

TECHNICAL CERTIFICATE Nº ***NO***/**AÑO***

Avenatop S.A., Rut 76.035.224-1, located in Los Pehuenches S/N, Freire, Region La Araucanía-Chile, Certificate through the Quality Control Department, the following:

BATCH IDENTIFICATION ANALYZED			
Product	: ***PRODUCT***	Vessel	: ***VESSEL***
Lot Number	: ***LOTNUMBER***	Bags per-Lot	: ***BAGSPERLOT***
Production Date	: ***PRODUCTIONDATE***	Best Before	: ***BESTBEFORE***
Finished Process Code	: ***FINISHEDPROCESSCODE***		
Container Number	: ***CONTAINERNUMBER***		

PRODUCT DESCRIPTION	
Product	: Dehulled oat grain
Description	: Oat grain, cleaned, dehulled and stabilized
Allergenic material	: This product may contain gluten traces, which can cause allergic reactions
Heavy metals	: The content of heavy metals is below the limits allowed by the Codex Alimentarius

ORGANOLEPTICS CHARACTERISTICS	
Color	: Light brown
Odors and flavor	: Usual of toasted oats free of strange odors or flavors
Appearance	: Soft border and surface
Best before	: From its production date and under proper packing and storage conditions (Dry and cold place), its shelf life is ***SHELFLIFE*** months
Storage conditions	: Temperature between ***MINTEMPERATURE*** to ***MAXTEMPERATURE*** degrees and ***DEGREES***% of relative humidity. Environment free of biological or chemical contamination
Packing material	: Thermo laminated polypropylene bags

CHEMICAL AND PHYSICAL PARAMETERS						
TEST	RESULTS	SPECIFICATION	INDIA METHOD	INDIA FREQ	AVENATOP METHOD	AVENATOP FREQ
VARIETY	Supernova	As per specification list	—	—	n/a	Every lot
APPEARANCE	Normal	Comparable to reference	Sensory	Every lot	Sensory	Every lot
AROMA	Normal	Typical KDHO aroma, free from objectionable odours	Sensory	Every lot	Sensory	Every lot
MOISTURE	***MOISTURE***	10% max	AOAC 925.10 Halogen Balance	Every lot	AOAC 925.10 Halogen Balance	Every lot
TYROSINASE ACTIVITY	***TYROSINASEACTIVITY***	Negative	Catechol Oxidation	Every lot	Catechol Oxidation	Every lot
LIPASE ACTIVITY	Negative	Negative	Catechol Oxidation	Every lot	Catechol Oxidation	Every lot
SIEVE ANALYSIS THRU 1.7MM SCREEN (USBS Nº12)	***SIEVEANALYSIS***	3% max	IND SIEVET SSTM 27	Every lot	100gm pick test	Every lot
UNHULLED GROATS	***UNHULLEDGROATS***	5 max	100gm pick test	Every lot	100gm pick test	Every lot
HUSK	***HUSK***	5 max	100gm pick test	Every lot	100gm pick test	Every lot
SLIVERS	***SLIVERS***	5 max	100gm pick test	Every lot	100gm pick test	Every lot
BURT GROATS	***BURTGROATS***	3 max	100gm pick test	Every lot	100gm pick test	Every lot
DISCOLOURED GROATS	***DISCOLOUREDGROATS***	30 max	100gm pick test	Every lot	100gm pick test	Every lot
FOREIGN GRAIN (TOTAL)	***FOREIGNGRAIN***	20 max (Wheat, barley & other)	100gm pick test	Every lot	100gm pick test	Every lot
WEED SEEDS	***WEEDSEEDS***	1 max	100gm pick test	Every lot	100gm pick test	Every lot
FOREIGN MATERIAL	***FOREIGNMATERIAL***	Free from any objectionable & hazardous foreign material e.g wood & stones	100gm pick test	Every lot	100gm pick test	Every lot

MICROBIOLOGICAL PARAMETERS						
TEST	RESULTS	SPECIFICATION	INDIA METHOD	INDIA FREQ	AVENATOP METHOD	AVENATOP FREQ
STANDARD PLATE COUNT	***STANDARDPLATECOUNT***	< 10000CFU/gm	AOAC 990.12	Quarterly	AOAC 2015.13	Quarterly
YEAST & MOULD	***YEASTANDMOULD***	< 500CFU/gm	AOAC 995.21	Quarterly	AOAC 2014.05	Quarterly
<i>E. COLI</i>	***ECOLI***	< 3CFU/gm	AOAC 991.14	Quarterly	AOAC 991.14	Quarterly
<i>SALMONELLA SP</i>	***SALMONELLASP***	Absent/25gm	AOAC 967.25	Quarterly	ISO 6579	Quarterly
COLIFORM	***COLIFORM***	< 10MPN/gm	AOAC 991.14	Quarterly	AOAC 991.14	Quarterly
AFLATOXIN	***AFLATOXIN***	30mcg/1kg	AOAC 975.36 AOAC 999.07	Quarterly	USDA-GIPSA 2012-021	Once year

CHEMICAL PARAMETERS						
TEST	RESULTS	SPECIFICATION	INDIA METHOD	INDIA FREQ	AVENATOP METHOD	AVENATOP FREQ
NITROGEN	***NITROGEN***	1.8% min D.B.	AOAC 920.87	Every lot	n/a	Monthly
PROTEIN (DRY BASIS)	***PROTEIN***	11.25% min D.B.	AOAC 920.87	Every lot	ISP. PART- 711.02-173	Monthly
TOTAL ASH	***TOTALASH***	2% max D.B.	OAC 923.03	Every lot	AOAC 938.08 AOAC 940.26	Monthly
ACID INSOLUBLE ASH	***ACIDINSOLUBLEASH**	0.1% max D.B.	AOAC 923.03	Every lot	AOAC 938.08 AOAC 940.26 AOAC 945.46 AOAC 925.51 AOAC 930.30	Quarterly
ALCOHOLIC ACIDITY	***ALCOHOLICACIDITY**	See notes	MOMC&C*/8.6	Every lot	n/a	Quarterly
CRUDE FIBRE	***CRUDEFIBRE***	2% max D.B.	AOAC 962.09	Every lot	AOAC 962.09	Monthly
BETA GLUCAN	***BETAGLUCAN***	3.6% min	AOAC 995.16	Twice year	AOAC 995.16	Quarterly
TOTAL DIETARY FIBRE	***TOTALDIETARYFIBRE**	10% min	AOAC 991.43	Monthly	AOAC 2011.25	Monthly
TOTAL FAT	***TOTALFAT***	10.5% max	AOAC 922.06	Twice year	AOAC 2003.06	Monthly
SATURATED FAT	***SATURATEDFAT***	2% max	AOAC 996.06	Twice year	AOAC CE 1f-96	Monthly
CHOLESTEROL	***CHOLESTEROL***	3mg/100gm max	AOAC 994.10	Twice year	AOAC 994.10	Monthly
SUGARS	***SUGARS***	2% max	AOAC 982.14	Twice year	*	Monthly
SODIUM	***SODIUM***	20mg/100gm max	AOAC 976.25 AOAC 2011.14	Quarterly	AOAC 985.35	Twice year
IRON	***IRON***	2mg/100gm min	AOAC 999.11 AOAC 2011.14	Quarterly	AOAC 985.35	Twice year
MAGNESIUM	***MAGNESIUM***	85mg/100gm min	AOAC 985.35 AOAC 2011.14	Quarterly	AOAC 985.35	Twice year
ZINC	***ZINC***	1.5mg/100gm min	AOAC 999.11 AOAC 2011.14	Quarterly	AOAC 985.35	Twice year
URIC ACID	***URICACID***	100mcg/1kg	AOAC OMA 969.46	Quarterly	n/a	n/a

Notes:

1 Alcohol Acidity (with 90% alcohol) – shall be equivalent to not more than [8.0] ml NaOH per 100gm of dried substance.

* Based in: James Ceirwyn S. Analytical Chemistry of Foods *"DNS colorimetric determination of available carbohydrates in foods"*

Francisco Martínez

Manager of Operations
Avenatop S.A.

Karen Poblete B.

Quality Manager
Agrotop Company

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