

Toxicology Laboratory - Testing and Specimen Information

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*Best diagnostic sample
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Test Code	Test Name	Preferred specimen and sample amount	Minimum sample amount**	Container required	Shipping conditions	Turn around time (business days)	Remarks QLV = Qual. Validated QNV = Quant. Validated QLU = Qual. Unvalidated QNU = Quant. Unvalidated	In-state (\$) Fees are subject to change without notice	Out-of-state (\$) Fees are subject to change without notice	Technique
8001	Alkaloid Screen	*50g GI contents 20 mL urine 25 g plant	10 g 10 mL 10 g	sealed container	frozen	3-5 days	Screen includes: anabasine, atropine, coniine, deltaline, nicotine, scopolamine, sparteine, taxus. QLV	78.89	157.84	GC/MS
8053	Amanitin	*5 mL urine 25 g GI content 10 g mushroom 5 ml serum 5g kidney 5g liver	2 mL 2 g 2 g 1 g 2 g 2 g	sealed container dry paper bag. (mushroom)	frozen	5-7 days	Qualitative test for the toxin found in Amanita spp. of mushrooms. QLV	86.25	172.50	LC-MS/MS
8060	Anatoxin-A	50g GI contents 500 mL water	5 g 5 mL	sealed container	frozen	5-7 days	For microscopic algae identification, call Lab. QNV	86.25	172.50	LC-MS/MS/MS
8005	Anticoagulant Screen and confirmation	*20g liver *5 mL serum 5 mL blood (RTT) 20 g bait	5 g 2 mL 2 mL 1 g	sealed container	frozen (not blood)	5-7 days	Screen includes: brodifacoum, bromadiolone, chlorophacinone coumachlor, difethialone, diphacinone warfarin. Confirmation analysis included. Test run on Mondays and Thursdays. QNV	100.45	157.84	HPLC/DAD and fluorescence or LC-MS/MS
8007	Arsenic	*10g liver *10 mL urine 10 g kidney 5 mL blood 25 g GI contents 25 g source material 50 mL water	2 g 2 mL 2 g 1 mL 5 g 2 g 10 mL	Edta tube for blood non-metal container for all others	frozen (not blood)	3-5 days	See also Heavy Metal Screen (8071). Urine is of greater diagnostic value than blood in potentially chronic exposures. If sending kidney, cortex is preferred. QNV	43.01	57.39	ICP/AES
8078	Avicides	*20g GI contents 20 g source material	2 g	sealed container	frozen	3-5 days	Avitrol and Starlicide QLV	57.39	64.63	LC-MS/MS
8024	Beta-lactam Screen	50 mL milk	10 mL	plastic container	frozen	3-5 days	Contact tox lab prior to shipping. Freeze promptly and ship on dry ice. Includes: amoxicillin, ampicillin, ceftiofur, cephalixin, cloxacillin, penicillin G, penicillin V. QNV	199.24	332.06	LC-MS/MS
8028	Bromethalin	*10 g fat *20 g brain 20 g Liver 10 g bait	5 g	sealed container	frozen	5 days	LC-MS/MS test with a method detection limit of 50 ppb. QLV	91.31	172.21	LC-MS/MS

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8015	Bromide	1-2 mL serum	0.2 mL	sealed container	frozen	3 days	Separate serum before shipping. QNV	37.32	54.57	IC/CD
8017	Cadmium	*10 g liver 10 g kidney 4 mL blood 25 g source material 50 mL water	1 g 1 g 1 mL 5 g 10 mL	non-metal container	frozen (not blood)	3-5 days	If sending kidney, cortex is preferred. QNV	35.88	50.26	ICP/AES or AA
8019	Carbamate Screen	*100 g GI contents *100 g source mat. *100 g feed 50 g liver 10 mL blood	1 g 0.5 g 1 g 1 g 0.5 mL		frozen not blood	3-5 days	Cholinesterase should also be run on blood or brain (8025). QNV	78.89	157.84	HPLC/PC with fluorescence
8023	Chloride	*2 mL serum 50 mL water	1 mL 10 mL	sealed container	frozen	3-5 days	Separate serum before shipping. QNV	37.32	54.57	IC/CD
8025	Cholinesterase	*Brain (right or left half or entire brain if small) 0.5-1 mL blood	half brain 0.05 mL	sealed container EDTA tube for blood	brain-frozen blood-cool	1 day	STAT analysis available; half a brain (mid-sagittal) is necessary for data interpretation. QNV	28.75	35.88	Modified Ellman Method
8027	Chromium	10 g liver 10 g kidney 4 mL blood 25 g source material 50 mL water	1 g 1 g 1 mL 5 g 10 mL	EDTA tube for blood; non-Metal container for others	frozen (not blood)	3-5 days	If sending kidney, cortex is preferred. See also Heavy Metal Screen (8071). QNV	35.88	50.26	ICP/AES or AA
8039	Cyanide - distillation	*25 g muscle 25 g liver 10 mL blood 100 g feed 500 mL water	2 g 2 g 2 mL 10 g 100 mL	EDTA tube for blood	frozen in airtight container	3-5 days	Muscle, liver, feed, blood and water must be frozen in an airtight container as soon as possible. All samples must be frozen until analyzed. QNV	50.26	86.14	Colorimetric
8037	Cyanide - qualitative	50 g plant material 50 g GI contents	5 g 5 g	jar or whirl pak	frozen	3 days	Samples must be frozen in airtight container as soon as possible. QNV	28.75	43.01	Cyantesmo paper
8012	Dicumarol	20g feed	20 g	sealed container	frozen	5-7 days	Also see Anticoagulant Screen (8005). QNV	50.26	107.64	HPLC/DAD and fluorescence or LC-MS/MS
8036	Domoic Acid	5 ml urine 5 mL serum	2 mL 2 mL	sealed container	frozen	3-5 days	 QNV	132.83	265.65	LC-MS/MS
8006	Drug Screen-Livestock	20 ml urine	20 ml	plastic container	frozen	1-2 days	Call tox lab prior to shipping. This is a special request and is not offered routinely. QLV	115.00	230.00	Various Methods
11367	Illicit Drug Screen-urine	10 mL urine	2 mL	plastic container	frozen	5-7 days	Call tox lab prior to shipping. QLV	Variable	Variable	Send Out
10299	Fat (Percent)	50 g tissue 50 g feed	2 g 2 g	plastic container	frozen	5-7 days	 QNV	11.50	23.00	Analytical Balance
8063	Fluoride	10 mL urine 50 g feed 10 mL water 2-5 mL serum	1 mL 10 g 1 mL 1 mL	non-metal container	frozen	5 days	 QNV	28.75	43.01	Ion specific electrode

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8147	Gallotannin (oak)	50 g GI content 5 mL urine 50 g plant material	5 g 1 mL 5 g	sealed container	frozen	5-10 days	Urine analyzed for pyrogallol. Plant/GI cont. analyzed for gallic acid QNV	35.88	71.76	GC/MS
8064	GC/MS Screen	20 mL fluid 50 g tissue 50 g feed 50 g source material	5 mL 5 g 5 g 5 g	sealed container	frozen	3-7 days	Sample preparation determined by chemists. Results of GC-MS screen compared to various libraries of spectra for compound identification. QNV	115.00	230.00	GC/MS
8061	Glycols	*10 g GI content *10 mL urine whole kidney 10 mL serum 50 g source material	1 g 0.15 mL 5 g 1 g 0.1 g	sealed container	frozen	3-7 days	Specify ethylene or propylene glycol. Separate serum before shipping. QNV	50.26	86.14	GC/MS
8069	Gossypol - feed	200 g feed	10 g	sealed container	frozen	3-5 days	Total and free gossypol will be determined spectrophotometrically QNV	50.26	143.46	Spectrophotometer
8044	Gossypol - plasma or serum	5 mL serum 5 mL plasma	2 mL 2 mL	sealed container wrapped in aluminum foil	frozen	3-5 days	(+) and (-) gossypol will be determined. Lyophilize sample before submission if possible. Minimize contact with light and keep frozen. QNV	86.14	172.21	HPLC/UV
10366	Grayanotoxins I & III	*50 g GI contents 10 g plant/feed 50 g feces	3 g 0.5 g 3 g	sealed container	frozen- (not plant)	5-7 days	Prefer source material, feed or GI contents. Includes: rhododendron, azalea, Mountain laurel and Japanese pieris toxins QLV	86.14	143.46	LC-MS/MS
8051	Heavy Metals Extended	25 g liver 25 g kidney 100 mL water 50 g GI contents 50 g source material	2 g 2 g 20 mL 10 g 10 g	non-metal container	frozen (not blood)	n/a	Call tox lab for availability. This is a special analytical request. Test available for: As, Ba, Be, Cd, Co, Cr, Cu, Fe, Hg, Mn, Mo, Ni, Pb, Zn, Tl, V. QNV	50.26	64.63	ICP/AES or AA
8071	Heavy Metal Screen	10 g liver 10 g kidney 50 g source material 50 g feed 50 g feces 100 mL water	2 g 2 g 10 g 10 g 10 g 20 mL	non-metal container	frozen	3-5 days	Includes: As, Cd, Cu, Fe, Hg, Mn, Mo, Pb, Zn For blood, see each specific element and trace element screen. If sending kidney, cortex is preferred. QNV	28.75	43.01	ICP/AES or AA
10306	Heavy Metal Screen - Dry Weight	<1 g* liver 50 g source material 50 g feed	*samples larger than 1g will be run by 8071 10 g 10 g	non-metal container	frozen	3-5 days	Includes: As, Cd, Cu, Fe, Hg, Mn, Mo, Pb, Zn For blood, see each specific element and trace element screen. If sending kidney, cortex is preferred. Results reported based on dry weight of sample QNV	28.75	43.01	ICP/AES or AA
10308	Inorganic Compound by Request			Call lab	Call lab	variable	Special analytical service. Call tox lab for prices and samples needed. Additional costs may apply.	115.00	230.00	Variable
8166	Iodide	20 mL milk 50 g soil 50 g source material 20 mL water	5 mL 10 g 10 g 5 mL	sterile plastic container	cool	n/a	Measurement of soluble iodide only QNV	28.75	50.26	Ion specific electrode

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8075	Ionophore Screen	*50 g feed 50 g rumen cont. 50 g stom. cont. 50 g GI contents	20 g 20 g 20 g 50 g	sealed container or foil wrap	frozen	3-5 days	Includes: monensin, salinomycin, narasin, and lasalocid. Please, provide feed additive information, if available. Representative sampling essential QNV	57.39	86.14	LC-MS/MS
8047	Ionophore Screen Extended	*50 g feed	20 g	sealed container or foil wrap	frozen	3-5 days	Includes: monensin, salinomycin, narasin, laidlomycin, lasalocid, and nigericin. Please, provide feed additive information, if available. Representative sampling essential QNU	101.20	151.80	LC-MS/MS
8083	Lead - blood	1 mL whole blood	0.2 mL	EDTA or heparin tube	cool	1 day	50 microliters is absolute minimum sample STAT analysis available. Serum or plasma are not appropriate for testing. QNV	37.32	54.57	AA
8081	Lead - tissue/other	10 g liver 10 g kidney 10 ml water 25 g bone 50 g source material	1 g 1 g 1 mL 2 g 2 g	non-metal container	frozen	3-5 days	See also Heavy Metal Screen (8071) If sending kidney, cortex is preferred. QNV	35.88	50.26	ICP/AES or AA
8052	Macrolide Endectocide Screen	*20 g brain 5 g serum	2 g 2 g	sealed container	frozen	5-7 days	A quantitative test for the commonly used macrolide endectocides: ivermectin, moxidectin, selamectin and abamectin. QNV	86.25	172.50	LC-MS/MS
8087	Mercury	5 mL blood 10 g liver 10 g kidney 100 mL water 5 mL urine 50 g source material	1 mL 1 g 1 g 20 mL 1 mL 5 g	EDTA tube for blood; non-metal container for others	frozen (not blood)	3-5 days	See also Heavy Metal Screen (8071) for tissues. If sending kidney, cortex is preferred. QNV	43.01	57.39	ICP/AES
8089	Metaldehyde	*50 g stom. contents 50 g source material 5 mL urine 2 mL serum	1 g 1 g 2 mL 1 mL	sealed container	frozen	3 days	Separate serum before shipping. QNV	46.00	86.14	GC/MS
8040	Method development	Call tox laboratory for specific information and prices before shipping						Variable	Variable	
8098	Microcystins	50g GI contents 500 mL water	5 g 5 mL	sealed container	frozen	5-7 days	For microscopic algae identification, call Lab. Includes: microcystin LR, YR, RR and LA. QNV	115.00	230.00	LC-MS/MS
8038	Moisture (percent)	*10 g feed *10 g soil *10 g plant 5 ml blood 5 g tissue	5 g 5 g 5 g 1 ml 1 g	non-metal container	frozen blood-cool	Variable	QNV	28.75	43.01	Lyophilization or oven
8056	Mycotoxin-Aflatoxin B1	500 g feed	60 g	sealed container	frozen	3-5 days	Complete history required. Representative sampling is essential. QLV	50.26	86.14	LC-MS/MS
8094	Mycotoxin-Aflatoxin M1	40 mL milk	10 mL	sealed container	frozen	3-5 days	Complete history required. Representative sampling is essential. QLV	50.26	86.14	LC-MS/MS
8066	Mycotoxin - Fumonisin B1	200 g feed	10 g	sealed container	frozen	5-7 days	Complete history is required. Representative sampling is essential. QNV	50.26	86.14	LC-MS/MS

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8055	Mycotoxin - Ochratoxin	500 g feed	50 g	sealed container	frozen	3-5 days	Complete history is required. Representative sampling is essential. QLV	50.26	86.14	LC-MS/MS
8054	Mycotoxins - Penitrem A Roquefortine C	50 g source material 5 mL serum 5 mL urine 5 g GI contents	5 g 1 mL 1 mL 1 g	sealed container	frozen	3 -5 days	Complete history is required. Representative sampling is essential. QLV	50.26	86.14	LC-MS/MS
8096	Mycotoxins - Tricothecenes (DAS, T2)	500 g feed	50 g	sealed container	frozen	3-5 days	Complete history is required. Representative sampling is essential. QNV	50.26	86.14	LC-MS/MS or GC/MS
8059	Mycotoxin-DON (Vomitoxin)	500 g feed	50 g	sealed container	frozen	3-5 days	Complete history is required. Representative sampling is essential. QNV	50.26	86.14	LC-MS/MS or GC/MS
8058	Mycotoxin - Zearalenone	500 g feed	50 g	sealed container	frozen	3-5 days	Complete history is required. Representative sampling is essential. QLV	50.26	86.14	LC-MS/MS
8101	Nitrate/Nitrite	2 mL serum whole eye 50 g feed 100 mL water	1 mL 10 g 1.0 mL	sealed container	frozen	1-3 days	Includes: Nitrite and Nitrate. STAT analysis available. Separate serum prior to shipping. QNV	10.75	21.51	Colorimetric test strips
8103	Nitrate/Nitrite confirmation	2 mL serum whole eye 50 g feed 100 mL water	1 mL 2.0 g 1.0 mL	sealed container	frozen	1-3 days	This test is only run after completion of 8101. QNV	21.51	35.88	IC/CD
8090	NSAID screen	*40 mL urine 10 mL serum	1 mL 1 mL	sealed container	frozen	3-5 days	Non-steroidal anti-inflammatory drugs: flunixin, naproxen, phenylbutazone, ketoprofen, meclofenamic acid, oxyphenbutazone. QNV	50.26	86.14	GC/MS
8002	Oleander	*50 g GI contents 10 g plant or feed 10 mL serum 50 g feces 10 mL urine 20 g liver	5 g 0.5 g 1 mL 5 g 1 mL 10 g	sealed container	frozen	3-5 days	For STAT testing call tox lab prior to shipping. QLV	43.01	71.76	LC-MS/MS
8175	Organic Compound by Request			call lab	call lab	variable	Special analytical service. Call tox lab for prices and samples needed. Additional costs may apply.	115.00	230.00	Variable
8109	Organochlorine Insecticide Screen	*50 g liver *50 g fat *50 g brain 100 g source material 100 g GI contents 10 mL blood 100 mL milk	1 g 1 g 1 g 1 g 1 g 0.5 mL 1 mL	sealed container avoid plastic	frozen (not blood)	3-5 days	20 OC's with reporting limits between 50 and 100 ppb. QNV	78.89	157.84	GC/ECD
10345	Organochlorine Insecticide Screen	*2 mL serum *5 g adipose	1 mL 1 g	sealed container avoid plastic	frozen (not blood)	call lab	20 OC's with reporting limits between 5 and 10 ppb. QNV	150.00	300.00	GC/MSD

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8113	Organophosphorus Insecticide Screen	*100g GI contents *100 g source mat. *100 g feed 50 g liver 10 mL blood	1 g 0.1 g 0.5 g 1 g 0.5 mL	sealed container avoid plastic	frozen (not blood)	3-5 days	Cholinesterase should also be run on blood or brain (test code 8025). QNV	78.89	157.84	GC/FPD
8117	Oxalate	1 plant 50 g forage material 50 g kidney	5 g 5 g	paper bag or wrap for plants	dry (plants) frozen (kidney)	n/a	Plants should also be submitted for a plant ID (8127). QNU	28.75	35.88	IC/CD
8120	Paraquat - tissue	100 g source material 100 g lung 50 g GI contents	5 g 10 g 5 g	plastic bag, avoid glass	frozen	3-5 days	 QLV	64.63	114.77	LC-MS/MS
8119	Paraquat - urine/sera	50 mL urine 10 mL sera	2 mL 2 mL	sealed container avoid glass	frozen	3-5 days	 QNV	50.26	86.14	LC-MS/MS
8129	PCB Screen (Polychlorinated biphenyl)	*50 g liver *50 g fat *50 g brain 100 g GI contents 10 mL blood 100 g source material 100 mL milk	1 g 1 g 1 g 1 g 0.5 mL 1 g 1 mL	sealed container avoid plastic	frozen (not blood)	5-7 days	Confirmation analysis included. Aroclors: 1016, 1221, 1232, 1242, 1248, 1254, 1260, and 1262. QNV	78.89	157.84	GC/ECD followed by GC/MS
8129	PCB Congeners (Polychlorinated biphenyl)	*2 mL serum *5 g adipose	1 mL 1 g	sealed container avoid plastic	frozen (not blood)	call lab	Quantitative analysis of Congeners 77, 81, 105, 114, 118, 123, 126, 156, 157, 167, 169, 189 and sums of tetra-, penta-, hexa-, hepta-, octa-, limits from 1 - 5 ppb. QNV	150.00	300.00	GC/MSD
8045	Perchlorate	40 mL milk 40 mL water 10 g feed	10 mL 10 mL 10 g	plastic	frozen	3-5 days	Freeze promptly. Ship on ice. QNV	158.13	221.38	LC-MS/MS
8168	pH	10-25 mL any fluid 100 g GI contents 100 g feed 100 g soil	5 mL 20 g 20 g 20 g	sealed container	frozen	1 day	 QNV	7.19	7.19	pH meter
8127	Plant ID	plant		call tox	do not freeze	n/a	Submit complete plant (include roots). Do not freeze. Do not pack in plastic bags. Include flowers and seeds if possible. call tox lab for shipping instructions. QLU	17.31	28.75	Specialists
8070	Praziquantel	50 mL water	10 mL	sealed container	cool or frozen	3-5 days	 QNV	115.00	230.00	LC/MS
8016	Pyrethrin/Pyrethroid Screen	*100g GI contents *100 g source mat. *100 g feed 50 g liver 10 mL serum 10 mL blood	5 g 1 g 5 g 1 g 1 mL 1 mL	sealed container avoid plastic	frozen (not blood)	3-5 days	Screen includes allethrin, bifenthrin, cyfluthrin, cypermethrin, fenvalerate, permethrin, pyrethrins. Call lab regarding others. QNV	78.89	157.84	GC/MS
10383	Pyrrrolizidine Alkaloids	*50g GI contents 25 g plant or source	10 g 10 g	sealed	frozen	3-5 days	Call lab for test information. QLV	78.89	157.84	GC/MS
8138	Selenium - blood	5 mL blood	1 mL	EDTA tube	cool	3-5 days	Serum is not appropriate for selenium analysis. QNV	14.38	28.75	ICP/AES

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8137	Selenium - tissue	*10 g liver 50 g GI contents 50 g feed 100 mL water	1 g 5 g 5 g 20 mL	non-metal container	frozen	3-5 days		21.51	28.75	ICP/AES
10369	Selenium - Dry Weight	<1 g* liver 50 g GI contents 50 g feed	*samples larger than 1g will be run by 8137 5 g 5 g	non-metal container	frozen	3-5 days	Results reported based on the dry weight of the sample.	21.51	28.75	ICP/AES
8141	Salt Screen	10 g brain 1 mL CSF 100 mL water Eye (vitreous) 50 g source material 50 g feed/other	1 g 0.5 mL 20 mL 5 g 5 g	clean, non-metal container	frozen	3-5 days	Includes: P, S, Mg, Na, Ca, K	28.75	43.01	ICP/AES
10368	Salt Screen - Dry Weight	10 g brain 1 mL CSF Eye (vitreous) 50 g source material 50 g feed/other	1 g 0.5 mL 5 g 5 g	clean, non-metal container	frozen	3-5 days	Includes: P, S, Mg, Na, Ca, K Results reported based on the dry weight of the sample.	28.75	43.01	ICP/AES
8072	Strophanthidin	10 g GI contents 10 g Plant material	1 g 1 g	sealed container	frozen	5 days	Marker for Adonis exposure.	115.00	230.00	LC/MS
8143	Strychnine	*20 g GI contents 10 mL urine 20 g bait 3 mL serum 25 g liver	0.5 g 1 mL 0.5 g 0.5 mL 5 g	sealed container	frozen	3-5 days	Separate serum before shipping.	46.00	71.76	GC/MS
8145	Sulfate	2 mL serum 50 mL water	1.0 mL 1.0 mL	sealed container	frozen	3-5 days	Separate serum before shipping.	28.75	43.01	IC/CD
8149	Thallium	10 mL urine 10 g liver/kidney 50 mL water 5 mL blood	1 mL 1 g 10 mL 1 mL	EDTA tube for blood	frozen (not blood)	5 days		43.01	57.39	ICP/AES or AA
8105	Trace Element Screen	1-2 mL serum 1-2 mL plasma	0.5 mL 0.5 mL	Royal Blue top tube or heparin tube	frozen	3-5 days	Screen includes Cu, Zn, Fe, Mg, Ca, Na, K and P. Separate serum or plasma prior to shipping. If interested in Zn avoid any contact w/rubber during collection or shipping (use RBTT).	14.38	35.88	ICP/AES
9772	Urea/NPN	100 g GI contents 100 g feed	10 g 10 g	plastic container	freeze immediately.	5-7 days	All samples except for dry feeds must be submitted frozen			Send Out
8079	Vitamin A	*10 g liver 5 mL serum 5 mL plasma 25 g feed	1 g 0.5 mL 0.5 mL 3.0 g	sealed container wrapped in foil	frozen (not feed)	3-5 days	Serum and plasma must be separated prior to shipping. Minimize contact w/light and keep cool at all times. Wrap in foil. Allow more time for feed analysis.	31.63	50.26	HPLC/with Fluorescence

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8000	Vitamin E	*10 g liver 5 mL serum 5 mL plasma 10 g feed	1 g 0.5 mL 0.5 mL 3 g	sealed container wrapped in foil	frozen (not feed)	3-5 days	Serum and plasma must be separated prior to shipping. Minimize contact w/light and keep cool at all times. Wrap in foil. Allow more time for feed analysis QNV	31.63	50.26	HPLC/with Fluorescence
8161	Zinc/Aluminum Phosphide	*20 g GI contents 20 g feed 20g bait/source mat	1 g 1 g 1 g	tightly sealed container	frozen	3-5 days	 QLV	50.26	86.14	GC/MS

Additional testing can be arranged by special request. Please contact the CAHFS Toxicology Laboratory at (530)752-6322 for more details.