

Section 7

Oats

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7.1 Oat Classification Procedure

The following classification procedure is to be used for the receipt of all Oat grades.

FOA3 cannot be received without approval from Quality and Technical Services Department.

1. Sample the load presented for delivery according to the Receipt Sampling procedure detailed elsewhere in the CCM. Observe the load for the presence of **Nil Tolerance Contaminants**.
2. Form a representative **Grower Load Composite (GLC)** sample and ensure it is thoroughly mixed.
3. From the GLC sample draw a subsample to be tested for **Moisture** content. Oat moisture is determined using the Kett moisture meter according to the instructions elsewhere in the CCM.
If the moisture result meets specification continue with classification. If not refer to the moisture definition.
4. Fill the ½ litre measure using the barley-pouring device as documented elsewhere in the CCM.
5. Determine the **Test Weight** of the sample using the ½ litre measure and balance method documented elsewhere in the CCM.
6. Check the sample for any signs of **Objectionable Contaminants** subject to NIL tolerance.
7. The **Screenings** assessment is based on the 2.0mm Agtator screen. Pour the ½ litre sample onto the Agtator screen and shake 40 times.
8. For PRIME MILLING OATS ONLY, separate the chaff and straw remaining above the screen and weigh this. This is the **% Unmillable Above**.
9. Inspect the screenings sample for presence of **Field Insects** or **Dead Grain Insects**.
10. Inspect the screen and the bottom tray for **Weed Seeds**. For a complete list of Weed Seeds see Section 4 in the CCM.
11. Place the contents that passed through the screen back into the ½ litre measure that is on the scales. This is the **% Unmillable Below** the screen (also known as **Screenings**).
12. From the thoroughly mixed ½ litre sample, count 200 Oats. Inspect this grain for **Defective Grains**:
 - **Damaged Grains (Groats)**
 - **Weather-stained grains**
 - **Weather-stained kernels**
 - **Field Fungi**
 - **Dry Green / Sappy**
 - **Frost Damage**
 - **Insect Damage**
 - **Sprouted grain**
 - **Heat Damages / Bin Burnt / Storage Mould and Musty or Mouldy**
13. Check the ½ litre for any other **Contaminants**
 - **Smuts / Ergots**
 - **Rye Grass Ergots**
 - **Snails**
 - **Live / Dead Stored Grain Insects**
 - **Field Insects, including Sitona Weevils**
 - **Sand and Earth**

14. Ask the grower for the **Variety** of Oats to fill in the transaction. There are restrictions for the varieties that can go into both Feed and Milling Oats. The following varietal codes are to be used on the weight ticket when receiving Oats for weight tickets.

MILLING VARIETIES

VARIETY	CODE	VARIETY	CODE
Dalyup	DALY	Murray	MURR
Echidna	ECHD	Pallinup	PALL
Euro +	EURO	Swan	SWAN
Mortlock	MORT	West	WEST

+ Denotes Prime Milling Variety

FEED OATS OR DOWNGRADED MILLING TO FEED

VARIETY	CODE	VARIETY	CODE	VARIETY	CODE
Algeria	ALGR	Eurabbie	EURA	Mortlock	MORT
Avon	AVON	Euro	EURO	Murray	MURR
Bandicoot	BAND	ESK	ESK	Numbat	NUMB
Betong	BETT	Glider	GLID	Golden Orient	ORNT
Bulban	BULB	Hotham	HOTH	Pallinup	PALL
Cassia	CASS	Irwin	IRWN	Possum	POSS
Coolabah	COOL	Kalgan	KALG	Potoroo	POTR
Cooba	COOB	Kent	KENT	Quoll	QUOL
Coomaloo	COOM	Kherson	KHER	Swan	SWAN
Dalyup	DALY	Marloo	MARL	Wallaroo	WALL
Dolphin	DOLP	Mixed / Not Named	NTOA	West	WEST
Echidna	ECHD	Moore	MOOR	Wintaroo	WINT

15. Take an appropriate amount of sample from the GLC sample to add to the **Cell / Partition Quality Samples** and collect any other samples requested by ABB Grain Ltd or other clients.
16. Take an appropriate amount of sample from the GLC sample to add to the **500MT Running Bulk Sample (VIC)** required for each oat grade.
17. At Manual Load Entry (MLE) sites record the results of the quality tests along with the pay and bin grade in the quality section of the Transaction according to the instructions in the Commodity Document Manual. Ensure that the quality test data entered is compatible with the classification; otherwise the transaction will be held in error when it is entered at the Business Centre, delaying payment to the grower until the information is corrected.
18. At Operational Management System (OMS) sites enter the test results and the variety code onto the computer according to the instructions in the OMS User Guide. The computer can derive a list of the acceptable provisional pay and bin grades in order of rank. However it is important to remember that this is only an aid for the classifier and does not absolve the classifier from the responsibility of classifying the load.

All tests performed and the results shall be included on the transaction. In order to perform this quickly and efficiently, the codes listed below shall be used. These codes are also listed on the Oat Classification Chart.

7.1.1 Test Codes

TEST	CODE	TEST	CODE
Commodity - oats	OA	Shot grain	SH
Moisture	MO*	Snails - conical	SNC
Test weight	TW*	Snails - round	SNR
Screenings	SC*	Sprouted grain	SP
Black or wild oats	BW	Three corner jacks	TJ
Dead grain insects	DI	Varietal admixtures	VA
Foreign grain	FG	Weather stained grains	WS
Field insects	FI	Weather stained kernels	WK
Green oats	GO		

*Refers to a test automatically on the weight ticket.

7.2 Oat Receival Standards

7.2.1 Physical Characteristics

7.2.1.1 Moisture Content

Moisture is the amount of water measured in a sample of Oats.

The accepted method of measuring moisture is using the Kett Moisture meter.

- If the moisture content exceeds 13.0% then the load must be rejected and issued a Temporary Decline Notice.
- If the moisture exceeds 12.5% but not 13.0% then retest 2 further samples and average the three results using the Kett's averaging function.
- Should one of the repeats exceed 13.0%, the load must immediately be issued with a Temporary Decline Notice.
- Should the average moisture content be above 12.5% the load must be rejected and issued a Temporary Decline Notice.

If the average moisture content is below 12.5% the classification can continue.

Moisture is measured as % by weight.

7.2.1.2 Test Weight

Test Weight is the weight of oats in a given volume. It is often interchanged with the term Density.

Test Weight is measured in kilograms per hectolitre.

7.2.1.3 Unmillable Material

A 2.00 mm certified Wheat screen is to be used for the assessment of Unmillable material.

7.2.1.3.1 Unmillable Material Above the Screen

This includes all unmillable material as well as chaff and stalk remaining above the screen.

Unmillable material above the screen is measured as % by weight.

7.2.1.3.2 Unmillable Material Below the Screen – Screenings

Is the **total** material passing through the screen, includes unmillable material, small foreign seeds and distorted and pinched grains.

Unmillable material below the screen is measured as % by weight.

7.2.1.4 Total Foreign Material

All material that is not whole or cracked oat grains is regarded as Foreign Material. This includes weed seeds, foreign grain, chaff, snails, stones etc. from the sample.

Total foreign material below the screen is measured as % by weight.

7.2.1.5 Eligible Varieties

There are various levels of tolerance for Other Oat Varieties in different Oat Grades.

E.G. For Prime Milling Oats the only allowable variety is Euro. There is a NIL tolerance for other varieties.

Refer to the Oat Receival Standards Reference Charts for acceptable varieties and tolerances for other oat varieties into Prime Milling Oat, Milling Oat and Feed Oat grades.

Varietal Purity is measured as % by count.

7.2.1.6 Defective Grains

Defective Grains are assessed by examining a 200 grain sample with results expressed as a % by count.

7.2.1.6.1 Damaged Grains

All grains that have a physical damage to the groat such as broken grain or insect bored grain.

7.2.1.6.2 Weather Stained Grains

All grains exhibiting staining such as dark tipping / poor colour etc. caused by damp weather prior to Harvest, above and beyond the normal colour of the variety.

7.2.1.6.3 Weather Stained Kernels

All grains where the groat has been stained by the weather. Usually checked where weather stained grains are present in the sample. Where this may have occurred, the husk must be removed and the groat examined.

7.2.1.6.4 Field Fungi

Grains exhibiting dark spots on the grain due to damp weather before Harvest.

7.2.1.6.5 Dry Green / Sappy Oats

Green Oats are those that have been harvested at an immature stage of development.

7.2.1.6.6 Frost Damaged

Grains affected by frost during the maturation phase.

7.2.1.6.7 Insect Damaged

Grains eaten in part by stored grain insects and any field pest.

7.2.1.6.8 Shot & Sprouted

Sprouted Grains are those with visible root growth or the presence of a "chit" poking out of the germ end of the grain.

7.2.1.6.9 Heat Damaged, Bin Burnt, or Storage Mould Affected Grains

Heat Damaged or Bin Burnt grains refer to kernels that have become discoloured due to exposure to severe heat during storage or an incorrect artificial drying technique. Affected grains appear reddish-brown or in severe cases blackened.

Storage Mould affected grains refer to kernels that have been affected by the development of fungi or bacteria due to an increase in grain moisture levels during storage. Affected grains appear discoloured and visibly affected by mould. Grains that are soft and emit an odour are to be classified as Rotted.

Heat Damaged, Bin Burnt and Storage Mould affected grains have been categorised together as the differences between them can be difficult to distinguish.

7.2.1.7 Weed Seeds

Tolerances for Seed Contaminants apply to whole seeds or their equivalent in pieces per ½ litre (above or below the screen). Any seed pods detected must be opened and the seed counted for inclusion in the tolerances specified. The tolerances listed are maximums and refer to the total of all seeds named in each type EXCEPT for Type 1 in which the maximum applies on an individual seed basis.

The **Weed Seeds** for each category are listed below. **Refer to the Oat Receival Standards Reference Chart for any Weed Seed Tolerance Variations for each Oat Grade.**

***NOTE EXCEPTIONS** apply to some weed seeds for different Oat Grades. Refer to the Oat Receival Standards Reference Charts of the current season for details of tolerances allowed for weed seeds.

TYPE 1 (Maximum <u>Individual</u> Seeds per 1/2 litre)
Colocynth, Three Corner Jacks / Spiny Emex / Double Gee, Jute, Long Head Poppy, Mexican Poppy, Field Poppy, Horned Poppy, Wild Poppy, New Zealand Spinach, Parthenium Weed (QLD Only)
TYPE 2 (Maximum Total Seeds per ½ Litre)
Castor Oil Plant (<i>Ricinus communus</i>), Coriander, Crow or Wild Garlic, Darling Pea, Opium Poppy, Ragweed, Rattlepods, Common Broomrape, Starburr, St. John's Wort
TYPE 3a (Maximum Total Seeds per ½ Litre)
Bathurst & Noogoora Burr, Bulls Head or Caltrop or Cats Head, Cape Tulip, Cottonseed, Dodder, Thornapple - (<i>Datura</i> spp or False Castor Oil), Bellvine
TYPE 3b (Maximum Total Seeds per ½ Litre)
Vetch (Tare) Vetch (Commercial)
TYPE 3c (Maximum Total Seeds per ½ Litre)
Heliotrope (Blue) Heliotrope (Common)
TYPE 4 (Maximum Total Seeds per ½ Litre)
Field Bindweed, Cutleaf Mignonette, Darnel, Hexham Scent* or King Island Melilot, Hoary Cress, Mintweed, Nightshades, Paddy Melon, Skeleton Weed, Variegated Thistle *Hexham scent is only acceptable if no tainting odour is present
TYPE 5 (Maximum Total Seeds per ½ Litre)
Creeping Knapweed or Russian Knapweed, Salvation Jane or Paterson's Curse, Sesbania Pea
TYPE 6 (Maximum Total Seeds per ½ Litre)
Saffron Thistle
Chickpeas, Corn (Maize), Cowpea, Faba Beans, Lentils, Lupins, Field Peas, Safflower, Soybean, Sunflower
TYPE 8 (Maximum Total Seeds per ½ Litre)
Barley, Bindweed (Black & Australian), Wheat, Durum Wheat, Sand Oats, Common Oats, Rice, Cereal Rye, Triticale, Turnip Weed, Forage Sorghum and other weed seeds not specified in Types 1-8 or Small foreign seeds
SMALL FOREIGN SEEDS (Maximum Total Seeds per ½ Litre <u>by Weight</u>)
Seeds not specified in types 1 - 8 below the 2.0 mm Agtator screen

7.2.2 Contaminants

Measured as a maximum count per ½ litre.

7.2.2.1 Smut

There is a **NIL** tolerance for smuts. This includes all types of Smut – ball, covered and loose.

Loose Smut is the result of the fungus *Ustilago tritici* developing in heads during the growing phase.

Grains infected with Ball Smut (commonly known as Stinking Smut or Bunt) are those that have become invaded by spores of the fungus, *Tilletia caries*. They have the appearance of pale, plump, slightly oversized grains. These grains are easily crushed between the fingers and contain a mass of black powder (spores) with a distinctive rotten egg smell.

7.2.2.2 Ergot

Ergots are purplish black fungal bodies that contaminate cereal and ryegrass kernels when they are infected by the fungus *Claviceps purpurea*

Cereal Ergot

- There is a **NIL** tolerance for Cereal Ergot.

Ryegrass Ergot

- The tolerance applies to the maximum length (in centimetres) of ergot pieces in a ½ litre sample.

7.2.2.3 Grain Insects

THERE IS A NIL TOLERANCE FOR ALL LIVE GRAIN INSECTS IN ALL GRADES.

Grain insects are those, which attack or inhabit stored grain. A listing of the common grain insect species is given below.

For a guide to Insect identification consult the “Insects of Stored Grain” pocket book or wall chart available in all sampling offices. If you are unsure of the identification of any insect detected in the sample then the load should be declined until it can be identified. Contact your Area or Head Office for assistance.

COMMON NAME	SCIENTIFIC NAME
Angoumois grain moth	<i>Sitotroga cerealella</i>
Confused flour beetle	<i>Tribolium confusum</i>
Flat grain beetle	<i>Cryptolestes spp</i>
Fungus beetle	<i>Corticaria punctulata</i>
Granary weevil	<i>Sitophilus granarius</i>
Hairy fungus beetle	<i>Typhaea stercorea</i>
Indian meal moth	<i>Plodia interpunctella</i>
Lesser grain borer	<i>Rhyzopertha dominica</i>
Maize weevil	<i>Sitophilus zeamais</i>
Mites	<i>Acarina</i>
Psocids / book lice	<i>Psocoptera</i>
Rice weevil	<i>Sitophilus oryzae</i>

Rust-red flour beetle	<i>Tribolium castaneum</i>
Saw toothed grain beetle	<i>Oryzaephilus surinamensis</i>
Tropical warehouse moth	<i>Ephestia cautella</i>

7.2.2.4 Pea Weevil

When peas are detected in a load after sampling, it will be necessary to confirm that they are free of live pea weevil and / or larvae; this means that the peas will need to be broken open. If peas are not found in the probed sample but are obvious on the surface of the load, several peas are to be collected at random in a safe manner and checked for infestation.

This is to be carried out using the "pea crusher" supplied. Up to 10 peas are placed into the cylinder and the piston rammed home to break open the peas. The peas are then inspected for pea weevil infestation. As pea weevil will most likely be in the larval stage, care should be exercised when breaking open the peas as the grub can easily be lost in the debris.

There is a NIL tolerance for Pea Weevil.

7.2.2.5 Field Insects

Field Insects include Grasshoppers, Woodbugs, Ladybirds and any other field insects that are not damaging to stored grain. Common ones are listed in the table below.

COMMON NAME	SCIENTIFIC NAME
Grasshopper	<i>Various</i>
Hairy fungus beetle	<i>Typhaea stercorea</i>
Ladybirds	<i>Various</i>
Minute mould beetles	<i>Corticaria species</i>
Pea Weevil*	<i>Bruchus pisorum</i>
Sitona Weevil*	<i>Sitona species</i>
Desiantha Weevil	<i>Desiantha diversipes</i>
Woodbugs	<i>Various</i>
All other field insects	

* Individual tolerances apply

Tolerances are for dead or live insects and refer to whole bodies or body portions for all field insects except Grasshoppers. For Grasshoppers, 6 legs, 3 body parts or 2 wings, constitute 1 insect. The tolerance is for dead or alive Grasshoppers and refers to whole bodies.

Field Insects are measured as a count per ½ litre.

7.2.2.6 Snails

Snails refer to whole bodies or substantially whole (more than half) Snail shells irrespective of size. Examples include the White Snail (*Cernvella virgata*), White Italian Snail (*Theba pisana*), Pointed Snail (*Cochlicella acuta*), Small Pointed Snail (*Cochlicella barara*) and Cernuella neglecta.

Snails are measured as count per ½ litre.

7.2.2.7 Earth and Sand

This category of contaminant refers to the admixture by any soil type, with the tolerance being for grains of sand or pea size pieces of earth.

Earth and sand are measured by grains per ½ litre.

7.2.2.8 Objectionable Matter

There is a NIL tolerance for Sticks, Stones, glass, concrete or any other commercially unacceptable contaminant, smell or taste.

7.2.2.9 Pickling Compounds / Red Dyed Grains / Coloured Grains

There is a NIL tolerance for Pickling compounds including Fenaminosulf, triadimenol, carboxin, flutriafol, bitertanol and any other fungicide added to the grain as a seed dressing. Also included are any marker dyes commonly used during crop spraying operations, which have stained the grain.

There is a **NIL** tolerance for Fusarium (pink) fungal stained grains.

7.2.2.10 Odours / Sour and Musty / Tainting Agents

There is a NIL tolerance for grain that has any commercially objectionable foreign odour due to tainting agents or improper storage causing mould, souring or musty odours.

This includes any contaminant that imparts an objectionable taint or smell to the load such as eucalyptus, Wild Garlic, Melilotus or Coriander.

7.2.2.11 Chemicals Not Approved For Stored Grain

There is a NIL tolerance for residues of any chemical compound not approved for oats or used in contravention of the labelled instructions.

Contact insecticides or Dryacide are NOT approved for the use on Oats. Only approved fumigants such as Phosphine can be used provided that the approved application rates have been used.

If a Grower indicates that the load has been treated with a chemical either shortly before harvesting or prior to delivery then the classifier should contact Head Office Customer Services department to determine whether the chemical and the treatment rate are acceptable for receipt at your site.

7.3 Oat Reveal Charts

You may add the current Oat Reveal Standards Reference Charts to this section. Refer to the Intranet for the latest revision of the Reference Chart.