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Specialized Section on Standardization of Dry and Dried Produce

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Item 6 (a) of the provisional agenda

NEW UNECE STANDARDS

INSHELL MACADAMIA NUTS AND MACADAMIA KERNELS

Proposal for a new international standard for Macadamia (Raw Kernel) prepared by experts of the International Nut and Dried Fruit Council Foundation (INC).

PROPOSED INTERNATIONAL MACADAMIA SPECIFICATION (Raw Kernel)

Raw Kernel Standards	Proposed International Standard	Comments
Moisture Content	1.5% +/- 0.2%	
Peroxide Value	3 meq/kg	
Free Fatty Acid	Max 0.5	
Aflatoxin total	Max 4ppb	
Aflatoxin B1	Max 2ppb	
Chemical residues	As per importing countries food standards	
Total Plate Count	Less than 30,000 cfu/g	
Yeast & Mould	Less than 20,000 cfu/g, No visible mould	
E.Coli	Less than 3 per gm (using MPN method) or not detected using triplicate tube method. Less than 3 cfu/g using ISO 16649-2	Laboratory should have ISO accreditation or equivalent. Sampling procedure is important. Recognised standard in Australia is NATA
Salmonella	Not Detected in 250gm (Sampling: 250gm sample comprised of 10X25gm sub-samples per lot). (See sampling protocol below)	Laboratory should have ISO/NATA accreditation or equivalent. Sampling procedure is important. Both methods BAM Ch 5 - AOAC and ISO 6579 acceptable
Coliforms	Less than 200 cfu/g	Coli forms are bacteria from faces and urine. E. Coli 0157 (high risk for foodstuff) is only isolated on a Coli form plate count. This strain is not picked up with a standard E. Coli test.
Enterobacteria		Required by other tree nuts - not an issue in macadamias
Reject Defects (Insect damage, discoloration, shrivelled)	Max 1%	
Insect Infestation	None	
Colour	Uniform normal, natural cream colour	
Kernel Appearance	Free from surface oil	
Flavour & Odour	No off flavours or odours	
Kernel Dust	Max 0.2%	
Foreign Material	None	
Loose Shell	Max 1 piece larger than 2mm per 100kg for style 0 to 4 and max 2 pieces per 100kg of kernel for other styles	
Impacted NIS	Max 1 piece larger than 2mm in 100kg of kernel	

PROPOSED INTERNATIONAL MACADAMIA SPECIFICATION (Raw Kernel)

Packaging		
Bulk Packing	Should be vacuum packed AND nitrogen flushed so that residual oxygen is less than 2%	
Bulk Packaging material	Water Vapour less than 0.1cc/m ² at 25C 75% RH and 1 atmosphere Oxygen less than 0.1cc/m ² at 25C 75% RH and 1 atmosphere	
Retail Packaging	Nitrogen flushed and residual oxygen is less than 2%	

Sizing		
Style 0	Greater than 20mm with min 95% wholes	See defintion of whole kernel
Style 1	16mm & 21mm with min 90% wholes	
Style S1	13mm to 17mm 95% wholes	
Style 2	Greater than 13mm with min 50% wholes and large pieces ranging in size from 13mm upwards.	
Style 3	Greater than 13mm with min 15% wholes	
Style 4L	Greater than 13mm with min 90% halves	
Style 4S	9-15mm with min 50% halves	
Style 5	8-13mm large chips	
Style 6	5-9mm chips and pieces	
Style 7	3-6 mm chips	
Style 8 (Meal)	Less than 4mm	

Definition of a whole kernel: Whole kernels are kernels which are not split or seperated into halves, with not more than 25% of the kernel missing provided that the kernel contour is not materially affected by the missing portion.