DEPARTMENT OF AGRICULTURE, FORESTRY AND FISHERIES

STD. No. H-1

AGRICULTURAL PRODUCT STANDARDS ACT, 1990 (ACT No. 119 OF 1990)

STANDARDS AND REQUIREMENTS REGARDING CONTROL OF

THE EXPORT OF IN-SHELL MACADAMIA NUTS

The Executive Officer: Agricultural Product Standards, has stipulated under section 4(3)(a)(ii) of the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990), these standards regarding the quality of In-shell Macadamia nuts and the requirements regarding the packing, marking and labelling thereof.

**STD No. H-1**

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| STANDARDS AND REQUIREMENTS REGARDING CONTROL OF THEEXPORT OF IN-SHELL MACADAMIA NUTS AS STIPULATED BYGOVERNMENT NOTICE NO. R. 65 OF 29 JANUARY 2016.  |
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**Definitions**

1. In these standards and requirements, unless inconsistent with the context, any word or expression to which a meaning has been assigned in the Act, shall have a corresponding meaning and –

**"address"** means a physical address in the Republic of South Africa and includes the

street or road number or name, and the name of the town, village or suburb and in case of a farm, the name or number of the farm and of the magisterial district in which it is situated;

**"bag"** means a bag made from jute, phormium, polypropylene or any other suitable

 material;

**"blemished shell"** means the noticeable and localised imperfection that significantly

impairs the external appearance of the shell including staining and dark spots;

**"broken shell"** means a broken, split or seriously damaged shell. This excludes natural

lines in the shell. If the kernel is visible to the naked eye it is considered as a defect;

**"bulk container"** any vehicle or shipping container used for the transport or storage of macadamia nut-in-shell products;

**"chemical residue"** means residues of agricultural remedies which in terms of the Fertilizers, Farm Feed, Agricultural Remedies and Stock Remedies Act, 1947 (Act No. 36 of 1947) are permissible for the treatment of pests and diseases and which do not exceed the prescribed maximum residue limits in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972);

**"consignment"** means a quantity of in-shell macadamia nuts of the same kind or grade which is delivered at any one time under cover of the same consignment note, delivery note or receipt note, or delivered by the same vehicle or bulk container, or which is loaded from a bin of a nut elevator into a ship's hold or railway truck, or if such a quantity is subdivided into different classes, each quantity of each of the different classes;

**"container"** means a bag or other container into which the in-shell macadamia nuts is

 packed;

**"damage caused by pests"** means visible damage or contamination caused by

insects, mites, rodents or other animal pests, including the presence of dead insects and/or mites and their debris or excreta;

**"decay"** means a state of decomposition, fungal development, or insect infestation which partly or completely, detrimentally affect the quality of the in-shell macadamia nuts;

**"decomposed nut"** means a nut with significant decomposition caused by the action of micro-organisms or other biological processes;

**"diameter"** size of nut as determined by passing nuts over a sieve with round holes of a specified size;

**"foreign matter"** in relation to in-shell macadamia nuts, means any visible or apparent material other than in-shell macadamia nuts and kernels or part of kernels;

**"Food Business Operator (FBO)"** means the person or persons responsible for

ensuring that the prescribed requirements of these standards are met within the food business as well as the person with overall authority on site or in the specific establishment;

**"germinating nut"** means the kernel which shows signs of germination;

**"heat damage"** means the damage caused by excessive heat during drying which significantly affects the flavour, appearance or edibility of the nut;

**"husk"** means the outer hull of the macadamia nut, which covers the shell;

**"in-shell basis"** refers to a quantity of a defect/characteristic based on the dry-in-shell mass;

**"immature kernel"** means the kernel which is misshapen, abnormally small or partially aborted, including shrivelled and shrunken kernels;

 **"inspector"** means the Executive Officer or an officer under his control, or an Assignee or suitably qualified employee of an Assignee;

**"insect damage"** means damage as a result of insects, including but not limited to stink bugs, nut borers and false codling moths;

**"kernel recovery"** means the total weight of both sound and unsound kernel at 4% moisture content (or less) expressed as a percentage of the Dry-in-shell weight from which this sound and unsound kernel was recovered;

**"macadamia nuts"** means the seed of the plant *Macadamia integrifolia, tetraphylla and ternifolia* and their hybrids;

 **"mould"** means mould filaments which are visible to the naked eye, either inside or outside of the kernel;

**"mechanical damage"** means the shell with very apparent mechanical injuries, cracks, splits, tears, bruising or any injury affecting a significant part of the shell;

**"moisture content"** means kernel moisture percentage (by mass) as measured by a certified calibrated moisture balance;

**"pest"** means any insect, other arthropod or mammal which is injurious to stored macadamia nuts, irrespective of the stage of development of the pest;

**"shell"** means the inedible woody part of the in-shell nut that protects the kernel, corresponding the testa;

**"sound kernel"** kernel which conforms to the minimum standards for kernel stipulated

in these export standards and requirements, including onion rings;

**"sieve"** means a size measuring device which is more than 20 cm x 20 cm in size with consistently accurate round holes of a specified size or a verified size ring of the required size;

**"size"** means the size of an in-shell macadamia nut as measured with a sieve;

**"the Act"** means the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990);

**"stained shell"** means apparent and localized alteration of the external colour which significantly impairs the external appearance of the shell;

**"unsound kernel"** means immature kernels, mould-infested kernels, kernels which are decayed, damaged by heat or insects, germinating or sprouting, and kernels of any colour which is not typical of sound kernel (excluding onion rings) and which do not conform to the minimum standards for kernel stipulated in these export standards and requirements;

**"unspecified defects"** means any defects caused by physiological or non-physiological

 factors affecting the quality of the nut detrimentally; and

**"wet-in shell"** means any nut in shell from after dehusking to delivery at the processor

where moisture content is not stipulated or assumed, and where the kernel moisture content is higher than 4%.

**Scope**

2. These standards and requirements shall relate to all in-shell Macadamia nuts in respect of which an approval for the export thereof is required in terms of section 4 of the Act. This standard does not apply to Macadamia kernel that is processed, packed raw or salted, sugared, flavoured or roasted for industrial purposes.

**Requirements for approval**

3. (1) An approval referred to in section 4 of the Act may be issued in respect of a consignment of in-shell Macadamia nuts if --

(a) the in-shell Macadamia nuts comply with the quality standards as set out in items 4;

(b) the containers in which the consignment concerned is packed, comply with the requirements as set out in item 5;

(c) the consignment concerned is packed in accordance with the packing requirements as set out in item 6;

(d) the containers concerned are marked in accordance with the marking requirements as set out in items 7 and 8;

(e) the samples for inspection are drawn in accordance with the requirements as set out in items 9, 10 and 11;

(f) the consignment concerned is inspected in accordance with the methods as set out in items 12, 13, 14, 15 and 16;

(g) the consignment concerned has been presented for inspection in accordance with the requirements of the Regulations regarding Control of the Export of Tree nuts;

(h) an inspector has, after an inspection in terms of the said regulations, found that the provisions of these standards and requirements have been complied with in respect of the consignment concerned; and

(i) A valid fumigation certificate shall accompany each consignment as proof that the consignment has been fumigated.

 (2) The Executive Officer may deviate from the stipulated standards and requirements and issue the approval in respect of a quantity of in-shell Macadamia nuts that -

(a) is to be exported as an experiment or under such other special circumstances as may be approved by the Executive Officer; and

(b) complies with the requirements for such produce in force in the country to which it is to be exported.

**QUALITY STANDARDS**

4. (1) **Shell requirements (the shells are to be inspected before cracking)**

The shell of macadamia nuts-in-shell shall --

(a) be intact, however, superficial cracks or slight superficial damage are not considered as defects: Provided that the kernel is physically protected; and not visible to the naked eye;

(b) be clean; practically free of any visible foreign matter, including residues of adhering husk that could not be removed from the shell;

(c) be free from mould filaments visible to the naked eye;

(d) be well formed; not noticeably misshapen;

(e) be dry; no free water shall be visible on the shell; and

(f) be free from pest damage.

 (2) **Kernel requirements**

The kernel of macadamia nuts shall --

(a) be well developed; under-developed (immature) kernels may be no worse than photo no. 3 of series E of the colour charts;

(b) be free from moulds;

(c) be free from decay;

(d) be free from pest damage;

(e) not show signs of germination worse than photo no. 2 of series A of the colour charts;

(f) not contain kernel spot (791 spot) worse than photo no. 2 of series F of the colour charts;

(g) not have chemical residues in quantities or at levels that exceed the prescribed maximum residue limits in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972): Provided that --

(i) if the prescribed maximum residue limit of an importing country is lower than is permissible in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972) the prescribed maximum residue limit of the importing country shall be complied with; and

(ii) the Executive Officer may grant permission for a consignment of in-shell macadamia nuts with a higher maximum residue limit, to be exported to countries where this higher residue limit is permis­sible; provided further that the export documents are accordingly endorsed with the name of the importing country; and

(h) the kernelmoisture contentof in-shell macadamia nuts shall not exceed 4.0 percent.

(3) **Requirements for the whole product (both the shell and kernel) shall** --

 (a) be free from mould filaments visible to the naked eye;

 (b) be free from living pests whatever their stage of development;

 (c) be free from damage caused by pests, including the presence of dead

insects and/or mites, and their debris; and

 (d) not exceed the maximum percentage of the permissible deviations as

determined in Table 1 of the Annexure.

(4) **Sizing requirements**

1. The minimum size of an in-shell macadamia nut may not be less

than 18 mm in diameter as determined by passing the nuts over a sieve with round holes of exactly 18 mmin diameter or with the aid of a verified size ring of 18 mm in diameter.

(b) Subject to the provisions of sub-item (1, 2 and 3) in-shell macadamia nuts shall comply with the requirements for plant injurious organisms of phytosanitary importance as determined by the Director of the Directorate: Plant Health in terms of the Agricultural Pest Act,1983 (Act No. 36 of 1983).

**REQUIREMENTS FOR CONTAINERS**

5. (1) Containers containing in-shell macadamia nuts intended for export shall be suitable, intact, clean, dry, free from insects, odourless and strong enough for the conveyance of the maximum mass of in-shell macadamia nuts.

#### (2) Stacking of containers on pallets

 When containers containing in-shell macadamia nuts are palletized --

(a) the pallet shall be clean, undamaged and suitable and not transmit to the in-shell macadamia nuts any harmful substance or any substance that may be injurious to human health;

(b) pallets manufactured from wood shall be without bark and such pallets shall comply with the requirements as stated in the International Standards for Phytosanitary Measures (ISPM 15);

(c) the pallet shall be free from any visible signs of fungus growth;

(d) the pallet shall be free from Arthropoda infestation;

(e) the containers shall be stacked firmly and square with each other and the pallet;

(f) only containers of the same dimensions shall be stacked in the same layer on the pallet; and

(g) where applicable, the containers shall not be stacked upside-down on the pallet.

**PACKING REQUIREMENTS AND MARKING REQUIREMENTS**

**Requirements for containers**

6. (1) A container in which in-shell Macadamia nuts is packed shall --

(a) be made from a material that --

(i) is suitable for this purpose;

(ii) will protect the contents thereof from contamination; and

(iii) will not impart any undesirable flavour or taste to the contents thereof;

(b) in the case of a container that is re-used, be thoroughly cleaned and sterilized before in-shell Macadamia nuts is packed therein;

(c) be clean and intact; and

(d) be closed properly in a manner permitted by the nature thereof.

**Marking of containers and outer containers**

7. (1) Containers (bags) shall be marked with a code for purposes of

 traceability.

(2) Marking of containers (bags) with additional information is optional

according to market requirements.

**Prohibited particulars**

8. No wording, illustration or other device or expression which constitutes a misrepresentation or which, directly or by implication, creates a misleading impression of the contents shall appear on a container which contains in-shell macadamia nuts.

**SAMPLING**

9. (1) An inspector shall for the purpose of these standards and requirements, take a random representative sample of in-shell macadamia nuts in the following manner and shall satisfy himself/herself that the samples so drawn are representative of the consignment concerned.

 (a) In the case of a consignment of in-shell nuts --

1. exported in bags, a sample of at least 150 g per bag shall be taken from at least the number of bags equal to the square root of the total number of bags in the consignment; and

 (ii) exported in crates, a sample of at least 150 g per crate shall be taken from at least the number of crates equal to the

 square root of the total number of crates in the consignment.

 (b) Provided that the total sample drawn per consignment is at least

 4.5 kg in mass. If the consignment of less than 30 bags or crates is sampled, the mass of the sample drawn per bag or crate shall be increased in order to obtain a total sample of at least 4.5 kg.

 (2) The collective sample obtained in item (9)(1)(a) shall –

1. have a total mass of at least 4.5 kg of in-shell macadamias; and
2. be thoroughly mixed before further examination.

**Deviating sample**

10. (1) If an inspector should notice during the course of abstracting the random samples mentioned in item 12 (a) and (b), that any of the quantities of in-shell macadamia nuts drawn from any bag or portion of a bulk container are obviously inferior to, or differ from, that drawn from the remainder of the bags or from the other parts of the bulk container, he/she shall draw samples only out of such bags or portion of the bulk container from which the inferior or differing in-shell macadamia nuts have been taken, place them in a collecting tray and mix them thoroughly. Samples drawn in this manner shall, in the application of these standards and requirements be considered as deviating samples.

(2) Any bags of which the contents do not comply in any respect with the

requirements of these standards and requirements or bags, from which deviating samples have been taken, shall be marked with a distinguishing mark.

**Obtaining of a working sample**

11. (1) A working sample shall be obtained by randomly drawing 100 nuts from the representative or deviating sample of the consignment.

**METHODS OF INSPECTION**

**Determination of musty, sour or unacceptable odours, insects, mites and their debris**

12. (1) A consignment of in-shell macadamia nuts or a sample of the consignment concerned shall be sen­sorially examined in order to determine whether --

(a) it has a musty, sour or other unacceptable odour; and

(b) it contains insects, plant injurious organism of phytosanitary importance.

**Determination of foreign matter**

13. (1) The percentage foreign matter and shelled kernels in a consignment of in-shell macadamia nuts, is determined as follows --

(a) From the collective sample of at least 4.5 kg, remove all foreign matter and shelled kernels separately and determine the respective mass of each;

(b) Express the respective masses of the foreign matter and shelled kernels as a percentage of the collective sample; and

(c) Such percentages represent respectively the percentage foreign matter and shelled kernels in the consignment.

**Determination of shell defects**

14. (1) The percentage of shell defects --

(a) Obtain a working sample of 100 in-shell nuts from the sample of the consignment;

(b) Weigh and record the mass of the working sample obtained in paragraph (a) above;

(c) Separate the nuts in the working sample that do not meet the shell requirements as stipulated in these standards; and

(d) Weigh the defective nuts separated in (c) above and divide this figure by the mass of the working sample to determine the percentage of defective nuts (by mass).

**Determination of sound and unsound kernel**

15. (1) The percentage of unsound kernel shall either be determined on an in-shell mass basis or a count basis (according to the exporter’s requirements) --

 (a) **In-shell mass basis**

1. Obtain a working sample of 100 in-shell nuts from the sample of the consignment;

 (ii) Weigh and record the mass of the working sample obtained

 in paragraph (i) above;

 (iii) Crack the nuts in the working sample and separate shell

 from kernel;

 (iv) Separate the kernel that does not meet the requirements of

 these standards (unsound kernel) from the sound kernel;

(v) Express the mass of the unsound kernel as a percentage of the mass of the working sample obtained in paragraph (ii) to obtain the percentage unsound kernel; and

(vi) Express the mass of the sound kernel as a percentage of the mass of the working sample obtained in paragraph (ii) to obtain the percentage sound kernel recovery.

 (b) **Count basis**

1. Obtain a working sample of 100 in-shell nuts from the sample of the consignment;
2. Crack the nuts individually and place the kernel from each nut on a separate space on a 10 x 10 grid. Keep the shell to one side;
3. Inspect each kernel individually and determine the number of kernels that do not meet the requirements of these standards (unsound kernels);
4. Express the number of unsound kernels as a percentage of the number of in-shell nuts in the working sample obtained in paragraph (i) to obtain the percentage unsound kernel; and
5. Express the number of the sound kernels as a percentage of the number of in-shell nuts in the working sample obtained in paragraph (i) to obtain the percentage sound kernel.

**Determination of kernel moisture content**

16. The kernel moisture content of a consignment of macadamia nuts may be determined according to any suitable method: Provided that the results thus obtained are in accordance with (± 0,2 per cent mass fraction) ISO 665-2000 based on the three hour, 103 ± 2˚C in an oven at atmospheric pressure.

**TABLE 1**

**MAXIMUM PERCENTAGE PERMISSIBLE DEVIATIONS FOR IN-SHELL MACADAMIA NUTS.**

|  |  |
| --- | --- |
| NATURE OF DEVIATIONS | MAXIMUM PERCENTAGE PERMISSIBLE DEVIATIONS\* |
| A. QUALITY FACTOR |  20% |
| Tolerance for shells not satisfying the minimum requirements (provided that mould and pest damage are within the respective limits) |
| Mould |  5% |
| Pest damage |  5% |
| Foreign matter |  0.1% |
| B. SIZE TOLERANCES |  |
| In-shell macadamia nuts not conforming to the minimum size requirements |  10% |
| C. UNSOUND KERNEL  |  |
| Combined unsound kernels not satisfying the minimum requirements |  |  |
| In-shell mass basis\* | Count basis\*\* |
|  | 5% | 15% |

***\* by mass of in-shell nuts.***

*\*Mass of unsound kernel in sample expressed as a percentage of the mass of the in-shell sample from which kernel was extracted*.

*\*\*Number of kernels that are unsound (not satisfying minimum requirements) expressed as a percentage of the total number of in-shell nuts from which the kernels were extracted.*