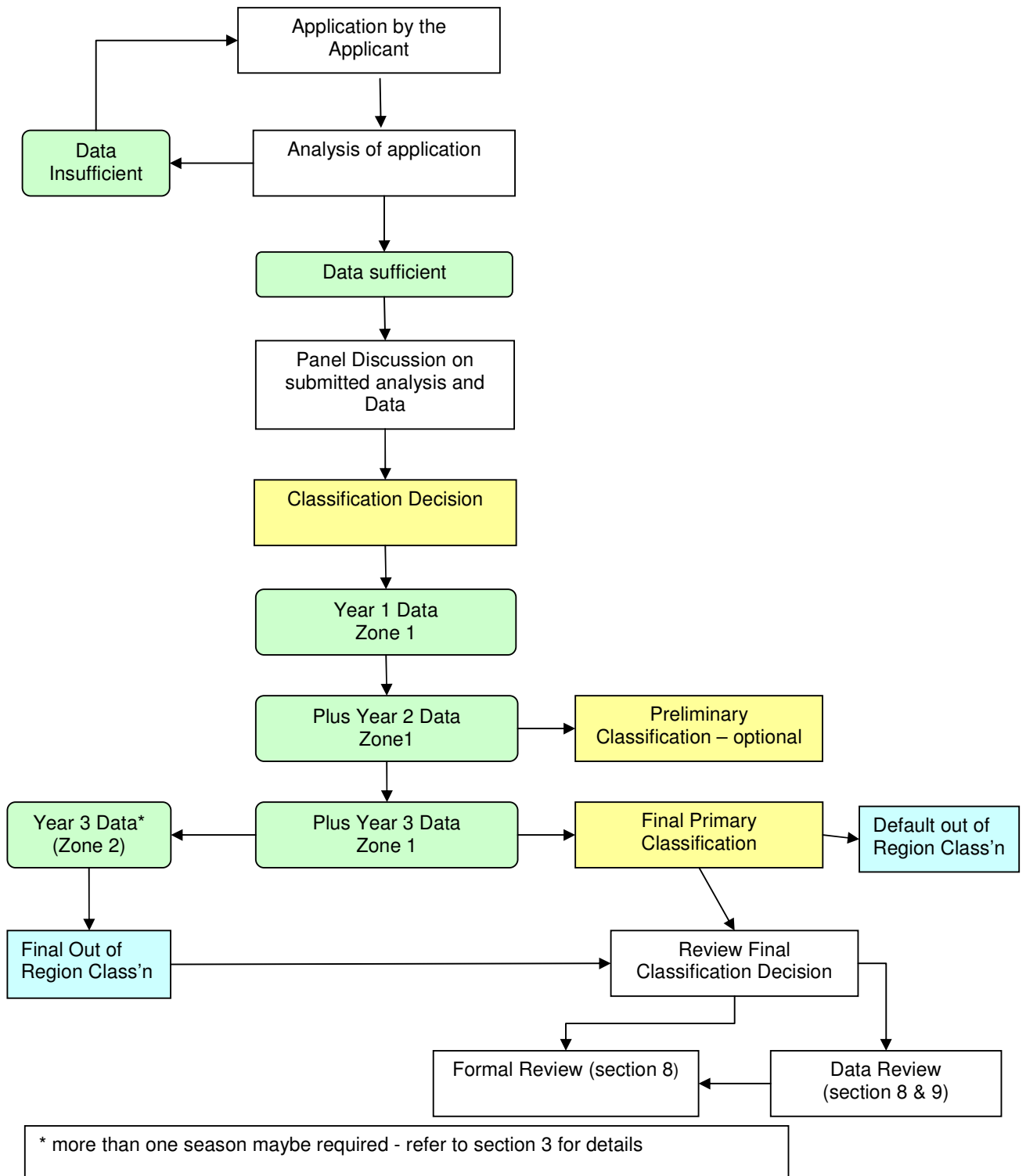
It is understood that the process of Classification and the outcome of Classification do not dictate the release or distribution of varieties to growers. Control of and responsibility for the release and sale of varieties to growers sits with the Breeding Organisation with whom proprietary rights reside. AWBI, through the Classification process, does not compel nor prevent the release of any variety. However, varieties without a Wheat Grade can only be received as FEED.

3. THE CLASSIFICATION PROCESS

Classification of a new variety of wheat is a complex task involving an evaluation of the quality of a variety, within a defined geographic area, over several years of production. Classification decisions are made by the AWBI Classification Panel and involve a series of defined, sequential stages. The Classification Process is summarised in Figure 1.

The overall quality of a wheat variety, its physical and chemical composition and resultant performance in processing and end-products, is the result of plant genetics, the environment and the interaction between the genotype and environment (GXE). Consequently, grain quality is influenced not only by the genetic make-up of the relevant variety, but by the geographic area in which it is produced, and the environmental and seasonal conditions that prevail. The Classification Process attempts to take into account genetic and environmental and GXE interaction effects.

Figure 1: Schematic Representation of the Classification Process



Classification decisions for each Candidate Variety of wheat are made on the basis of quality data (including grain quality, milling quality, dough rheology and performance in end products) that is collected from breeding trials on a seasonal (over a minimum of three seasons) and regional (relating to a defined region of production – a Classification Zone) basis. Other information (such as agronomic or pedigree information) may be submitted to support Applications at the discretion of the Breeding Organisation.

For a Candidate Variety to be considered at any stage in the Classification process, the relevant Breeding Organisation must submit the required data and information to AWBI, on the Application for Classification form that is included in Attachment 4, and in accordance with these Guidelines.

3.1 Classification Zones

Classification Decisions apply to wheat grown in specified Classification Zones.

Classification Zones define the geographic regions in which agronomic trials must be established to generate the data, samples and information required for the Classification Process. Trials for a Candidate Wheat Variety can be conducted in a range of Classification Zones. However Classification decisions will be made with respect to data and information on a Zone by Zone basis.

It is currently recognised by industry that each Classification Zone (listed below) is likely to exhibit different environments on a geographic and a seasonal basis. These differences may, in turn, impact on the quality of a single variety of wheat. As a result, the Classification of a single variety of wheat may vary between different Classification Zones.

The current Classification Zones are:

1. Queensland – defined by the state boundaries of Queensland;
2. Northern NSW – defined by the Queensland/NSW boundary and the area north of the Central NSW Zone;
3. Central NSW – defined by the region containing the receival sites Albert, Alectown, Bogan Gate, Condobolin, Euabolong West, Gobondery, Gunningbland, Kadungle, Kiacatoo, Mickibri, Ootha, Parkes, Peak Hill, Tomingley, Tottenham, Trundle, Tullamore, Wyanga, Yarrabandi, Yeoval and Yethera;
4. Southern NSW – defined by the Victoria/NSW state boundary and the area south of the Central NSW Zone;
5. Victoria – defined by the state boundaries of Victoria;
6. South Australia – defined by the state boundaries of South Australia; and
7. Western Australia – defined by the state boundaries of Western Australia.

3.1.1 Primary and Out-of-Region Classification Zones

Classification Decisions are reached by reference to a “Primary” Classification Zone or an

“Out-of-Region” Classification Zone.

A “Primary” Classification Zone is the geographic zone from which the first Complete Data Set (see Attachment 2) has been generated and on the basis of which the first Final Classification Decision can be made.

An “Out of Region” Classification Zone is any region other than the “Primary” Classification Zone.

3.1.2 Changes to Classification Zones

The geographic boundaries of Classification Zones may change in the future due to various factors, including any changes or advances in the industry’s understanding of GXE interactions.

AWBI will notify Industry Participants of any proposed changes to the Classification Zones by posting a notice on the AWB website no less than 12 months prior to any change having effect. At the time any such website notification is made, AWBI will notify all affected Industry Participants in writing of:

- (a) the Classification arrangements for affected varieties of wheat currently going through the classification process; and
- (b) any varieties that have already received Final Classification that are affected by the change in the Classification Zone. The Final Classification of these varieties will be reviewed in accordance with the process set out in section 8 and 9.

3.2 Classification Stages

The Classification of a new variety of wheat occurs in two stages:

3.2.1 The Feedback Stage

The Feedback Stage comprises of a Preliminary Classification (based upon a minimum of ‘Year 1 plus Year 2 Data’). Full data requirements are set out in Attachment 2 of these Guidelines. It commences upon the receipt of an Application for Classification form (in accordance with section 4 below).

The Feedback Stage serves to provide early feedback to the relevant Breeding Organisation as to the potential classification of the relevant wheat variety. Comments made at the Feedback Stage should not be taken as a representation, or any guarantee, of the likely Final Classification of that Candidate Variety.

The Panel can provide an assessment of a Candidate Variety, in the form of a Wheat Grade, based upon data and information from a minimum of two seasons’ quality testing from a single Classification Zone. This assessment constitutes a Preliminary Classification. Attainment of a Preliminary Classification is optional.

Preliminary Classification can be provided for any Candidate Variety in any Classification Zone where the prescribed data and information have been generated and provided to the Panel (see section 4 and Attachment 2).

Note: Feedback through a Preliminary Classification does not constitute a Classification Decision and does not guarantee the likely grade of a Final Classification (should this be granted). Where feedback is provided to a Breeding Organisation in the form of a "Preliminary Classification" any use made of such feedback, by the Breeding Organisation, will be at the Breeding Organisation's own risk. Use in any marketing program conducted by the Breeding Organisation should include disclosure of the following facts:

1. That it is a Preliminary Classification only and does not constitute a Final Classification;
2. No Final Classification has been obtained, and in the event no Final Classification is awarded, the variety will receive a default Classification of FEED for the purposes of delivery to and payment by AWB;
3. If a Final Classification is obtained, there is no guarantee that the Final Classification will be awarded at the same level as the Preliminary Classification; and
4. AWBI is not liable in respect of any losses incurred by any party as a result of an Industry Participant failing to adequately communicate to third parties the pre-Classification nature of a Preliminary Classification.

Industry Participants are required to make their own assessments as to the basis for determining future release and bulking strategies.

3.2.2 The Classification Decision Stage

The Classification Decision Stage commences following receipt of a further Application for Classification (defined in Attachment 2 and section 4), and usually concludes with a Final Classification. A Final Classification is usually made three years after the commencement of the process. However, the information and data requirement is the determining factor – not length of time. A Final Classification will be based upon a minimum data and information requirement of ‘Year 1 plus Year 2 plus Year 3 Data’ from a single Classification Zone (the Primary zone). Thus, a Final Classification can be awarded once that data has been generated and without first having a Preliminary Classification. Full data requirements are set out in Attachment 2 to these Guidelines.

Final Classification, subject to section 8 and section 9 below, is the outcome of a complete Classification Process in the form of a Wheat Grade. This Grade is the grade or grades in which a variety of wheat can be received from growers based on, and subject to, Industry Wheat Receival Standards.

The data requirements for an application for Final Classification are set out in section 4 and comprise a minimum of “Year 1 plus Year 2 plus Year 3” data, samples and information (Attachment 2).

A Final Classification has two elements, comprising:

- a Primary Final Classification (as discussed at section a) below); and
- a Default Out-of-Region or Final Out-of-Region Classification (as discussed in section b) below).

(a) Primary Final Classification

Primary Final Classification is determined for a Candidate Variety in a Classification Zone where the Complete Data Set and information has been generated and in accordance with these Guidelines (see section 4 and Attachment 2). In such circumstances, the relevant Classification Zone (to which the Complete Data Set relates) will be the “Primary Classification Zone”.

All Primary Final Classifications are accompanied by an Out-of-Region Classification which may be a “Default Out-of-Region Classification” or a “Final Out-of-Region Classification”, depending on the data and information provided (see below).

(b) Out-of-Region Classification

As noted in section 3.1, because varieties are likely to exhibit different qualities in different environments it is likely that the Classification awarded to a Candidate Variety in one Classification Zone may be different to that awarded in other Classification Zones.

As with all Classification Decisions, Out-of-Region Classifications are subject to sections 8 and 9 of these Guidelines.

i) **Default Out-of-Region Classification**

Default Out-of-Region Classification is awarded automatically with the Primary Final Classification and similarly is automatically updated if the classification in the Primary zone changes (up or down). It applies to all Classification Zones other than the Primary Classification Zone, in the absence of Classification data and information for these Classification Zones being provided to the Panel.

In such circumstances, the Default Out-of-Region Classification is determined in the following manner:

- Primary Classification Australian Prime Hard QLD – Default Classification Australian Hard NNSW, Australian Hard CNSW*, Australian Hard SNSW, Australian Premium White all other Zones;
- Primary Classification Australian Prime Hard NNSW - Default Classification Australian Hard QLD, Australian Hard CNSW*, Australian Hard SNSW, Australian Premium White all other Zones;
- Primary Classification Australian Prime Hard SNSW - Default Classification Australian Hard QLD, Australian Hard NNSW, Australian Hard CNSW*, Australian Premium White all other Zones;
- Primary Classification of Australian Hard in any Zone – Default Classification Australian Premium White in all other Zones*;
- Primary Classification of Australian Premium White in any Zone – Default Classification Australian Standard White in all other Zones*;
- Primary Classification of Australian Standard White in any Zone – Default Classification Australian General Purpose in all other Zones*;
- Primary Classification Australian Soft in any Zone – Default Classification Australian General Purpose in all other Zones*;
- Primary Classification Australian Noodle in any Zone – Default Classification Australian Standard White in all other Zones*;
- Primary Classification Australian Premium Durum – Default Classification FEED in all other Zones*;
- Primary Classification of any Grade on the basis of field LMA expression data – Default Classification FEED in all regions;

*Note: *CNSW – where the Classifications are the same in NNSW and SNSW it will be the same in CNSW; where the Classifications are different in NNSW and SNSW it will be the lower of the two classifications in CNSW until such time as data is produced from CNSW.*

The default classification may change in the future due to various factors, including any changes or advances in the industry's understanding of GXE interactions, the need to respond to market requirements and improvements in the understanding of market

conditions. AWBI will notify Industry Participants of any proposed changes to the Default Out-of-Region Classification by posting a notice on the AWB website no less than 12 months prior to any change having effect.

The Breeding Organisation may request and receive a default classification of FEED for their Candidate Variety in any Zone.

ii). Final Out-of-Region Classification

Final Out-of-Region Classification can be awarded to a Candidate Variety that has already received a Primary Final Classification and where Supplementary Data has been provided by the Industry Participant in relation to another Classification Zone. The Supplementary Data that can be provided may be either:

Target Grade Same/Lower than Primary Zone:

- 'Year 3 data' as specified in Attachment 2 for the new zone (being a zone other than the Primary Classification Zone). This data is required if the Target Classification sought in the new zone is the same or lower than the grade received in the Primary Classification Zone. If the Target Classification is the same as the Primary Classification Zone the data must demonstrate that the quality is consistent with the Primary Classification Zone; or

Target Grade Higher than Primary Zone:

- a minimum of 'Year 2 plus Year 3 Data' as defined in Attachment 2 for the new zone (being a zone other than the Primary Classification Zone). This additional data is required if the Target Classification sought is higher than the Grade received in the Primary Classification.

Where the quality of the Candidate Variety in the Supplementary Data is considered by the Panel to be inconsistent with the Complete Data Set for the Primary Classification Zone, additional quality data may be required in respect of Classification Decisions relating to the new zone. This will be discussed with the Breeding organisation as required.

4. APPLICATION FOR CLASSIFICATION

4.1 Application

A completed "Application for Classification" form (see Attachment 4) must be submitted to AWBI for each Candidate Variety, each time that Material is supplied to AWBI or its related bodies corporate as part of the Classification Process.

Only the person or organisation holding proprietary rights in a variety may submit an Application for Classification except in the circumstances of a review where AWBI may initiate the process in sections 8 and 9.

The Panel will not consider an application for a Final Classification if the data and information provided do not meet the minimum criteria outlined in these Guidelines.

All data and information must be provided together with the completed "Application for

Classification” form. This should be submitted no later than 4 weeks before the date of the Panel meeting at which the application is to be discussed.

Each “Application for Classification” must nominate a Target Classification which the Candidate Variety is intended to achieve. This Target Classification will be one of the following nine Australian Grades of Wheat: Australian Premium White; Australian Prime Hard; Australian Hard; Australian Premium Durum; Australian Standard White; Australian Soft; Australian Noodle, Australian APWT, or, Australian Versatile Soft (note that is the SWW type that has not been formally created as a Grade at the time of publication and is only available for Classification in the Esperance region of WA).

Table 4.1a below indicates the current availability of Grades for Classification in each Classification Zone.

| Wheat Grade | Classification Zone |
|---------------------------|-------------------------------|
| Australian Premium White | All Zones |
| Australian Prime Hard | QLD, NNSW, CNSW and SNSW only |
| Australian Hard | All Zones |
| Australian Premium Durum | All Zones |
| Australian Standard White | All Zones |
| Australian Soft | All Zones* |
| Australian Noodle | NNSW, CNSW, SNSW, WA & Vic* |
| Australian APWT | WA only* |
| Australian Versatile Soft | Esperance, WA only* |

Table 4.1a: Wheat Grades currently available for Classification

* Segregations/Pools for grower delivery/payment may not be available over the entire region.

The availability of Grades is determined at the discretion of AWB Pool Management. Wheat Grades may vary over time with the result that affected varieties will automatically be classified into the next available, lower Grade. If requested by the Breeding Organisation, a Review of the Classification of the affected varieties of wheat will be undertaken pursuant to the process set out at sections 8 and 9. AWBI will consult with relevant Breeding Organisations to determine the requirement for a Review of Classification.

4.2 Generation of Data

In the event that amendments are made to the Control Varieties for any Classification Zone, AWBI will notify Industry Participants of proposed changes by posting a notice on the AWB website no later than 6 months prior to the upcoming planting season. These new Control Varieties will be phased in over the three year period of the Classification Process and in the

interim period data already generated using existing controls will be considered by the Panel.

The data and testing requirements are set out in Attachment 2 for the Candidate Variety and the appropriate Control Varieties for each stage of the Classification Process (that is, Preliminary Classification, Final Primary Classification and Final Out-of-Region Classification).

All data for a Candidate Variety must be accompanied by data for appropriate Control Varieties for the Target Grade generated from the same trials and in the same manner as data for the Candidate Variety. Attachment 5 sets out the appropriate Control Varieties, by Target Classification and Zone. (Detail of the suggested formatting and explanatory information for recording and presentation of data for Classification is contained in Attachment 8).

All data provided to AWBI for consideration by the Panel should conform to “Wheat Receival Standards” as published on the NACMA website, for the Target Classification. The Sample Requirements including the target receival standards are set out at Attachment 6. These may change from time to time and AWBI will continue to ensure that the most current version is available from the NACMA website. The Panel will use its discretion to determine the usefulness of data generated from samples that do not meet receival standards.

Data submitted in support of an Application for Classification must:

- (a) be generated from samples drawn from replicated trials (established to evaluate agronomic performance and yield according to the “ACAS Guidelines”), and the samples from which data is derived must be prepared according to Attachment 6 which is a modification of the “ACAS Guidelines”;
- (b) be generated for the Candidate Variety and appropriate Control Varieties for the Target Classification (see Attachment 5)
- (c) include data for appropriate Control Varieties that is derived from samples drawn from the same trials and prepared in the same manner as those for the Candidate Variety; and
- (d) meet the basic wheat quality requirements set out in Attachment 6.

4.2.1 Breeding Organisation Generated Data

Data in support of an Application for Classification can be provided by any laboratory that participates in the AWBI laboratory proficiency-testing program and is producing results with levels of accuracy acceptable to AWBI.

All laboratories involved in the proficiency-testing program have been advised of the criteria and the means by which AWBI determines acceptable levels of accuracy. These criteria are set out in Attachment 3. The proficiency program is used to monitor the consistency of data and performance of laboratories providing data for Classification. Where levels of accuracy in the program are not acceptable, Classification Data will be examined to determine whether or not this has translated into inaccurate and unacceptable data for Classification. Note that all Classification Data submitted are assessed for typographical errors and inaccuracies that potentially affect the utility of the Data for the purpose of Classification.

AWBI will, from time to time, post to its website a list of laboratories that are involved in the AWBI laboratory proficiency-testing program.

AWBI's determination of acceptable laboratory results is based solely upon the need for AWBI to have confidence in the quality of results provided by laboratories. This in no way implies or guarantees that all data from a laboratory will be without error, nor does it imply or guarantee the suitability of this data for the purposes of any other party. All Industry Participants must individually ascertain the accuracy and acceptability of results from any laboratory they intend to use for any purpose.

- Please note that end-product testing for Classification can be conducted at the laboratories detailed in the table below (Table 4.3.1.a).

| End product Test | Laboratories | Measurements Required |
|--|--|--|
| Yellow Alkaline Noodles | All current | Fresh Noodle sheet colour at 2hr - b*, L*,a*, & 24hr - b*, L*, a* Cooked Noodle sheet colour - b*, L*,a*, Texture |
| Udon Noodle* | DAFWA, BRI Ltd, Agrifood Technology Ltd, DPINSW, DPIVic | Fresh Noodle sheet colour at 2hr - b*, L*,a*, & 24hr - b*, L*, a* Cooked Noodle sheet colour - b*, L*,a*, Texture |
| Udon Noodle Sensory* *To be completed on 60% extraction flour | DAFWA & BRI Ltd | Japanese sensory method - appearance and texture |
| White Salted Noodles | All current | Fresh Noodle sheet colour at 2hr - b*, L*,a*, & 24hr - b*, L*, a* Cooked Noodle sheet colour - b*, L*,a* Texture |
| Bread Baking | All Current* *Pending final acceptability determination | Loaf volume, crumb colour, appearance and texture scores, |
| Biscuits | Arnott's, NSW DPI, BRI Limited, DAFWA and Agrifood Technology Pty Ltd. | Spread ratio, cracking |
| Pasta | NSW DPI, Tamworth and Agrifood Technology Pty Ltd. | Dry Spaghetti colour (Minolta L* a* and b*) Cooked Spaghetti Colour (Minolta L* a* and b*) Optimum Cooking Time (OCT) Texture |

Table 4.3.1.a: Summary of laboratories where end product evaluation can be conducted for Classification.

In order to ensure the veracity and accuracy of the data and information upon which Classification Decisions are made, AWBI will require each Industry Participant submitting such data to complete a statutory declaration in the Application for Classification form set out in Attachment 4 of the Guidelines. A person who intentionally makes a false statement in a statutory declaration under the *Statutory Declarations Act 1959* is guilty of an offence, and may be fined, or jailed, or both.

The Panel may also seek additional supporting data from Breeding Organisations relating to genetic background and agronomic performance, for any Candidate Variety submitted for Classification. There is no obligation on the Breeding Organisation to provide this information.

AWBI reserves the right to:

- review source documents and audit test data in relation to an Application for Classification of a variety of wheat; and
- obtain test results provided in support of a Target Classification directly from the relevant laboratory;

4.2.2 Generation of Samples for Review of Classification

AWBI reserves the right to obtain and/or generate and evaluate samples of Candidate Varieties after they have received a Final Classification. These samples may be sought from the Breeding Organisation or other sources as per sections 8 and 9.

4.3 Analysis of Samples

All samples to be used to generate data for Classification (regardless of the laboratory at which they are analysed) are to be tested with reference to the Target Classification nominated by the Breeding Organisation for the Candidate Variety and in accordance with the testing and data requirements for Classification (Attachment 2).

5. AWBI CLASSIFICATION PANEL

The AWBI Classification Panel (or “Panel”) is currently composed of three AWBI representatives, three external industry experts selected by AWBI and one representative of the Flour Millers’ Council of Australia (**FMCA**).

The composition of the Panel, and identity of the members, may change from time to time as required.

The Panel has at least four sitting dates per year that involve face to face meetings of the Panel members. These dates are posted on the AWB website. The Panel may convene at other times, in other ways, to address extraordinary requirements or to handle the volume of material being presented by Breeding Organisations. These dates will be advised to affected parties as appropriate.

5.1 Classification Decision Making Process

Assessment of quality requirements involves the application of expert or experience-based judgment, for example, analysing and understanding the interaction of different parameters and assessing appropriate end-uses for varieties of wheat. Given the subjective nature of some of the required assessments, the Panel is composed of members who as a whole possess knowledge of Australian wheat quality, milling processes, flour and dough quality and end product performance. In addition to this knowledge they also have considerable experience within the Australian wheat market.

Notwithstanding that all decisions require some level of judgment to be exercised by the

Panel, all Candidate Varieties will be assessed:

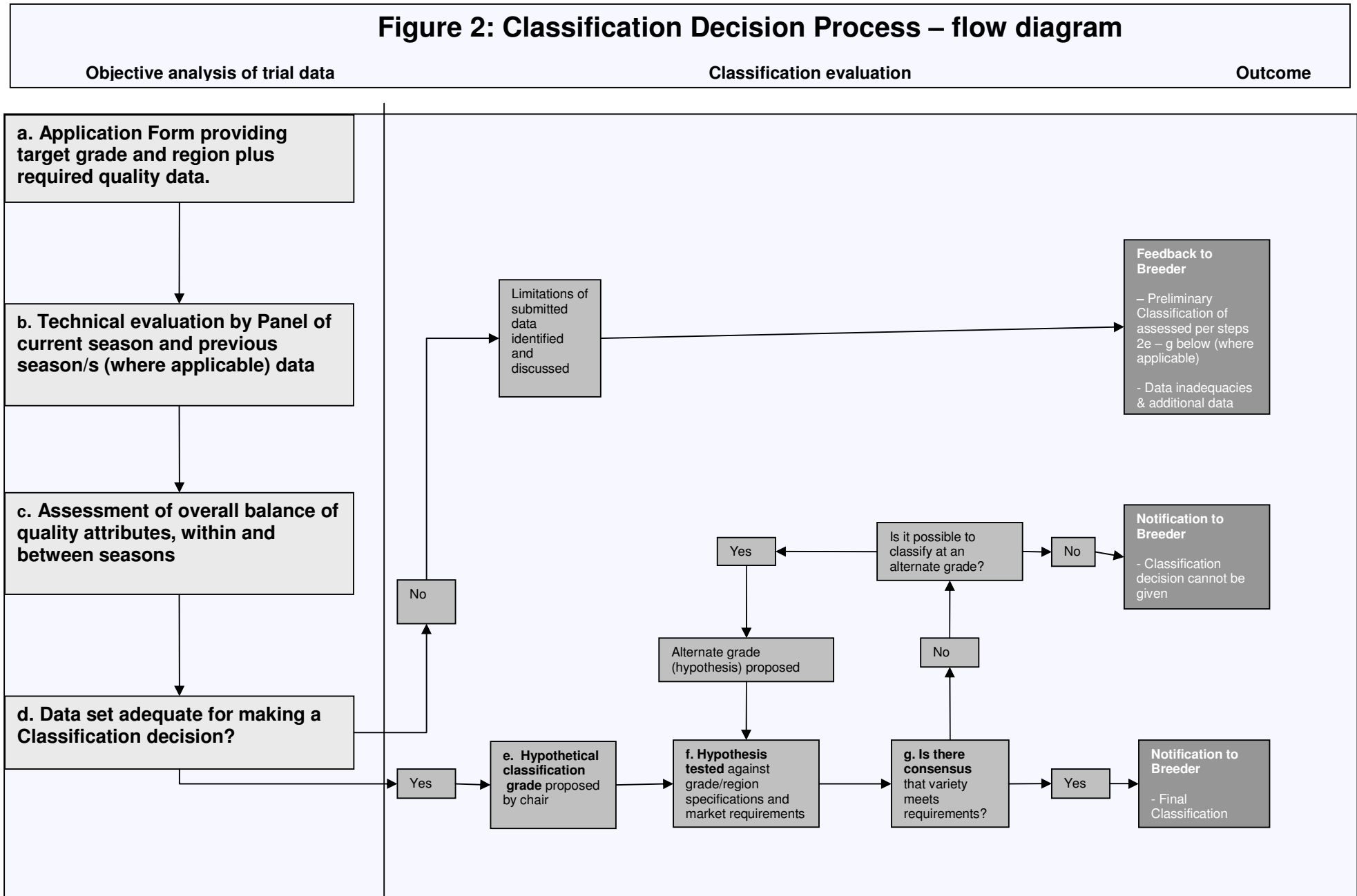
- (a) According to the Target Classification nominated by the Breeding Organisation;
- (b) In comparison with appropriate Control Varieties for the relevant Classification Zone and Target Classification (Attachment 5);
- (c) By reference to the “Wheat Grade Quality Requirements”, set out as Attachment 1 to these Guidelines and available on the AWB website.

All Panel decisions are reached through consensus. There is no voting. In the event that the Panel cannot achieve a decision by consensus and the Breeding Organisation involved requests that a decision about Final Classification be made, the Panel will award the highest Classification upon which all Panel members can agree.

The Panel is chaired by a panel member and the Chairperson is responsible for ensuring that decisions made by the Panel are reached through consensus. AWBI undertakes administration activities for the Panel.

Where consensus cannot be achieved, additional samples or relevant data (or both) will be requested from the Breeding Organisation. This may, in some circumstances, require a further season of trials. Where the Panel becomes aware of the need for additional samples or data (or both), AWBI will immediately communicate this fact, and any further appropriate steps, to the Breeding Organisation in writing.

Figure 2: Classification Decision Process – flow diagram



6. REPORTING OF OUTCOMES

All Classification Decisions and Feedback will be formally notified by AWBI to the relevant Breeding Organisation verbally after the relevant Panel sitting date. Such notifications will be confirmed in writing.

Once a Final Classification decision is made for an unnamed variety, an official statement will be produced for the Breeding Organisation by AWBI, incorporating the Panel's comments and the Final Classification decision. Summary information will subsequently be displayed on the "Crop Shaping" section of the AWB website for the information of those who have signed the agreement entitled "Crop Shaping Information – Access Terms and Conditions".

Where a Final Classification is awarded or revised for a named variety, an official statement will be produced for the Breeding Organisation by AWBI, incorporating the Panel's comments and the Final Classification decision. Summary information will subsequently be displayed on the AWB website for public information and a press release will be produced by AWBI.

For varieties in the Feedback Stage, (ie having received a "Preliminary Classification"), a confidential note will be developed for the Breeding Organisation by AWBI incorporating the Panel's comments and the relevant feedback. However, subject to section 3.2.1 which permits disclosure of the actual Preliminary Classification (subject to certain requirements) this information is not for public dissemination by either party.

Summary information and data for all Final Classifications will also be made available to the convenors of the Royal Australian Chemical Institute Cereal Chemistry Division Cereal Varieties sub-committee for inclusion in the annual report.

In order to ensure that grain handlers are able to receive deliveries from Growers, Breeding Organisations are required to advise AWBI in writing the name of the variety and the Classification Zone/s in which it has been released.

7. STORAGE OF INFORMATION

All information, data and samples provided to AWBI or the Panel (or both) in support of an application for Classification, and any internal Classification information held by AWB and the Panel (**Classification Records**), are retained and filed by AWBI.

Provision of information, data and samples to AWBI or the Panel (or both) in support of an application for Classification constitutes consent to AWBI retaining the Classification Records for a period of up to 10 years from the date of the relevant Classification Decision.

Storage of Classification Records ensures that a complete record of each Classification Decision will be available for auditing by a third party, or AWBI, for a suitable period after a Classification Decision is made, including for the purposes of a variation of a Classification decision under section 9.

Subject to the public disclosures listed in sections 6, only members of AWBI and the Panel have access to Classification Records, and Classification Records will not be disclosed to any third party unless required by law or consented to by the relevant Breeding Organisation.

8. REVIEW OF THE FINAL CLASSIFICATION OF VARIETIES OF WHEAT

As outlined in section 8.1 and section 8.2, Final Classifications can be reviewed in two ways:

- Upon additional data and submissions (via the Classification Process) being provided to AWBI and evaluated by the Panel (**Data Review**); or
- Upon the request of the Breeding Organisation for a formal review, and without additional data being provided to AWBI and evaluated by the Panel (**Formal Review**).

No Review is available in respect of any Classification Decision prior to a Final Classification.

8.1 Data Review

A Data Review may result in a Final Classification staying the same or being upgraded or downgraded and may be initiated by either the Breeding Organisation or AWBI. This process arises when additional data is generated from samples collected and prepared following the Classification Process.

Where the review is initiated by the Breeding Organisation the Classification Decision will be made according to the process set out in sections 1-7.

If the Panel decides to upgrade a variety, it will be reported in accordance with the process set out at section 6.

Where the review is initiated by AWBI the process of notification, information exchange, decision making and implementation will occur as set out at section 9.

8.2 Formal Review

Where a Breeding Organisation wishes the Panel to review a Final Classification Decision on the basis that the Classification Decision contains a material error, the Breeding Organisation may activate the following Formal Review process:

- (a) Formal application for Review is to be made in writing by the Breeding Organisation to AWBI no later than 4 weeks after the date that the Breeding Organisation was notified of the Panel's decision as to Final Classification;
- (b) the Application for Review must be in writing and:
 - (i) identify the Breeding Organisation;
 - (ii) specify the Candidate Variety in respect of which the Review is sought; and
 - (iii) provide a submission outlining the basis of the application for Formal Review including details of the nature of the material error, the subject of the formal review and what the decision should have been in the absence of the material error.

- (c) AWBI will notify the Breeding Organisation in writing that it has received the Application for Review, will provide details of the fee payable under paragraph (j) below and will set a date for the Review;
- (d) the Review will be conducted at venue determined by AWBI, on a date agreed with the Breeding Organisation. AWBI will be responsible for coordinating attendees;
- (e) the participants in the Review will be the current Panel, (this may be differently constituted from the Panel that made the original Classification decision). In addition, the following will be invited to observe, but not participate in, the decision making process,
 - (i) representatives of the relevant Breeding Organisation and
 - (ii) a grower representative of the Grains Council of Australia to act as an independent observer, and who will also be entitled to chair the meeting;
 - (iii) representatives of AWBI;
- (f) the Breeding Organisation may present the basis and reasons for the Review as outlined in their written submission may not raise any additional matters to those set out in their written submission unless requested by the Panel;
- (g) the Panel will assess the submissions as to the grounds for the Review as set out in the written Application for Review;
- (h) decisions will be reached through consensus by the Panel. If consensus cannot be achieved more information or clarification may be requested from the Breeding Organisation;
- (i) If the Panel still cannot achieve consensus, the Panel will award the highest Classification grading upon which all Panel members can agree;
- (j) applicants will be required to pay a cost based fee not exceeding \$10000 to cover the costs of re-convening the Panel (time, accommodation and travel). If the Applicant is successful in the Review, this fee will be refunded in full.
- (k) conclusions reached at the Review are final. No further discussion on the Classification will be entered into thereafter between the Panel and the Breeding Organisation.
- (l) In the event that the Panel changes the original Classification Decision, the Reviewed Decision will immediately be notified to the Breeding Organisation. Further reporting of outcomes will be completed as outlined in Section 6.

9. AWBI DATA REVIEW OF CLASSIFICATION OF A VARIETY

9.1 Objectives and Grounds for Review Of Final Classification

Various factors may result in the Final Classification awarded to a variety of Wheat being inappropriate or becoming anomalous over time. These factors may range from inaccuracies in the data or samples provided to AWBI or the Panel or both, to evolving commercial or market conditions.

A Final Classification awarded to a variety of wheat may be reviewed in circumstances including, but not limited to:

- (a) where genetic deficiencies arising from an attribute or characteristic of the relevant variety of wheat (for example LMA prone germplasm) are identified;
- (b) where the original data set provided to AWBI or the Panel failed to adequately reveal a deficient characteristic of the variety of wheat, or masked this characteristic in some other manner;
- (c) the need to respond to changes in market conditions and improvements in our understanding of market conditions, including circumstances where a Classification appropriate at the time of an original decision is rendered anomalous or inappropriate with the passage of time and evolving commercial expectations, or where technological innovation renders a variety of wheat dated or obsolete;
- (d) the event that a quality defect becomes apparent in the wheat after release;
- (e) the event that the boundaries of a Classification Zone change

9.2 Commencement of AWBI Initiated Review Process

Where AWBI believes that one or more of the grounds outlined in section 9.1 (above) applies to a variety of wheat and a decision is made to commence a review of the Classification, AWBI will notify the Breeding Organisation of the fact that it has decided to seek a review of the Classification of the Candidate Variety. The decision to commence a review of Classification is solely at the discretion of AWBI who may take into account any factors it considers relevant. Where the Breeding Organisation or Seed Commercialiser no longer exists the process will proceed without the notification steps – except where grower notification is required.

At that time, AWBI may notify the Breeding Organisation of a process to collect samples and data for the review of the Candidate Variety and appropriate Control Varieties.

As a minimum, AWBI may require all previous data used for the initial Classification Decision plus an additional set of 'Year 3 Data' (see Attachment 2) to be provided to it or may elect to generate this data independently of the Breeding Organisation. The Breeding Organisation (or its nominated representative) may also provide materials in support of maintaining the existing Classification or that may have implications for the timing of implementation of the Decision, and such materials must be considered by AWBI.

Data and information will be presented to the Panel in accordance with section 4. The Panel

will make a recommendation to AWBI regarding the appropriate Classification of the variety based on data available. If the recommendation is that the Classification of the variety of wheat be downgraded, the process outlined in section 9.3 and Figure 3 will be followed. If the recommendation is that there should be no change in the Classification of the variety of wheat, the previous Classification will be confirmed with the Breeding Organisation. If the recommendation is that the Classification of the variety should be upgraded the Breeding Organisation will be advised and the outcome reported as per section 6.

If the Panel recommendation is to downgrade the variety and the Breeding organisation agrees with this decision the process will move immediately to implementation as described at the end of section 9.5.

9.3 Review Materials

AWBI will notify the relevant Breeding Organisation in writing of the Panel recommendation to downgrade the Classification of the Candidate Variety and provide materials in support of the recommendation (**AWBI Review Materials**).

Depending upon the basis for the Review, the AWBI Review Materials may include:

- (a) in respect of category 9.1(a)
 - (i) laboratory reports that identify genetic deficiencies in a variety of wheat;
 - (ii) materials that record that the Breeding Organisation has submitted this variety of Wheat for Classification; and
 - (iii) a record of the Classification gained;
- (b) in respect of categories 9.1(b) and 9.1 (d):
 - (i) Classification Data that identifies a deficient characteristic of a variety of wheat;
 - (ii) materials that record that the Breeding Organisation has submitted this variety of Wheat for Classification; and
 - (iii) a copy of original data provided by the Breeding Organisation in respect of a variety of wheat which, is inconsistent with the Classification Data;
- (c) in respect of category 9.1(c):
 - (i) evidence of a Breeding Organisation having obtained a prior Classification on the basis of historical samples and analysis;
 - (ii) industry, customer or end-user reports or surveys which suggest that evolving commercial and market expectations and innovations have rendered the original Classification anomalous or inappropriate; and/or
 - (iii) current Grade quality targets against which New Varieties are being assessed;

- (d) in respect of category 9.1 (e):
 - (i) Classification Data which identifies a deficient characteristic of a variety of wheat relative to the Wheat Grade quality targets within the new Zone boundaries;
- (e) in respect of any grounds for Review of a Final Classification, any other information which AWBI considers may be relevant to the Reviewed Classification Decision.

The Breeding Organisation may then either advise AWBI that it agrees with the Panel's recommendation (in which case the new classification will apply and take effect as set out in 9.5) or provide AWBI any materials which it considers may be relevant to a Review Decision (**Breeder Review Materials**). Such materials must be provided no later than 7 weeks after the date of the notice enclosing the AWBI Review Materials. The Breeder Review Materials may include written submissions on issues relating to proposed Reviewed Classification, commercial and other information, data and samples.

9.4 Review Panel Sitting

AWBI will set a date for a Classification Review Panel sitting that will be held at a venue determined by AWBI, at least 7 weeks after the date of the notice enclosing the AWBI Review Materials, on a date agreed with the Breeding Organisation. AWBI will be responsible for coordinating attendees.

The composition of the Panel will be consistent with the requirements for a Formal Review under section 8.2.

Observers but not participants at the Panel sitting will be:

- (a) Representatives of the relevant Breeding Organisation and Seed Commercialiser;
- (b) A grower representative of the Grains Council of Australia to act as an independent observer, and who will also be entitled to chair the meeting; and
- (c) Representatives of AWBI;

The Breeding Organisation will have the opportunity to present their Review Material to the Panel but not to enter into any other discussion with the Panel unless additional information is requested by the Panel;

The Panel will assess the submissions as to the basis for the Review and any additional materials provided by Industry Participants in relation to the variation of the Classification of the variety – to the extent to which they relate to the quality and marketability of the variety.

Decisions will be reached through consensus of the Panel. If consensus cannot be achieved more information or clarification may be requested from the Breeding Organisation.

If the Panel still cannot achieve consensus, the Panel will award the highest Classification grading upon which all Panel members can agree. Conclusions reached at the Review sitting are final. Subject to an application for a Formal Review under section 8.2 in relation to a material error no further discussion on the varietal Classification will be entered into

thereafter between the Panel and the Breeding Organisation.

In the event that the Panel recommends downgrading a variety of wheat, the decision to Downgrade will be notified immediately to the Breeding Organisation and the broader industry, and thereafter be posted on the AWB website.

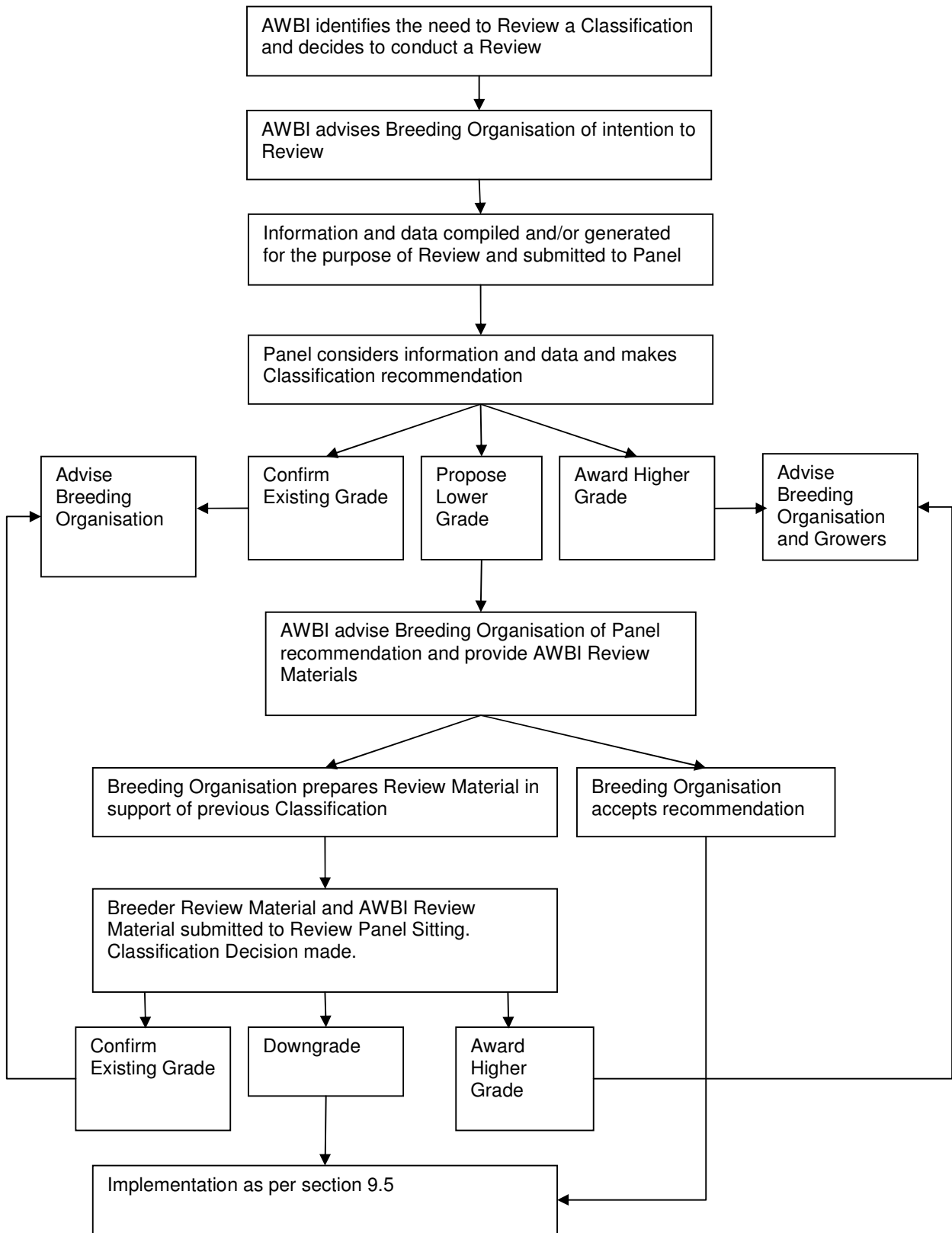
9.5 Implementation of Review Decision

The decision to Downgrade will take effect as follows:

- a. where the Panel decides to Downgrade a Final Classification first awarded after the first publication of these Guidelines (24th December 2005), the decision will take effect 2 full growing seasons (sowing to harvest) after the date the Downgrading Decision is made. Breeding Organisations should ensure that their communications and arrangements with Seed Commercialisers take this into consideration. Seed Commercialisers should ensure that their communications and arrangements with Growers take this into consideration; or
- b. where the Panel decides to Downgrade a Final Classification first awarded prior to the publication of these Guidelines, the decision will take effect 2 full growing seasons (sowing to harvest) after the date of the Downgrading Decision unless the Breeding Organisation or Seed Commercialiser can demonstrate significant commercial reasons in support of a nominated longer period. The decision to accept an extended period will be made by AWBI in consultation with the Breeding Organisation and Seed Commercialiser.

Default classifications will automatically change in accordance to the new Classification and the relationships detailed in section 3.2.2.

Figure 3: Outline of Classification Review Process Initiated by AWBI.



GLOSSARY OF TERMS

Applicant: Person or organisation holding proprietary rights in a variety to be, or that has been, Classified.

Application for Review: see section 8.2.

AWB Pool Management: Division of AWBS responsible for management of the National Pool on behalf of AWB International Ltd.

AWBI: AWB International Ltd, wholly owned subsidiary of AWB Ltd and current holder of the Single Desk for the Export of Wheat.

AWB Review Materials: see section 9.3.

Breeding Organisation: Person or organisation holding proprietary rights in Australia for a variety to be, or that has been, Classified.

Breeder Review Materials: see section 9.3.

Candidate Variety: a wheat variety for which an application is provided to AWBI for consideration in the Classification Process.

Classification: The highest Wheat Grade into which a Variety can be received.

Classification Decision: Determination by the Panel of the highest Wheat Grade into which a Variety can be received.

Classification Decision Stage: Point in the Classification Process at which a Final Classification can be made. See section 3.6.

Classification Process: The process undertaken by AWBI to classify wheat varieties, as set out in these Guidelines.

Classification Records: All data and information compiled during the Classification Process and written records of Panel feedback and decisions.

Classification Zone: Region to which a Classification Decision is referenced and for which the decision is related.

Complete Data Set: see Attachment 2.

Control Varieties: Varieties against which Candidate Varieties are compared in order to assess the relative quality of the Candidate Variety within a Classification Zone.

Feedback Stage: Point in the Classification Process at which a Preliminary Classification is provided by way of guidance for the Breeding Organisation.

Final Classification: The Wheat Grade awarded to a Candidate Variety that dictates the Grades

into which the variety can be received, subject to Wheat Reveal Standards. See section 3.6.

Formal Review: see section 8.2.

Grains Council of Australia: Peak grower representative body.

Grower/s: Compan/ies or individual/s delivering at least 33 1/3 metric tonnes of wheat annually.

Guidelines: The requirements, processes and information contained in this document and attachments.

GXE: Genotype by environment interaction (see section 3).

Industry Participants: Wheat Breeding Organisations and associated Seed Commercialisers.

Laboratory Proficiency Criteria: detailed in Attachment 3.

LMA: Late Maturity Alpha Amylase.

Out-of-Region Classification: see section 3.2.2

Panel: the National Pool Classification Panel (see section 5).

Preliminary Classification: Technical assessment provided as feedback to the Breeding Organisation based on Year 1 and Year 2 data, as outlined in section 3.2.1

Primary Final Classification: The AWBI Grade awarded to a Candidate Variety that dictates the Grades into which the variety can be received with reference to the Classification zone from which the Complete Data Set has been generated.

Review: Process of reassessing the Classification of a variety.

Seed Commercialisers: Organisations responsible for the sale of wheat seed to growers.

Supplementary Data: see section 3.2.2 (ii)

Target Classification: Grade for which the Breeding Organisation (or nominee) would like the variety to be Classified.

ATTACHMENT 1: WHEAT GRADE QUALITY REQUIREMENTS

SUBJECT TO REVIEW - DETAILS TO BE PROVIDED TO THE SUCCESSFUL TENDER.

ATTACHMENT 2: TESTING GUIDELINES

As part of the Classification Process AWBI requires as a minimum the following tests to be conducted on all Candidate Variety and appropriate Control Variety (see Attachment 5) samples. All samples are to be generated according the sample requirements and meet the quality standards set out in Attachment 6 for the Target Grade.

The actual data to be recorded and the format for submitting the data is set out in Attachment 8. Quality data includes physical grain quality, LMA screening, milling performance, flour and dough properties and end product quality.

The minimum data required for a Final Classification in a Zone is:

- 3 years' (seasons) data for physical grain quality, milling performance and flour and dough property assessment
- 2 distinct induction event data for LMA laboratory based screening. Note that this may necessitate additional field screening data – see section A2.2 below.
- 2 years' (seasons) worth of end product quality assessment.

Data requirements are broken in to Year 1, Year 2 and Year 3 – differing in the tests to be conducted because generally there is insufficient sample of the Candidate Variety in Year 1 for end product testing.

Preliminary Classification requires Year 1 data and Year 2 data (for all grades except APDR see Table 2.a below for APDR see Table 2.b) for the candidate variety and appropriate controls drawn from the Classification Zone within which a Final Classification will be sought.

Final Primary Classification requires Year 1 data, Year 2 data and Year 3 data (for all grades except APDR see Table 3.a below for APDR see Table 3.b) for the target variety and appropriate controls drawn from the Classification Zone within which a Final Classification will be sought.

Final Out of Region Classification requires Supplementary Data for the target variety and appropriate controls drawn from the Classification Zone within which a Final Out of Region Classification will be sought. The Supplementary Data that can be provided may be either:

- 'Year 3 data' (for all grades except APDR see Table 3.a below for APDR see Table 3.b) for the new zone (being a zone other than the Primary Classification Zone). This data is required if the Target Classification sought in the new zone is the same or lower than the grade received in the Primary Classification Zone. The data must demonstrate that the wheat quality is consistent with the required end-use performance in the Primary Classification Zone; or

- A minimum of 'Year 2 plus Year 3 Data' (for all grades except APDR see Tables 2.a and 3.a below for APDR see Tables 2.b and 3.b) for the new zone. This additional data is required if the Target Classification sought is higher than the Grade received in the Primary Classification Zone and/or the variety quality is not consistent with the quality of the Primary Classification Zone.

| Year 1.a Minimum Grain, Flour and Dough Testing Requirements | | | |
|---|---|---------------------|--|
| Physical Grain | Flour | Dough | End Product |
| Test Weight (kg/hl) | Flour Extraction (% by wt) | Farinograph | ASWN only - Udon noodle assessment <u>excluding</u> sensory evaluation by Japanese expert, conducted on 60% extraction flour |
| Thousand Kernel Weight (g) | Protein (14%mb) | Extensograph 45 min | |
| Grain Hardness (by PSI or SKCS) | Flour Purity (Colour grade and/or Oven Ash (14%mb) | | |
| Protein (11%mb) | Yellowness – Minolta b* - flour and/or paste | | |
| <i>Optional</i> – Oven Ash (11%mb) | Brightness – Minolta L* - flour and/or paste | | |
| Falling Number (sec) | Flour Pasting (RVA and/or Visco-Amylogram and/or flour swelling volume) | | |
| 2.00 mm Screenings (% by wt) | <i>Optional</i> - Diastatic Activity and/or Starch Damage | | |

Table 1.a: Year 1 testing requirements for all grades except APDR

| Year 1.b Minimum Grain, Semolina and Dough Testing Requirements APDR | |
|---|---|
| Physical Grain | Semolina |
| Test Weight (kg/hl) | Extraction– Un-Purified (% by wt) and Purified (% by wt) |
| Thousand Kernel Weight (g) | Protein (14%mb) |
| Grain Hardness (by PSI or SKCS) | Moisture content (%) |
| Protein (11%mb) | Semolina Purity – (Speck count and/or Oven Ash (14%mb) |
| Optional - Ash (11%mb) | Semolina Granularity – between 500 μ , - 200 μ |
| Moisture (%) | Semolina Yellowness – Minolta b* (sieved 160-200 micron) or measured with Minolta Chroma Meter equipped with granular material attachment and/or Butanol Pigment Extraction |
| Falling Number (sec) | Wet Gluten and Gluten Index |
| 2.00 mm Screenings (% by wt) | ConsitoGraph/Alveograph (preferred) or MixoGraph or Farinograph |
| Vitreous Grain (% by wt) | |

Table 1.b: Year 1 testing requirements for APDR

| Year 2.a Minimum Grain, Flour and Dough and End Product Testing Requirements | | | |
|---|---|--|--|
| Physical Grain | Flour | Dough | End Product |
| Test Weight (kg/hl) | Flour Extraction (% by wt) | Farinograph | Depends on Target Grade – see A2.1 below |
| Thousand Kernel Weight (g) | Protein (14%mb) | Extensograph 45 min and 135 min (optional) | |
| Grain Hardness (by PSI or SKCS) | Diastatic Activity and/or Starch Damage | | |
| Protein (11%mb) | Flour Purity (Colour grade and/or Oven Ash (14%mb) | | |
| Ash (11%mb) (where flour ash is also conducted). | Yellowness – Minolta b* - flour and/or paste | | |
| Falling Number (sec) | Brightness – Minolta L* - flour and/or paste | | |
| 2.00mm Screenings (% by wt) | Flour Pasting (RVA and/or Visco-Amylogram and/or Flour Swelling Volume) | | |
| LMA Laboratory Screening | | | |

Table 2.a: Year 2 testing requirements for all grades except APDR

| Year 2.b Minimum Grain, Semolina and Dough and Pasta Testing Requirements | | |
|--|---|----------------|
| Physical Grain | Semolina | Pasta |
| Test Weight (kg/hl) | Extraction– Un-Purified (% by wt) and Purified (% by wt) | See A2.1 below |
| Thousand Kernel Weight (g) | Protein (14%mb) | |
| Grain Hardness (by PSI or SKCS) | Moisture content (%) | |
| Protein (11%mb) | Semolina Purity – (Speck count and/or Oven Ash (14%mb) | |
| Optional - Ash (11%mb) | Semolina Granularity – between 500µ,- 200µ | |
| Moisture (%) | Semolina Yellowness – Minolta b* (sieved 160-200 micron) or measured with Minolta Chroma Meter equipped with granular material attachment and/or Butanol Pigment Extraction | |
| Falling Number (sec) | Wet Gluten and Gluten Index | |
| 2.00 mm Screenings (% by wt) | ConsitoGraph/Alveograph (preferred) or MixoGraph or Farinograph | |
| Vitreous Grain (% by wt) | | |

Table 2.b: Year 2 testing requirements for APDR

| Year 3.a Minimum Grain, Flour and Dough and End Product Testing Requirements | | | |
|---|---|-----------------------------------|--|
| Physical Grain | Flour | Dough | End Product |
| Test Weight (kg/hl) | Flour Extraction (% by wt) | Farinograph | Depends on Target Grade – see A2.1 below |
| Thousand Kernel Weight (g) | Protein (14%mb) | Extensograph – 45 min and 135 min | |
| Grain Hardness (by PSI or SKCS) | Diastatic Activity and/or Starch Damage | | |
| Protein (11%mb) | Flour Purity (Colour grade and/or Ash (14%mb)) | | |
| Oven Ash (11%mb) – where flour Ash is also analysed | Yellowness – Minolta b* - flour and/or paste | | |
| Falling Number (sec) | Brightness – Minolta L* - flour and/or paste | | |
| Screenings (% by wt) | Flour Pasting (RVA and/or Visco-Amylogram and/or Flour Swelling Volume) | | |
| LMA Laboratory Screening | | | |

Table 3.a Year 3 testing requirements for all grades except APDR

| Year 3.b Minimum Grain, Semolina and Dough and Pasta Testing Requirements | | |
|--|---|----------------|
| Physical Grain | Semolina | Pasta |
| Test Weight (kg/hl) | Extraction– Un-Purified (% by wt) and Purified (% by wt) | see A2.1 below |
| Thousand Kernel Weight (g) | Protein (14%mb) | |
| Grain Hardness (by PSI or SKCS) | Moisture content (%) | |
| Protein (11%mb) | Semolina Purity – (Speck count and/or Oven Ash (14%mb) | |
| Optional - Ash (11%mb) | Semolina Granularity – between 500 μ , - 200 μ | |
| Moisture (%) | Semolina Yellowness – Minolta b* (sieved 160-200 micron) or measured with Minolta Chroma Meter equipped with granular material attachment and/or Butanol Pigment Extraction | |
| Falling Number (sec) | Wet Gluten and Gluten Index | |
| 2.00 mm Screenings (% by wt) | ConsitoGraph/Alveograph (preferred) or MixoGraph or Farinograph | |
| Vitreous Grain (% by wt) | | |

Table 3.b: Year 3 testing requirements for APDR

END PRODUCT TESTING

The required end product testing can be conducted at any stage but is usually completed during years 2 and 3 of the Classification Process due to the larger sample size available.

A2.1 End Product Testing

The specific types of end products required depend on the Target Grade for Classification. The following Table (Table A2.1) lists the minimum required end product testing and any optional end product testing by Target Grade. If additional testing is desired this will be discussed with the Breeding Organisation at the time. An explanatory note dealing with the Udon Noodle Sensory Evaluation Program is provided in Attachment 7.

| Grade | Required End Products | Optional End Products |
|---------------------------|---|-----------------------|
| Australian Prime Hard | Yellow Alkaline Noodle, Straight Dough baking, Sponge and Dough baking, | |
| Australian Hard | Yellow Alkaline Noodle, Straight Dough baking, Sponge and Dough baking, | Rapid Dough baking |
| Australian Premium White | Yellow Alkaline Noodle, Straight Dough baking, Rapid Dough baking, | Flat Bread |
| Australian Standard White | Yellow Alkaline Noodle, Straight Dough baking, Rapid Dough baking, | Flat Bread |
| Australian SOFT | Cookie or Biscuit, Steamed Bun. | |
| Australian Noodle | Udon Noodle, including sensory analysis (to be completed on 60% extraction flour and be assessed by Japanese noodle expert) | |
| Australian Versatile Soft | Steamed Bread, Flat Bread, Cookie, White Salted Noodle. | |
| APWT | White Salted Noodle. | |
| Australian Premium Durum | Dry Long Italian Type Pasta (Spaghetti) | |

Table A2.1: Summary of required and optional end product testing by target grade.

A2.2 LMA EXPRESSION TESTING

Guidelines for the management of Late Maturity alpha Amylase (LMA) in classification have been developed and agreed by industry through the Industry LMA Steering Committee. It is noted that all discussion and agreement around these guidelines is based on current screening protocols and understanding of LMA expression and control of expression. These are subject to change and industry has agreed to identify areas for change and facilitate advance in all areas of LMA research. Thus, these Guidelines and agreements are expected to change as and when additional information and understanding becomes available.

[NB: The LMA Steering Committee has instigated a statistical analysis project to more objectively quantify the LMA testing requirements]

Based on current knowledge, the following represents a summary of the industry agreed Classification Guidelines for LMA:

Assessment of the expression of LMA can be conducted in two stages. In the first stage, two independent, laboratory assessments is the minimum data requirement to achieve a Final Classification. If expression is detected in the laboratory assessment, field assessment may be required and/or a milling grade Classification may not be possible. Details of the cut-offs for levels of expression based on laboratory screening and when field expression assessment is required are provided in Table A2.2.

Guidelines:

All Candidate Varieties are to be screened according to the University of Adelaide Protocol. A minimum of two assessments are required, representing two separate induction events, generating a 'First Screening Result' and a 'Second Screening Result' before a Final Classification is provided. In the absence of this screening varieties will receive no Final Classification or a FEED Classification will be given if a Final Classification is required. It is envisaged that a Final Classification may be required a) if a Breeding Organisation requests it or b) if growers are producing the variety and need to be able to deliver it for sale – although there may be other instances not addressed here.

- Only approved laboratories, following the University of Adelaide protocol and achieving equivalent results, will be able to provide data for the purposes of classification. Laboratory eligibility will be demonstrated through successful completion of the inter-lab test program conducted by the University of Adelaide .
- Seed provided to any Laboratory for LMA screening must be from an appropriate pure seed source.
- It is possible for a laboratory to test seed using both glasshouse and field induction protocols. In this case the two sets of results will be treated as independent outcomes, as they represent two distinct induction environments.
- The method for interpreting results of screening is captured in Table A2.2 (below).
- “A single high positive LMA lab screening result can be disregarded if it is followed by 2 (two) zero results achieved from –
 - 2 (two) different environments **and**
 - 2 (two) different seed parcels sent by the breeder to the Lab
 - Where the results of the line, results for the controls, and confirmation that the controls performed normally in the screening.” If LMA expression is subsequently observed in the field then the lines will still be subject to downgrading.
- Results of screening are to be provided by the Breeding Organisation with Applications for Final Classification. AWBI may contact the Laboratory generating the results directly to verify the results provided. Results for Candidate lines are to be submitted with results for laboratory controls and should include the date of the test and the name of the laboratory.

- Eligibility to a milling grade Classification (see Table A2.2) means that the variety can be considered for a milling grade Classification (ASW, APW, AH, APH, ASFT, ASWN).
- Where Classification Eligibility is 'Preliminary' it means that the variety cannot receive a Final milling grade Classification without Field Screening Data. According to the agreed protocol if the Field Screening Data shows that the variety expresses LMA in the field the variety will receive a Final Classification of FEED. If not, then the variety will be eligible for consideration for a milling grade Classification in the Zone from which the data has been generated.
- Where Field Screening data is required it is to be generated in accordance with the Steering Committee agreed protocol – the main features of which are described below and in section A2.2.1.
- For the purposes of Classification, field trial data can be used if 'within a Classification Zone the trials include 6 expression events of temperature sensitive controls over a minimum of three years'.
- The expression event will need to be confirmed first by low falling number (sub 300 sec – 350 sec for APH) and then by laboratory screening to eliminate sprouting and frost as sources of alpha amylase.
- If the field testing data set contains 1 (or more) confirmed LMA expression event for the target variety its' classification will be FEED in the Classification Zone.
- If there is no confirmed LMA expression for the target variety in the field testing data set then the variety will be eligible for a milling grade Classification in the Classification Zone in which the data set was generated. The default Classification in all other zones will be FEED until such time as field data has been generated to support a milling grade Classification.
- AWBI reserves the right to subsequently downgrade any variety that expresses LMA in the field. Responsibility for the release and progression of varieties with LMA potential remains with the Breeding Organisation. Breeding Organisations should satisfy themselves of the third party exposures associated with this. Provision of a milling grade classification by AWBI in no way implies that there is no risk or that AWBI accepts any risk associated with these varieties.
- Note that any variety without a Final Classification (for whatever reason) can only be delivered as FEED.
- Varieties currently in production will need to have their LMA status examined with a view to downgrading any varieties expressing LMA in the field. The exact procedure to do this remains to be determined. Previously it was agreed that growers and seed commercialisers will be given 2 harvests notice of the intention to downgrade.

| Result 1 | Result 2 | Classification Eligibility | Other Data required for Classification |
|-----------------|-----------------|-----------------------------------|---|
| 0 | 0 | Milling | |
| 0 | 12.5 | Milling | |
| 0 | 25 | Preliminary | Yes - Field Screening data |
| 0 | >25 | Preliminary | Yes - Field Screening data |
| 12.5 | 12.5 | Milling | |
| 12.5 | 25 | Preliminary | Yes - Field Screening data |
| 12.5 | >25 | Preliminary | Yes - Field Screening data |
| 25 | 25 | FEED | |
| 25 | >25 | FEED | |
| >25 | >25 | FEED | |

Table A2.2: Method for determining Classification outcomes of LMA screening based on the University of Adelaide protocol.

A2.2.1. Protocol for Detection of LMA Expression in the Field

Based on protocol supplied by Department of Agriculture Western Australia (DAWA)

This protocol and rules around field expression are subordinate to the rules around laboratory based LMA screening. That is, data relating to field expression of LMA is only required and will only be considered in the situations defined by results achieved through laboratory based LMA screening (see Table 1 above).

Factors to be taken into consideration by breeding organisations in applying the protocol are:

1. Appropriateness of controls –
 - range of expression and induction of expression
 - maturity of controls relative to the maturity of target variety/ies
2. Site selection
 - sites need to be across the target classification zone and in areas likely to induce expression in controls

It is suggested that field testing for LMA can be carried out in conjunction with replicated trials for other quality assessments ie receival standard quality, AWB classification quality assessments and pre-harvest sprouting assessments.

Controls

The Steering Committee recommends the incorporation of LMA control varieties (LMA prone and non-LMA prone) in field trials conducted for the above purposes.

Appropriate controls on a regional basis are –

LMA Prone Varieties:

QLD/NNSW/CNCSW – Kennedy & Suneca (2 controls)

NSW – Whistler or Currawong & Kennedy or BD159 (2 controls)

VIC/SA – Kennedy & BD159 (2 controls)

WA – Cranbrook, Westonia, Kennedy, BD159, RAC655, Nyabing & Spear

Non-LMA Prone Varieties:

Janz suggested across all regions

The basic principles for use of varieties as LMA controls are:

- expression of LMA in the field in response to temperature shock
- agronomic suitability
- similarity of maturity with target varieties.

Trials should be located in areas 'most likely' to generate expression of LMA in controls.

Evaluation

Falling number tests should be conducted on all control varieties.

Trials where any of the LMA controls have a falling number of less than 300 seconds should have falling number tests conducted on target varieties. (Noting that trials that have full quality assessments done on them to produce data for AWB Classification should also have falling number tests on all target varieties – low falling numbers can be picked up in this process).

All samples (controls and target varieties) with Falling Numbers less than 300 seconds should have LMA testing done to determine whether or not the amylase is due to weather damage (sprouting) or due to LMA expression. The protocol for this analysis can be obtained from the University of Adelaide.

To Interpret Data

It is important to distinguish between low falling number arising from pre-harvest sprouting and LMA and for this reason control varieties for both LMA and PHS should be included in the trials. If the falling number results of the controls do not clearly identify whether low falling numbers are due to PHS or LMA then it is useful to examine the distribution of alpha-amylase in the endosperm.

It is suggested (but not required) that collection of meteorological data (rainfall and temperature data) in the immediate vicinity of the trial also be undertaken as this can also assist to distinguish between PHS and LMA.

ATTACHMENT 3: LABORATORY PROFICIENCY CRITERIA

A] CRITERIA TO BE ACCEPTABLE FOR CLASSIFICATION

AWBI undertakes proficiency programs in order to maintain confidence in the quality of data presented for Classification purposes. The guidelines contained in this Attachment establish parameters for acceptable levels of accuracy and proficiency in the provision of such data.

For a laboratory to be able to provide data for Classification they must have participated in at least two rounds of proficiency testing and achieved acceptable results.

Laboratories and Industry Participants may at any time seek clarification from AWBI as to the criteria for determining acceptable levels of accuracy for laboratories and the application of AWBI's laboratory proficiency testing program.

B] CRITERIA OF DATA CONSISTENCY AND ACCURACY FOR LABORATORIES

For each individual Wheat test AWBI calculates the absolute average |Z-scores| to enable some measure of reproducibility. Absolute average |Z-scores| are also performed on individual samples and on combined milled and pre-milled samples, which enables AWBI to observe the effect of the milling process on results.

Each individual Z-score represents the decimal number of standard deviations by which an analytical result differs from the "true value" as represented by the median value. The definitions that are used are:

- Z-scores of less than |1.00| represent outstanding accuracy and precision.
- Z-scores of less than |2.00| are considered to represent satisfactory accuracy and precision
- Z-scores between |2.00| and |3.00| are considered to be questionable and suggest some attention to equipment and procedures may be required.
- Z-scores greater than |3.00| are considered to be unsatisfactory and require examination of equipment and procedures used.

If the absolute average |Z-score| for a collaborative sample is >3.00, this is indicative of an unacceptable level of variation in the test result.

If an absolute average |Z-score| for a sample is 2.00-3.00, then this test result must be considered questionable, and laboratories will be requested to provide an explanation, and to review its test methods. If 2 consecutive Z-scores for a specific test are in this 2.00 - 3.00 range, the variation exhibited by the laboratory is considered unacceptable.

Absolute average |Z-scores| for a sample of <2.00, but with individual outliers identified, would indicate there is confidence in the methods and the results; however the repeatability of the method will need to be monitored.

Where unacceptable results are observed then the laboratory is asked to provide a detailed explanation and undertake corrective action.

WHEAT RESULTS

All wheat quality tests (with the exception of PSI) must meet AWBI's Z-score criteria. Given the range of different methods employed for measuring hardness, PSI results will be ranked. If ranking is not consistent, then a review may be required.

MILLING RESULTS

Due to the variable nature of milling performance between laboratories, this quality parameter has been measured using a ranking system. The flour extraction rate has been observed in conjunction with some measure of bran contamination, such as a Kent Jones Colour grade or Flour Ash result, from this an overall ranking has been completed on each sample. If ranking is not consistent, then a review may be required.

FLOUR RESULTS

Results provided on pre-milled flour samples will be required to meet the AWBI Z-score criteria.

END PRODUCT

Values are ranked based on each individual laboratory's results against the other samples in the set and then compared with the results generated by the other participating laboratories.

Bread - Loaf Volumes and Total score results will be ranked against the other samples in the set. To enable us to complete this, we require the maximum figure ie. 100, 50 etc upon which each individual laboratory expresses its "total score".
Noodles - Due to insufficient participants completing the evaluation, results for 30min, 24hr and Colour stability (24-0 min) will be ranked for comparative purposes.

Statistical evaluation is undertaken by statisticians at the National Association of Testing Authorities (NATA), who apply "Z-scores" in order to identify significant outliers.

Each laboratory's results are kept confidential. Individual laboratories will receive their detailed results, with median, normal inter-quartile range, average, standard deviation and z-score. The "average Z-score" for all laboratories is also provided as a reference for all participants.

ATTACHMENT 4

Application for Classification - 2008

Please note:

- All classification submissions must be accompanied by an Application Form
- In situations where **multiple lines** are being submitted from **a classification region** a group Application is advised, listing details of all lines being submitted from the region on a **single** Application Form.
- Please fax completed and signed Application Form and email supporting data **at least 4 weeks** prior to the requested Panel sitting date.

| | | | | |
|---|--------------------------------|-----------------------------|--------------------------------|----------------------------|
| Breeding Organisation | | | | |
| Contact Name and Phone Number | | | | |
| Classification panel (✓) | Panel 1. March/April | Panel 2. May/June | Panel 3. July/August | Panel 4. October |
| | | | | |
| Classification region | | | | |
| Total number of lines submitted | | | | |
| Number of lines at classification stages | Preliminary | Final | Out of Region | |

Summary of Lines submitted for classification

| Line | Variety ID | Variety name (if applicable) | Classification stage (Prelim, Final, OOR) | Target grade | Additional comment (if required) |
|------|------------|------------------------------|---|--------------|----------------------------------|
| 1 | | | | | |
| 2 | | | | | |
| 3 | | | | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |
| 8 | | | | | |
| 9 | | | | | |
| 10 | | | | | |
| 11 | | | | | |
| 12 | | | | | |

Varietal development, qualities and commercialisation plans

[Provide a brief summary outlining the pedigree, agronomic qualities, disease resistance, potential zones of adaptation and commercialisation plans (including planned season of release) for each of the varieties.]

Line 1

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.....
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Line 2

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Line 3

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.....
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Line 4

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Line 5

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Line 6

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Line 7

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Line 8

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.....
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Supporting data for Classification

[Testing/data requirements are outlined in the Guidelines, Attachment 2]

Complete details of test results supplied and indicate with an X those applicable to the line submitted

| No. | Line | Year: | | | | | |
|-----|------|--|--|--|--|--|--|
| | | Laboratory: | | | | | |
| | | Site: | | | | | |
| | | Test results (Wheat, dough rheology, end product) | | | | | |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| 8 | | | | | | | |
| 9 | | | | | | | |
| 10 | | | | | | | |
| 11 | | | | | | | |
| 12 | | | | | | | |

LMA data

[LMA testing requirements are outlined in the Guidelines, Section A2.2]

| No. | Line | Result 1 [Year/ Season] | Result 1 [% LMA] | Result 2 [Year/ Season] | Result 2 [% LMA] | Comment (where applicable) |
|-----|------|-------------------------------|---------------------|-------------------------------|---------------------|-------------------------------|
| 1 | | | | | | |
| 2 | | | | | | |
| 3 | | | | | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |
| 8 | | | | | | |
| 9 | | | | | | |
| 10 | | | | | | |
| 11 | | | | | | |
| 12 | | | | | | |

Use of information by Flour Millers' Council of Australia

I give permission for all information attached to this application (including quality data) for Classification to be provided to the Flour Millers' Council of Australia to aid them and their associates in understanding the quality of new material and aid in their process of establishing variety preferences. **YES / NO**

Signed declaration

1. I am familiar with the **Australian Crop Accreditation System** guidelines;
2. I have had care and control of the collection and preparation or have put in place appropriate processes to ensure the care and control of the samples submitted by **[Organisation name]** as part of the **[Name of program]** and the collation of all of the accompanying data, and I am authorised to make this declaration on behalf of [Organisation name];
3. All of the samples referred to in 1 above were drawn from trials established according to the Australian Crop Accreditation System guidelines and, where required, have been composited according to those guidelines and are representative of the line to be classified; and
4. All data and information provided by **[Organisation name]** as part of the [Name of program] is true and correct.
5. All available and relevant quality data and information, in accordance with the guidelines and data/information requirements has been submitted. Where data have not been provided, the nature of the data and the reason for its omission has been provided.
6. I understand that a person who intentionally makes a false statement in a statutory declaration is guilty of an offence under section 11 of the Statutory Declarations Act 1959, and I believe that the statements in this declaration are true in every respect.

Signed:

Date:

Witness:

Date:

ATTACHMENT 5: CONTROL VARIETIES

The following table contains a list of appropriate control varieties suitable for Classification purposes. This list was developed by the AWBI Classification Panel and the domestic milling industry in an attempt to minimise the number of control varieties that are required for quality comparisons.

This list will be continually updated as more appropriate and relevant controls are established. Please contact AWBI Wheat Product Development on wpd@awb.com.au for information on the suitability of other varieties as quality controls.

| Grade | Planting | QLD | NNSW | SNSW | VIC | S A | W A |
|---------------------------|----------|-----------------------------|--------------------------|--------------------------|------------------------|------------------|--------------------------------|
| Australian Prime Hard | Main | EGA Hume Kennedy Lang | Kennedy Lang | Lang Chara | | | |
| | Early | Sunco Sunvale | Sunbri Sunvale | Sunbri Sunvale | | | |
| Australian Hard | Main | Janz Cunningham* | Janz Cunningham* | Drysdale Janz | Janz Yitpi Chara | Yitpi Janz | Cascades EGA Bonnie Rock |
| | Early | | | Wylah | Bolac | | |
| Australian Premium White | Main | | | | Frame | Frame Pugsley | Westonia Wyalkatchem |
| | Early | Strzelecki | Strzelecki | | Kellalac | | Camm |
| Australian Standard White | Main | | | | | | |
| | Early | | | | | | |
| Australian Soft | Main | QALBis | QALBis | Snipe | Bowie | Bowie | Datatine |
| | Early | | | | | | EGA Jitarning |
| Australian Noodle | Main | | | | | | Arrino Kulin** |
| | Early | | Sunsoft 98 | Rosella Sunsoft 98 | Rosella | | Calingiri Cadoux |
| Australian Durum | Main | | EGA Bellaroi Wollaroi | EGA Bellaroi Wollaroi | | Kalka Tamaroi | Kalka Wollaroi |
| Australian Versatile Soft | | | | | | | Calingiri EGA Jitarning |

main season = early maturity

early season = late maturity

* Useful control for YAN assessment only.

** Useful control for Udon sensory evaluation only.

For each quality control, AWBI has defined each of the main quality parameters, using a standardised set of definitions, and based on the understanding of long term variety quality. Table 5.1 (below) defines the words used to describe the quality parameters for each control.

| Word | Definition |
|-------------|---|
| Excellent | Better than awarded grade |
| Good | Acceptable at top end of awarded grade |
| Acceptable | Acceptable for awarded grade |
| Marginal | Acceptable but at bottom end for awarded target grade |
| Poor | Below awarded grade |
| Very Poor | Well below awarded grade |

Table 5.1

For each classification region, each quality parameter for each control has been defined in the following tables.

SUBJECT TO REVIEW - DETAILS TO BE PROVIDED TO THE SUCCESSFUL TENDERER

ATTACHMENT 6: SAMPLE REQUIREMENTS

Samples submitted for Classification must be selected and prepared in accordance with the following guidelines. These guidelines are based on the ACAS wheat protocols (specifically parts 2.1 and 2.2.2.2) and have been supplemented by the AWB Receival Standards where appropriate.

Sample Collection:

- Samples must be collected from trials used for the collection of yield and other agronomic data.
- Trials from which samples are drawn should be representative of the target area as proposed by the Breeding Organisation.
- Approximately 4-5kg of sample is required to undertake the appropriate testing.
- Trials must include control varieties which are appropriate for the purposes of comparison - please refer to Attachment 5 – Control Varieties
- Grain samples should be thoroughly cleaned through a Carter Dockage tester or equivalent using a 2mm sieve to retain the main grain fraction.
- As a guide, grain samples of cleaned samples should meet grain quality specifications Table 1 (below) and Industry receival standards summarised in Table 6.1 (below):

| Test | Limit |
|---|---|
| Test weight | >= 78kg/hl min |
| Falling Number | >= 300 seconds (>350 seconds for APH) min |
| Moisture | =<12% max |
| Kernel Weight | >=30g/1000 kernels min |
| Screenings (2.00 mm) | =< 5% max |
| Protein must meet the target grade as outlined below: | |
| APH | 13% - 15 % |
| AH | 11.5% - 13.5% |
| APW | 10% - 12% |
| ASFT | 7.5% - 9.5% |
| ASWN | 9.5% - 11.5% |
| ASW | N/A |
| APDR | 13% - 15% |

Table 6.1

- Trial sites exposed to environmental or disease situations that would adversely affect the validity of end product quality test results should be excluded.
- Samples should be stored under conditions that maintain the integrity of the quality of the sample (examples are given)

Analysis may be conducted on:

Site Composite:

Where possible, a site composite should be prepared from equal quantities of each replicate at a site. All replicates should be included. Replicates should not vary greatly in grain quality parameters. As a guide:

Protein content should not vary by more than 3%

Moisture should not vary by more than 3%

Kernel Wt should not vary by more than 5g/1000krn

Falling Number should be >300 seconds (>350 seconds for APH)

Test wt should be >78kg/hl.

Please Note: all details of the composition of composites as well as the data on which compositing is based must be submitted with the results.

Multi site Composite:

A multi-site composite is a composite prepared from site composites to achieve a sample of a test variety within an appropriate protein range. Control varieties and test varieties are to be blended in the same proportions from the same sites. Site composites used to produce a multi-site composite should be from sites that are geographically close to each other and should not vary greatly in grain quality parameters. As a guide:

- Protein should not vary more than 2%
- Moisture content should not vary by more than 3%
- Kernel weight should not vary by more than 5g/1000
- Test weights should be >78kg/hl
- Falling Numbers should be >300 seconds (>350 for APH)
- Screenings of any sample should be <5%

Please Note: all details of the composition of composites as well as the data on which compositing is based must be submitted with the results.

| QUALITY PARAMETER | APH | AH | APW | ASWN | APWT | ASF1 | APDR |
|---|-----|-----|-----|------|------|------|------|
| Defective Grains Max (% by count, 300 grain sample; unless otherwise stated) | | | | | | | |
| Sprouted Grains max (% by count)* | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| - Falling Number min (sec) | 350 | 300 | 300 | 300 | 300 | 250 | 300 |
| Stained Grains max (% by count) Of which; | 5 | 5 | 5 | 5 | 5 | 5 | 5 |
| - Pink Grains max (% by count) | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Dry Green, Sappy or Frost Distorted Grains max (% by count) | 1 | 1 | 1 | 1 | 1 | 1 | 2 |
| Heat Damaged, Bin Burnt or Storage Mould Affected Grains max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Field Fungi Affected Grains max (count per half litre) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Rotted Grains max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Grain Infected with Ball Smut max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Insect Damaged Grains max (% by count) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Staining Due to Moist Plant Material max (% by count) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Head Scab Affected Grains max (% by count) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Takeall Affected Grains max (% by count) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| White Grain Disorder max (% by count) | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Vitreous Kernels min (% by count) | N/A | N/A | N/A | N/A | N/A | N/A | N/A |

| Contaminants Max (per half litre; unless otherwise stated) | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|-----|
| Picking Compound max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Chemicals Not Approved for Grain max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Seed Contaminants Type 1 max (individual seeds per half litre) | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Seed Contaminants Type 2 max (seeds in total per half litre) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Seed Contaminants Type 3a max (seeds in total per half litre) | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Seed Contaminants Type 3b max (seeds in total per half litre) | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| Seed Contaminants Type 3c max (seeds in total per half litre) | 8 | 8 | 8 | 8 | 8 | 8 | 8 |
| Seed Contaminants Type 4 max (seeds in total per half litre) | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Seed Contaminants Type 5 max (seeds in total per half litre) | 40 | 40 | 40 | 40 | 40 | 40 | 40 |
| Seed Contaminants Type 6 max (seeds in total per half litre) | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Seed Contaminants Type 7a max (seeds in total per half litre) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Seed Contaminants Type 7b max (seeds in total per half litre) | 50 | 50 | 50 | 50 | 50 | 50 | 50 |
| Ergot Ryegrass max (length in cm per half litre) | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| Ergot Wheat max (count per half litre) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Tainting Agents max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Objectionable Material max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Other Non-Objectionable Material max (% by weight) | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 | 0.1 |
| Sand max (count per half litre) | 20 | 20 | 20 | 20 | 20 | 20 | 20 |
| Earth - 5mm max diameter (count per half litre) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Stored Grain Insects & Pea Weevils Live max (entire load) | Nil | Nil | Nil | Nil | Nil | Nil | Nil |
| Stored Grain Insects Dead max (count per half litre) | 5 | 5 | 5 | 5 | 5 | 5 | 5 |

| | | | | | | | |
|---|-----|-----|-----|-----|-----|-----|----|
| Pea Weevils Dead max (count per half litre) | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Earcockle max (count per half litre) | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Field Insects Sitona Weevils max (count per half litre) | 10 | 10 | 10 | 10 | 10 | 10 | 10 |
| Field Insects All others max (count per half litre) | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Snails max Live or Dead (count per half litre) | 1 | 1 | 1 | 1 | 1 | 1 | 1 |
| Loose Smut max (count per half litre) | 3 | 3 | 3 | 3 | 3 | 3 | 3 |
| Bread Wheat max (% by count) | N/A | N/A | N/A | N/A | N/A | N/A | 3 |

TABLE 2: SUMMARY OF RELEVANT WHEAT RECEIVAL STANDARDS

ATTACHMENT 7: ASWN Udon Noodle Sensory Evaluation Program Explanatory Note

Background:

The Japanese market is a particularly discerning and quality conscious market and therefore the classification of varieties into ASWN requires all advanced breeding material targeted at an ASWN classification to be evaluated by a visiting Japanese noodle expert (representative of the Japanese Flour Millers Association) prior to obtaining a final classification.

End product quality is vital for an ASWN classification, and there is lack of experienced sensory panel personnel within Australia. With multiple breeding programs targeting wheat varieties into ASWN, a structured process is required for the breeding industry which will utilise current resources and to provide the relevant information for classification, and also, to the Japanese market.

To ensure that a structured process continues, a number of additions are required to the AWBI Classification Guidelines.

Classification requirements for ASWN:

Classification requirements for ASWN are the same as for any other wheat grade in that they require 3 years' (seasons) data on physical grain quality, milling performance and flour and dough property assessment, plus 2 years' (seasons) worth of end product quality. For the 2 years end product assessment, the Udon Noodle sensory analysis is required to be completed with the assistance of a visiting expert representing the JFMA.

Prior to submitting varieties to the visiting expert for assessment, preliminary end product evaluation is to be completed, and the results reviewed, to ensure that the samples being presented are of a sufficient quality standard for progression. To achieve this, end product testing has become a mandatory requirement to Year 1 of classification testing for ASWN would become and the data would then be presented to the "Classification Management Resource" for assessment. If the new lines are suitable for progression then provision would be made for evaluation in the following season by a Japanese expert.

To complete sensory evaluation in Years 2 and 3, a "lower" control for texture needs to be included in the assessment. Kulin is recognised at the most suitable control for this parameter and has been added to the list of control varieties.

Attachment 2 – Testing Guidelines

- *Table 1A will include end product requirement for ASWN classification.*

Attachment 5 – Control Varieties

- *Kulin added to list of Noodle control varieties noting that it is appropriate for Udon sensory evaluation only.*

Brief Noodle Expert Program Summary:

- Historically managed by AWB International in collaboration with Department of Food, WA (DAFWA) and the Japanese Flour Millers Association (JFMA). In the future to be managed by the Classification Management Resource referred to in the GRDC Model for classification - still in collaboration with JFMA and DAFWA.

- Noodle expert from with Nippon Flour Mills and/or Nisshin Flour Mills as nominated by the JFMA, comes to Australia each year (subject to breeding program requirements) to participate in the DAFWA Udon Noodle sensory evaluation of advanced wheat lines.
- The program provides two years' worth of sensory end product data for classification, valuable feedback from Japanese market and flow of information back to the market.
- Only advanced material that has already been assessed by the classification panel as likely to be suitable for ASWN classification will be evaluated by the Noodle Expert (see classification requirements above).
- The classification management resource would liaise with breeding organisations and DAFWA to determine the annual requirement for the noodle expert.
- Where a line receives a final classification of ASWN, a technical dossier is to be compiled by the Classification Management Resource and the breeding programs, for presentation to the JFMA and distribution amongst it's members. Information would include –
 - History of ASWN varieties
 - Broad agronomic outline of the new line released
 - Summary of quality results against current ASWN varieties including:
 - Physical grain quality
 - Milling quality
 - Flour colour
 - Flour Paste Viscosity
 - Udon colour and sensory analysis

A guide as to the possible timeframes and the responsibilities of the various organisations for the release of ASWN varieties is outlined below:

| | Breeding Organisation | Classification Panel | GRDC – Classification Management Resource |
|---------------|---|---|--|
| Year 1 | | | |
| Jan - Sept | Complete Year 1 Testing - Noodle assessment and quality data | | |
| March - Sept | | Assessment of Potential for ASWN - Feedback to the breeding programs. | |
| October | Advise GRDC CMR of potential lines entering Year 2 of classification | | Liaise with all breeding programs to determine suitability for expert in following season. |
| Year 2 | | | |
| March | Breeding programs determine if potential lines are to be progressed – Advise GRDC CMR | | |
| April | | | Determine the need for an “expert” program and make provision if required |
| July - August | Year 2 Testing - Noodle assessment and quality data - including Japanese Expert | | |
| October | | Provide Preliminary Classification | |

| | | | |
|---------------------------|---|------------------------------|--|
| October | Advise GRDC CMR of potential lines entering Year 3 of classification | | Liaise with all breeding programs to determine requirement for expert in following season. |
| Year 3 | | | |
| March | Breeding programs determine if potential lines are to be progressed – Advise GRDC CMR | | |
| April | | | Determine the need for an “expert” program and make provision if required |
| July - August | Year 3 Classification Testing - Noodle assessment and quality data - including Japanese Expert | | |
| October | | Finalise ASWN classification | |
| | | | |
| Post Final Classification | Confirm which lines are to be released and timeframes for release. Collection of samples for “in market” evaluation if required | | |
| Prior to Variety Release | | | If required in market familiarisation of lines to be released. |
| | Variety Release | | |