Analyses of infected wheat oats and rye before and after separation. Done for Felleskjopet AL, Norway in 2011

The harvesting season 2011 was difficult in Norway. The mycotoxin DON from Fusarium Graminearum infection were so high that several granaries could not be used. Dag Saether made analyses for the main grain-dealer in Norway: Felleskjøpet AL, to see if separation of the granary could solve the problem and how much grain that had to be removed to reach acceptable levels.

The separation tests show that in some cases only a small part of grain had to be removed before reaching legal standards. It is also interesting to see how separation effected amylase activity, hectoliter weight even level of protein.

TESTS done by DAG SAETER

Wheat, sample C1				**Gram**	**Percent**
Original material	Water	14,8	Fraction 1	1777	15,82
	Weigth per hectoliter.	78,8	Fraction 2	4824	42,95
	Protein	13,5	Fraction 3	3034	27,01
	Amylase activity	241	Fraction 4	1597	14,22
	DON	3600	SUM	11232	100,00
Eurofins analyses:					
Fraction 1	Weigth per hectoliter.	81			
	Protein	13,5			
	Amylase activity	397			
	DON	509			
Fraction 2	Weigth per hectoliter.	79			
	Protein	13,5			
	Amylase activity	287			
	DON	880			
Fraction 3	Weigth per hectoliter	76			
	Protein	13,4			
	Amylase activity	229			
	DON	3002			
Fraction 4	Weigth per hectoliter.	68			
	Protein	13,4			
	Amylase activity	117			
	DON	>5000			

Wheat, sample C3				**Gram**	**Prosent**
Original material	Water	14,5	Fraction 1	2753	22,47
	Weigth per hectoliter.	81,3	Fraction 2	5153	42,05
	Protein	12,0	Fraction 3	3102	25,31
	Amylase activity	270	Fraction 4	1246	10,17
	DON	1630	SUM	12254	100,00
Eurofins analyses:					

Fraction 1	Weigth per hectoliter	82
	Protein	12,6
	Amylase activity	301
	DON	438
Fraction 2	Weigth per hectoliter.	82
	Protein	12,7
	Amylase activity	300
	DON	353
Fraction 3	Weigth per hectoliter.	80
	Protein	12,5
	Amylase activity	283
	DON	589
Fraction 4	Weigth per hectoliter.	74
	Protein	12,3
	Amylase activity	217
	DON	1944

Wheat, sample C28				**Gram**	**Prosent**
Original material	Water	14,1	Fraction 1	2234	18,19
	Weigth per hectoliter.	81,0	Fraction 2	5319	43,32
	Protein	13,2	Fraction 3	3623	29,51
	Amylase activity	264	Fraction 4	1103	8,98
	DON	560	SUM	12279	100,00

Eurofins analyses:

Fraction 1	Weigth per hectoliter.	81
	Protein	13,6
	Amylase activity	333
	DON	460
Fraction 2	Weigth per hectoliter.	80
	Protein	13,4
	Amylase activity	293
	DON	368
Fraction 3	Weigth per hectoliter.	79
	Protein	13,1
	Amylase activity	297
	DON	1094
Fraction 4	Weigth per hectoliter.	77
	Protein	13,1
	Amylase activity	192
	DON	1439

Rye, sample C9				**Gram**	**Prosent**
Original material	Water	16,2	Fraction 1	3156	23,89

	Weigth per hectoliter.	74,5	Fraction 2	5103	38,63
	Amylase activity	135	Fraction 3	3536	26,77
	DON	500	Fraction 4	1416	10,72
			SUM	13211	100,00

Eurofins analyses:

Fraction 1	Weigth per hectoliter.	75
	Amylase activity	105
	DON	297
Fraction 2	Weigth per hectoliter.	74
	Amylase activity	105
	DON	341
Fraction 3	Weigth per hectoliter	73
	Amylase activity	102
	DON	650
Fraction 4	Weigth per hectoliter	70
	Amylase activity	93
	DON	1091

Oat, sample C12				**Gram**	**Prosent**
Original material	Water	13,8	Fraction 1	4262	34,39
	Weigth per hectoliter	54,3	Fraction 2	5239	42,27
	DON	2690	Fraction 3	2190	17,67
			Fraction 4	703	5,67
			SUM	12394	100,00

Eurofins analyses:

Fraction 1	Weigth per hectoliter	59
	DON	427
Fraction 2	Weigth per hectoliter.	57
	DON	1348
Fraction 3	Weigth per hectoliter.	53
	DON	1570
Fraction 4	Weigth per hectoliter	44
	DON	>5000

Oat, sample C17				**Gram**	**Percent**
Original material	Water	14,4	Fraction 1	3798	34,13
	Weigth per hectoliter	52,8	Fraction 2	4517	40,59
	DON	4130	Fraction 3	2037	18,30
			Fraction 4	777	6,98
			SUM	11129	100,00

Eurofins analyses:

Fraction 1	Weigth per hectoliter	58
	DON	1434

Fraction 2	Weigth per hectoliter.	55
	DON	2438
Fraction 3	Weigth per hectoliter	52
	DON	>5000
Fraction 4	Weigth per hectoliter	40
	DON	>5000