

South African Pecan Kernel Best Practice Guide

Best practice guide under the authority of SAPPA. This guide is available for use by processors, suppliers, buyers, and consumers.

1. Certified HACCP System

- It is recommended that each processor have at least have a 3rd party certified HACCP system in place. The system must be certified by a registered accredited certification body.

2. Approved Supplier Program

- Nut in shell (NIS) suppliers to have a food safety supplier program in place.

3. Nut in Shell storage and handling

- NIS must be stored in conditions that provide ample ventilation.
- NIS must be below 6% moisture upon arrival at the factory.
- NIS stored for longer than 90 days must be stored below 25 degrees Celsius.
- NIS must be stored below 70% relative humidity if stored for longer than 90 days.

4.0 Final kernel product requirements

4.1 Microbiological and chemical standards

MICROBIOLOGICAL SPECIFICATION					
Total Plate Count	<10 000 cfu/g	Yeast & Mould	<1 000 cfu/g	Total Coliforms	<100 cfu/g
E. coli	<10 cfu/g	E. coli 0157:H7	Not detected cfu/g	Salmonella spp	Negative in 25g
Staphylococcus Aureus	Not detected cfu/g	Listeria Monocytogenes	Not detected cfu/g	Heavy Metal if Required	
CHEMICAL SPECIFICATION					
Pesticide Multi Residue Level		None Detected			
Phosphonic Acid (Organic only)		None Detected	Total Aflatoxins B ₁ +G ₁ +B ₂ +G ₂ :	< 2.50 ppb	
Peroxide Value		<4 meq O2/kg	Free Fatty Acids:	0.5% max	
Aflatoxin B1	<2 ug/kg	Water Activity	0.65% max	Moisture	4%

The shelf life is dependent on the rancidity as well as the storage conditions. It is highly recommended that product be stored at lower temperatures to retain freshness for longer.

- Peroxide value Shelf life 1 year < 4meq O₂/kg
- Peroxide value Shelf life 2 years < 2meq O₂/kg
- Peroxide value of > 4meq O₂/kg is not suited for human consumption

4.2 Sampling for microbiological & Chemical analysis

- All nuts must be sampled and tested; test sample may not be less than 100 grams per batch of kernel. Test sample must be sampled by using a minimum of 10 sub samples during the production process of the batch.
- Batch size may not exceed 12.5 tons.
- Batch may not contain different grades.

4.3 Laboratory accreditation

- All laboratories undertaking microbiological and chemical analysis must be accredited by an ISO 17025 or an equivalent Food Physio-chemical and microbiological analytical laboratory.

4.4 Kernel retention samples

- Retention samples of 500 grams must be retained for each batch for microbiological and chemical analysis. Retention samples must be kept under the recommended storage conditions for finished product for the remainder of the shelf life of the product in suitable packaging to protect the quality of the product.

4.5 Physical raw kernel specifications

Kernel moisture content	<4%
Appearance and taste	Comply to the colour standard of USDA regulation
	Free from excessive oil or dust
	Crunchy texture with typical pecan flavour
	Free from off odours and flavours
	Complying to different grades and sizes USDA regulation
Foreign matter	As per USDA regulation

4.6 Agricultural chemical residue testing

- All products must conform to the importing countries maximum residue level (MRL) for agricultural chemicals.
- MRL levels for South Africa FOODSTUFFS, COSMETICS AND DISINFECTANTS ACT, 1972 (ACT54OF 1972). Only registered products in South Africa allowed.
- The MRL should comply with the list for the country of origin as well as for the country exported to. There are various platforms where this information can be found, such as the SAPPA website.

4.7 Packaging specifications for Kernel

- Bulk kernel must be packed in a modified atmospheric packaging (MAP)
- Recommended packaging 117µm MPET, 9 µm Foil or 90 µm LLDPE, flushed with Food Grade Nitrogen or Carbon dioxide and vacuum sealed.

4.8 Packaging and labelling of finished products

All bulk packaging must comply and display the following information.

- Packer/Seller name address and contact details
- Country of origin
- Product classification and size
- Batch number
- Net Weight
- Best before date
- Recommended storage conditions
- Allergen information

4.9 Final product storage

- Storage should be in conditions that preserve the quality
- Finished product may not be stored in direct sunlight

Temperature	22°C	8°C	0°C - 3°C	-6°C to -4°C
Shelf life	3 months	6 months	12 months	18 - 24 months

4.10 Certificate of Analysis

- Each batch sold must be accompanied with a certificate of Analysis COA representing the batch.
- Indicating microbiological, chemical and MRL results
- Indicating the shelf life