

Occurrence of ergot and ergot alkaloids in western Canadian wheat and other cereals

Sheryl A. Tittlemier*, Dainna Drul, Mike Roscoe, Twylla McKendry

Grain Research Laboratory, Canadian Grain Commission, Winnipeg, Manitoba, Canada

*Corresponding author: Sheryl Tittlemier. Email: sheryl.tittlemier@grainscanada.gc.ca;
Phone: 1-204-984-3456, Fax: 1-204-983-0724

Supplementary Table 1. List of ergot alkaloids analyzed by the liquid chromatography-tandem mass spectrometry method.

Analyte name	Quantitation transition (m/z)	Qualification transition (m/z)
ergonovine	326.032 → 207.984	326.032 → 223.137
ergosine	548.351 → 208.020	548.351 → 223.105
ergotamine	582.351 → 208.084	582.351 → 223.106
ergocornine	562.351 → 208.024	562.351 → 223.111
ergocryptine	576.415 → 208.092	576.415 → 223.115
ergocristine	610.415 → 208.029	610.415 → 223.115
ergosinine	548.351 → 223.105	548.351 → 277.067
ergocorninine	562.415 → 223.174	562.415 → 305.155
ergocryptinine	576.415 → 223.179	576.415 → 305.100
ergocristinine	610.542 → 223.178	610.542 → 325.182
dihydroergotamine*	584.351 → 168.022	584.351 → 270.191

*internal standard

Supplementary Table 2. Summary of Ergot Alkaloid Method Validation Results.
Mean $\pm$ standard deviation (n=7) percent recoveries are listed for fortified wheat
and rye.

	Wheat				Rye	
	Low ^a	Med ^b Day 1	Med Day 2	High ^c	Med Day 1	Med Day 2
Ergonovine	98 $\pm$ 2	65 $\pm$ 4	67 $\pm$ 3	76 $\pm$ 1	71 $\pm$ 2	65 $\pm$ 3
Ergosine	82 $\pm$ 4	73 $\pm$ 3	75 $\pm$ 3	72 $\pm$ 1	78 $\pm$ 2	69 $\pm$ 2
Ergotamine	96 $\pm$ 3	83 $\pm$ 4	85 $\pm$ 3	84 $\pm$ 2	91 $\pm$ 2	87 $\pm$ 2
Ergocornine	102 $\pm$ 3	75 $\pm$ 4	77 $\pm$ 3	77 $\pm$ 2	86 $\pm$ 2	78 $\pm$ 3
Ergocryptine	110 $\pm$ 2	80 $\pm$ 3	81 $\pm$ 3	80 $\pm$ 2	90 $\pm$ 2	81 $\pm$ 3
Ergocristine	114 $\pm$ 3	79 $\pm$ 4	82 $\pm$ 3	79 $\pm$ 6	99 $\pm$ 4	91 $\pm$ 4
Ergosinine			71 $\pm$ 4		92 $\pm$ 3	70 $\pm$ 3
Ergocorninine			81 $\pm$ 4		98 $\pm$ 4	83 $\pm$ 4
Ergocryptinine			87 $\pm$ 5		106 $\pm$ 6	92 $\pm$ 10
Ergocristinine			92 $\pm$ 4		120 $\pm$ 8	103 $\pm$ 15

^afortification concentrations were 2 μ g/kg ergonovine, and 10 μ g/kg for all other analytes

^bfortification concentrations were 41 μ g/kg ergonovine, 200 μ g/kg for all other analytes

^cfortification concentrations were 407 μ g/kg ergonovine, 2000 μ g/kg for all other analytes

Supplementary Figure 1. Total concentrations of 10 ergot alkaloids quantified in a sample of rye over 10 months.

