DEPARTMENT OF AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

NO. R. 4368 **16 February 2024**

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

REGULATIONS RELATING TO THE GRADING, PACKING AND MARKING OF MAIZE INTENDED FOR SALE IN THE REPUBLIC OF SOUTH AFRICA

The Minister of Agriculture, Land Reform and Rural Development acting under section 15 of the Agricultural Product Standards Act, 1990 (Act No. 119 of 1990), made the regulations in the Schedule.

MRS AT DIDIZA, MP
MINISTER FOR AGRICULTURE, LAND REFORM AND RURAL DEVELOPMENT

SCHEDULE

Definitions

1. In these regulations any word or expression to which a meaning has been assigned in the Act shall have that meaning and, unless the context otherwise indicates -

"**animal filth**" means all animal matter which may contaminate the maize, such as dead rodents, dead birds including hair, dung and/or feathers;

"**bag**" means a bag manufactured from -

(a) jute or phormium or a mixture of jute and phormium; or

(b) polypropylene that complies with SABS specification CKS632;

"**bulk container**" means any vehicle or container in which bulk maize is stored or transported;

"**consignment**" means -

(a) a quantity of maize of the same class, which belongs to the same owner, 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 loaded from the same bin of a grain elevator or from a ship's hold; or

(b) in the case where a quantity referred to in paragraph (a), is subdivided into different grades, each such quantity of each of the different grades;

"**coffee-stained maize kernels**" means maize kernels with a shiny brown colour that occurs anywhere on the pericarp of the maize kernel;

"**container**" means a bag or a bulk container;

"**defective maize kernels**" means maize kernels and pieces of maize kernels that:

(a) are shrivelled, obviously immature, fungi infected, heat damaged and frost damaged;

(b) have sprouted, including kernels of which the shoot (plumule) in the germ is visibly discoloured;

(c) have cavities in the germ or endosperm caused by insects or rodents;

(d) are visibly soiled (smeared) or contaminated by smut, fire, soil, smoke or coal-dust;

(e) all matter that can pass through the 6,35 mm round-hole sieve;

(f) are of subspecies other than *Zea mays indentata* or *Zea mays indurata*.

Provided that -

(i) irregularity of shape and size of maize kernels shall not affect the grading thereof;

(ii) chipped or cracked maize kernels or pieces of maize kernels which are in a sound condition, and which appear in a sample of maize, but which do not pass through a 6,35 mm round-hole sieve, shall not be regarded as defective maize kernels under these regulations.

(iii) oxidation-stained maize kernels, coffee-stained maize kernels, pinked maize kernels, water damaged kernels and discoloured maize kernels shall not be considered as defective.

"**discoloured maize kernels**" means maize kernels that are as a result of environmental conditions discoloured on both sides of the kernel, excluding, oxidation-stained maize kernels, coffee-stained maize kernels and pinked maize kernels;

"**foreign matter**" means all matter other than maize, excluding, animal filth, coal, glass, metal, plastic, and stones;

"**frost damaged kernels**" means maize kernels that are damaged by frost characterized by two or more of the following:

(a) a dull brown discoloration from the connecting tip and/or;

(b) an underdeveloped endosperm in relation to the germ; and/or

(c) the pericarp is blistered or flaked.

"**fungi infected kernels**" means maize of which the kernels or pieces of kernels are visibly infected with fungi and has corresponding meaning with mould infected kernels:

(a) are characterised by black, blue, green, yellow or white fungi growth anywhere on the kernel, or are characterised by fungi growth underneath the bran layer of the kernel;

(b) are infected by ear-rot and are characterised by red, pink, or brown discolorations. The kernels are partially to completely infected.

"**heat damaged kernels**" means kernels that are as a result of external heat or internal fermentation affected with excess moisture and have at least one of the following characteristics:

(a) Kernels or pieces of kernels that are amber, brown, dark brown or black discoloured.

(b) Kernels of which the germ has dark-brown to black discoloration.

"**insect**" in relation to maize, means any live insect which is injurious to stored grain, irrespective of the stage of development of the insect;

"**maize**" means the threshed kernels or pieces of kernels of the plants of *Zea mays indurata* and *Zea mays indentata* or one or more crossings of the two types;

"**other colour maize kernels**" in relation to -

(a) **white maize**, means maize kernels or pieces of maize kernels of which the endosperm as a result of genetic (characteristics) composition have another colour than white, excluding pinked maize kernels;

(b) **yellow maize**, means maize kernels or pieces of maize kernels of which the endosperm as a result of genetic (characteristics) composition have another colour than yellow;

"**oxidation-stained maize kernels**" means maize kernels with a shiny light brown colour on the pericarp that are discoloured from the crown and not from the tip cap;

"**pinked maize kernels**" means kernels and pieces of kernels of white maize of which the pericarp or part thereof is shaded red or pink in colour;

"**poisonous seeds**" means seeds or part of seeds of plant species that may in terms of the Foodstuffs, Cosmetics and Disinfectants Act, 1972 (Act No. 54 of 1972) represent a hazard to human or animal health when consumed, including seeds of *Argemone mexicana, Convolvulus* spp., *Crotalaria* spp., *Datura* spp., *Ipomoea* spp. *Lolium temulentum*, *Ricinus communis* or *Xanthium* spp.;

"**shrivelled or obviously immature maize kernels**" means maize kernels with a thin and shrunken appearance;

"**sprouted maize kernels**" means maize kernels which have sprouted so far that developing roots and/or sprouts are clearly visible, or the shoot (plumule) in the germ is visibly discoloured;

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

"**the 6,35 mm round-hole sieve**"(± 0,05mm) means a sieve

(a) with a flat metal sheet bottom of 1,0 mm thickness perforated with round holes of 6,35 mm(±0,05mm) in diameter that are arranged with the centres of the holes at the points of intersection of an equilateral triangular grid with a pitch of 8 mm;

(b) of which the upper surface of the bottom is smooth;

(c) the frame of which is at least 40 mm high;

(d) with the inner width of at least 200 mm and the inner length of at least 300 mm, or, in the case of a circular sieve, the inner diameter of at least 278 mm; and

(e) with a minimum area of 600cm^2 and a maximum of 750cm^2

(f) that fits onto a tray with a solid bottom and must be at least 20mm above the bottom of the tray; and

"**water damaged maize kernels**" means maize kernels with a light yellow shine from the tip cap in a band around the maize kernel.

Scope of regulations

2. These regulations are minimum standards applicable to maize that is destined for sale in the Republic of South Africa but does not include-

(a) maize in retail quantities; and

(b) maize for seed production purposes.

Restrictions on sale of maize

3. (1) No person shall sell maize in the Republic of South Africa -

(a) unless the maize is sold according to the classes set out in regulation 4;

(b) unless the maize complies with the standards for the class concerned set out in regulation 5;

(c) unless the maize complies with the grades of maize and the standards for grades, where applicable, set out in regulations 6 and 7 respectively;

(d) unless the maize is packed in accordance with the packing requirements set out in regulation 8;

(e) unless the containers or sale documents, (as the case may be), are marked in accordance with the marking requirements set out in regulation 9; and

(f) if such maize contains a substance that renders it unfit for human consumption or for processing into or utilisation thereof as food or feed.

(2) The Executive Officer may grant written exemption, entirely or partially to any person on such conditions as he or she may deem necessary, from the provisions of sub regulation 1: Provided that such exemption is done in terms of section 3 (1) (c) of the Act.

PART I
QUALITY STANDARDS

Classes of maize

4. The classes of Maize shall be -

(a) Class White Maize;

(b) Class Yellow Maize; and

(c) Class Other Maize.

Standards for classes of maize

5. (1) A consignment of maize shall be classified as Class White Maize if -

(a) subject to the allowable deviation in respect of other colour maize kernels that apply to the different grades of white maize, it consists of maize the endosperm of which is by nature white in colour; and

(b) it complies with the standards for one of the grades of white maize set out in regulation 7.

(2) A consignment of maize shall be classified as Class Yellow Maize if -

(a) subject to the allowable deviation in respect of other colour maize kernels that apply to the different grades of yellow maize, it consists of maize the endosperm of which is by nature yellow in colour; and

(b) it complies with the standards for one of the grades of yellow maize set out in regulation 7.

(3) A consignment of maize shall be classified as Class Other Maize if the consignment does not comply with the standards for Class White Maize or Class Yellow Maize.

Grades of maize

6. (1) Maize of the Class White Maize shall be graded as WM1, WM2 or WM3.

(2) Maize of the Class Yellow Maize shall be graded as YM1, YM2 or YM3.

(3) No grades are determined for Class Other Maize.

(b) in the case of maize delivered in bulk and subject to regulation 11, be obtained by sampling that consignment throughout the whole depth of the layer, in at least six different places, chosen at random in that bulk quantity, with a bulk sampling apparatus.

(2) The collective sample obtained in subregulation (1) (a) or (b) shall -

(a) have a total mass of at least 10 kg; and

(b) be thoroughly mixed by means of a divider before further examination.

(3) If it is suspected that the sample referred to in subregulation (1)(a) is not representative of that consignment, an additional five per cent of the remaining bags, chosen from that consignment at random, shall be emptied into a suitable bulk container and sampled in the manner contemplated in sub regulation (1)(b).

(4) A sample taken in terms of these regulations shall be deemed representative of the consignment from which it was taken.

Sampling if contents differ

11. (1) If, after an examination of the maize taken from different bags in a consignment in terms of regulation 10 (1), it appears that the contents of those bags differ substantially -

(a) the bags concerned shall be placed separately;

(b) all the bags in the consignment concerned shall be sampled in order to do such separation; and

(c) each group of bags with similar contents in that consignment shall for the purposes of these regulations be deemed to be a separate consignment.

(2) If, after the discharge of a consignment of maize in bulk has commenced, it is suspected that the consignment could be of a class or grade other than that determined by means of the initial sampling, the discharge shall immediately be stopped and the part of the consignment remaining in the bulk container, as well as the grain that is already in the collecting tray, shall be sampled anew with a bulk sampling apparatus or by catching at least 20 samples at regular intervals throughout the whole offloading period with a suitable container from the stream of grain that is flowing in bulk.

Working sample

12. A working sample shall be obtained by dividing the representative sample of the consignment according to the latest version of ICC 101/1 method.

PART IV
DETERMINATION OF OTHER SUBSTANCES

Determination of undesirable odours and harmful substances

13. A sample of a consignment of maize shall be sensorially assessed or chemically analysed in order to determine -

(a) whether it has a musty, sour, or other undesirable odour: Provided that a working sample of unscreened maize that is ground in a grain mill to a fine meal may be used for the determination concerned; and

(b) whether it contains a substance that renders the maize unfit for human consumption or for processing into or for utilisation as food or feed.

Determination of animal filth, coal, glass, insect, metal, plastic, poisonous seed, and stone content

14. A consignment of maize shall be sensorially assessed, and a sample of that consignment shall be sensorial assessed and sorted by hand in order to determine whether the sample contains animal filth, coal, glass, insects, metal, plastic, poisonous seeds, and stones.

Determination of percentage of foreign matter

15. The percentage of foreign matter in a consignment of maize shall be determined as follows:

(a) Obtain a working sample with a mass of at least 150g from the sample of the consignment.

(b) Remove all foreign matter from the working sample and determine the mass thereof.

(c) Express the mass thus determined as a percentage of the total mass of the working sample.

(d) Such percentage shall represent the percentage of foreign matter in the consignment concerned.

PART V
MAIZE KERNELS

Determination of percentage of other colour maize kernels

16. The percentage of other colour maize kernels in a consignment of maize shall be determined as follows:

(a) Obtain a working sample with a mass of at least 150g from the sample of the consignment.

(b) Remove all other colour maize kernels from the working sample and determine the mass thereof.

(c) Express the mass thus determined as a percentage of the mass of the working sample.

(d) Such percentage shall represent the percentage of other colour maize kernels in the consignment concerned.

(e) Other coloured kernels must be returned to the working sample

Determination of percentage of defective maize kernels

17. The percentage of defective maize kernels in a consignment of maize shall be determined as follows:

(a) Obtain a working sample with a mass of at least 150g from the sample of the consignment.

(b) Place the working sample on the 6, 35 mm round-hole sieve and screen the sample by moving the sieve 20 strokes to and fro, alternately away from and towards the operator of the sieve. Move the sieve, which rests on a table or other suitable smooth surface, 250 mm to 460 mm away from and towards the operator with each stroke. The prescribed 20 strokes must be completed within 20 to 30 seconds.

(c) Determine the mass of the defective maize kernels and pieces of maize kernels that has passed through the sieve and express it as a percentage of the mass of the working sample.

(d) Remove all defective maize kernels from that part of the working sample remaining on top of the sieve and express it as a percentage of the mass of the working sample.

(e) Calculate the sum of the masses determined in terms of paragraphs (c) and (d).

(f) Express the combined mass calculated in terms of paragraph (e) as a percentage of the mass of the working sample.

(g) In the case of yellow maize, the percentage obtained -

(i) in terms of paragraph (c), represents the percentage of defective maize kernels and pieces of maize kernels in the consignment concerned, which can pass through the 6,35 mm round-hole sieve; and

(ii) in terms of paragraph (d), represents the percentage of defective maize kernels and pieces of maize kernels in the consignment concerned, which cannot pass through the 6,35 mm round-hole sieve.

(h) In the case of white maize, the percentage obtained in terms of paragraph (g) represents the percentage of defective maize kernels in the consignment concerned.

PART VI
MOISTURE CONTENT

Determination of moisture content

18. The moisture content of a consignment of maize may be determined according to any suitable method: Provided that the results thus obtained are in accordance with the maximum permissible deviation (± 0,3 per cent) for a class 1 moisture meter as detailed in ISO 7700/1-1994 based on the results of the 72 hour, 103°C oven dried method (AACC Method 44/15A/1981).

OFFENCE AND PENALTIES

19. Any person who contravenes or fails to comply with any provision of these regulations shall be guilty of an offence and upon conviction be liable to a fine or imprisonment in terms of section 11 of the Act.

COMMENCEMENT

20. The regulations shall come into operation on date of publication.

REPEAL

21. Regulations published by Government Notices No, R. 473 of 8th May 2009 hereby repealed from the date of commencement of these regulations

ANNEXURE A
TABLE

STANDARDS FOR GRADES OF CLASS WHITE MAIZE AND CLASS YELLOW MAIZE

	Maximum permissible deviation					
Deviation	White maize			Yellow maize/		
	WM1	WM2	WM3	YM1	YM2	YM3
1	2	3	4	5	6	7
1. Foreign matter [regulation 15]	0,3%	0,5%	0,75%	0,3%	0,5%	0,75%
2. Other colour maize kernels [regulation 16]	3%	6%	10%	2%	5%	5%
3. Defective maize kernels, above and below the 6,35 mm round-hole sieve [regulation 17]	7%	13%	30%	*	*	*
4. Defective maize kernels that can pass through the 6,35 mm round-hole sieve [regulation 17(c)]	*	*	*	4%	10%	30%
5. Defective maize kernels that can not pass through the 6,35 mm round-hole sieve [regulation 17(e)]	*	*	*	9%	20%	30%
6. Deviations referred to in items 1, 2, 3, 4 and 5 collectively: Provided that the deviations are individually within the specified limits	8%	16%	30%	9%	20%	30%

* No specifications.