

ALLERGEN RESIDUE DETECTION

ELISA METHODS (QUANTITATIVE)

ALLERGEN	EXPRESSED AS	RANGE OF QUANTIFICATION	LEAD TIME**
*Total Milk	Total Milk	2.5 – 25.0 ppm	5 - 7
Whey	β-Lactoglobulin	0.5 - 13.5 ppm	5 - 7
Casein	Casein	0.5 - 13.5 ppm	10 - 14
*Egg	Egg	2.5 – 25 ppm	5 - 7
Egg	Egg	0.5 – 13.5 ppm	10 - 14
Lysozyme	Lysozyme	0.05 – 4.0 ppm	10 - 14
*Soya	Soya	2.5 - 25.0 ppm	5 - 7
Crustacean	Crustacean	20 - 160 ppm	10 - 14
*Gluten	Gluten	5 - 80 ppm	5 - 7
Hydrolysed Gluten	Hydrolysed Gluten	10 – 270 ppm	10 - 14
Peanut	Peanut	2.5 – 20 ppm	5 - 7
Almond	Almond	2.5 – 20 ppm	5 - 7
Macadamia nut	Macadamia nut	1.0 - 27.0 ppm	10 - 14
Mustard	Mustard	0.5 – 13.5 ppm mustard	10 - 14
Sesame seed	Sesame	2.5 – 20 ppm sesame	10 - 14

PCR METHODS (QUALITATIVE)

ALLERGEN	EXPRESSED AS	LIMIT OF DETECTION	LEAD TIME**
Crustacean	Crustacean	<0.01% crustacean DNA	10 - 14
Wheat	Wheat	< 50 pg genomic DNA	10 - 14
Rye	Rye	< 50 pg rye DNA	10 - 14
*Fish	Fish	0.4 ppm fish DNA	10 - 14
Cashew nut	Cashew	0.4 ppm cashew DNA	10 - 14
Hazelnut	Hazelnut	1.0 ppm Hazelnut DNA	10 - 14
Pecan nut	Pecan nut	<10 pg genomic DNA	10 - 14
Pistachio nut	Pistachio nut	To be determined	10 - 14
Walnut	Walnut	1.0 ppm walnut DNA	10 – 14
Celery	Celery	0.4 ppm celery DNA	10 - 14
Mustard	Mustard	0.4 ppm mustard DNA	10 - 14

All above methods can be performed on surface swabs and air plates. It is important to note that all swab results are qualitative regardless of the method and that the lab is not accredited for any swab analyses.

QUALITATIVE ANIMAL SPECIES DETECTION

Species-specific - detection in mixed ingredient commodities (detection of adulteration)

“Please confirm that the sample is not contaminated / adulterated with an undeclared species”

ANIMAL SPECIES	METHOD	SPECIFICITY	LIMIT OF DETECTION	LEAD TIME**
Fish-specific: Teleosts (bony fish) species	PCR	Fish-specific DNA	<20 ppm fish DNA	10 - 14
Crustacean-specific detection: prawn, shrimp, crab, lobster and crayfish	PCR	Crustacean-specific DNA	<0.01% crustacean DNA	10 - 14
DNA-based screening for 24 animal species: Cattle (Beef, Bison) Water buffalo, Pork, Sheep, Goat, Equine (Horse, Donkey), Hare, Rabbit, Chicken, Turkey, Goose, Mallard Duck, Muscovy Duck, Pheasant, Ostrich, Kangaroo, Springbok, Fallow Deer, Red Deer, Canine, Cat, Camel, Reindeer and Roe Deer	PCR-microarray	Animal specific DNA	Not applicable	10 - 14

ANIMAL SPECIES IDENTIFICATION

DNA sequencing for species identification in single ingredient commodities

ANIMAL SPECIES	METHOD	LEAD TIME**
Fish species	DNA sequencing	10 - 14
Crustacean species	DNA sequencing	10 - 14
Bovine (beef) species	DNA sequencing	10 - 14
Porcine (pork) species	DNA sequencing	10 - 14
Ovine (sheep) species identification	DNA sequencing	10 - 14
Game species: kudu, Impala, Springbok, Blesbok, Bontebok, duiker etc.	DNA sequencing	10 - 14
Goat species	DNA sequencing	10 - 14
Chicken species	DNA sequencing	10 - 14
Turkey species	DNA sequencing	10 - 14
Ostrich species	DNA sequencing	10 - 14
Duck species	DNA sequencing	10 - 14
Crocodile species	DNA sequencing	10 - 14
Donkey species	DNA sequencing	10 - 14
Horse species	DNA sequencing	10 - 14
Buffalo species: African buffalo (<i>Syncerus Caffer</i>) Water buffalo (<i>Bubalus bubalis</i>)	DNA sequencing	10 - 14
Rabbit species	DNA sequencing	10 - 14

* SANAS accredited methods ** Working days

MICROSCOPIC REVIEW OF SPICES AND HERBS

METHOD	EXAMPLE	LEAD TIME**
Review of Herbs & Spices for purity and adulterants by means of light microscopy	"Please confirm that the dried oregano sample is not contaminated / adulterated with an undeclared material and advise which material it is possibly adulterated with"	10 – 14

FACTS KITS

FACTS supply below kits for allergen control validation purposes. The intent is that samples are submitted to the FACTS laboratory for analyses by means of one of the above stated methods.

KIT	PURPOSE
FACTS Environmental Surface swab kit	The kit provides all the materials required for the collection of a surface swab samples, for the detection of allergenic residues by means of ELISA or PCR.
FACTS Air plates	The passive aerial allergen contamination estimation kit provides all the materials required for the collection of environmental dust samples, from which the content of allergenic cross contamination can be estimated.

RAPID KITS

Various rapid systems are available for onsite screening of rinse water, surface swabs, ingredients and finished products. It is important to note that when using a rapid kit for ingredient and product testing it is important to ensure that the system is validated for the specific matrix. *FACTS offer sample matrix validation services.*

	SYSTEM		LIMIT OF DETECTION	UNIT SIZE
SWABS	Clean-Trace™ Surface Protein (Allergen) <i>Heating block required</i>	3M™	3µg protein	60 swabs
	Clean-Trace™ Surface Protein Plus	3M™	50µg protein	100 swabs
LATERAL FLOW DEVICE	Gluten R5 FlowThrough™	Bio-Check	5 – 10ppm	5 tests
	Raw COW FlowThrough™	Bio-Check	1% cut-off	5 tests
	Raw HORSE FlowThrough™	Bio-Check	1% cut-off	5 tests
	Raw PIG FlowThrough™	Bio-Check	1% cut-off	5 tests
	Raw SHEEP FlowThrough™	Bio-Check	1% cut-off	5 tests
	Raw POULTRY FlowThrough™	Bio-Check	1% cut-off	5 tests
	GlutenTox®•Pro	Biomedal	5ppm	25 tests
	Egg Reveal 3-D	Neogen	5 ppm / 10µg/100 cm ²	10 tests
	Soy Reveal 3-D	Neogen	5 ppm / 2µg/100 cm ²	10 tests
	Total Milk Reveal 3-D	Neogen	5 ppm	10 tests
	Peanut Reveal 3-D	Neogen	5 ppm / 1µg/100 cm ²	10 tests
	Gluten Reveal 3-D	Neogen	5–10 ppm / 80µg/100 cm ²	10 tests
	Crustacean Reveal 3-D	Neogen	5–10 ppm / 40µg/100 cm ²	10 tests
	Almond Reveal 3-D	Neogen	5 ppm / 1µg/100cm ²	10 tests
	Mustard Reveal 3-D	Neogen	5 ppm / 2µg/100 cm ²	10 tests
Sesame Reveal 3-D	Neogen	5 ppm	10 tests	
Hazelnut Reveal 3-D	Neogen	5-10 ppm / 10µg/100 cm ²	10 tests	

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