



Deoxynivalenol in Russian Bread

Cleaned-up with *DONeX*



Russian Bread

Russian Bread is a dry pastry made from egg white foam, sugar, flour and cinnamon. It probably originated in St. Petersburg (Russia) and was first baked in 1844 as "bukwy" (letters).

Eating fonts is an old magical custom. Until the 19th century, edible fonts were considered as a didactic (=learning supporting) aid, for example to learn to read with the help of the edible letters. Nowadays, the biscuits are available in many different variations and are considered as a low-fat snack. Both flour and cinnamon, which are needed for the production of the delicacy, can be contaminated with mycotoxins. As these ingredients must not exceed a maximum mycotoxin content when imported, tests are regularly carried out.

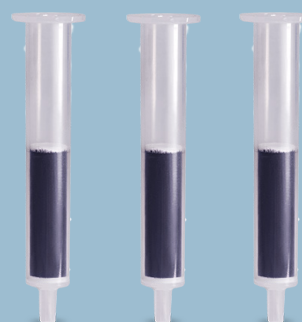
Easy monitoring of Deoxynivalenol - DONeX makes it possible

Deoxynivalenol, also known as vomitoxin, occurs as a metabolic product of various fungi of the genus *Fusarium*. As a rule, the toxin is analysed with HPLC-UV or postcolumn derivatisation and fluorescence detector or LC/MS. With all three methods, good sample preparation increases the number of samples, the life of the HPLC column and reduces interference from matrix components.

The DONeX clean-up column developed by LCTech, which can be used both for manual and automated processing with the FREESTYLE SPE robotic system, eliminates interference from the matrix and reduces chromatography by removal of interfering matrix peaks. Better and faster chromatograms as well as higher measurement sensitivity could be achieved.

The DONeX column is suitable for many common matrices such as maize, barley, oats and cereal-based feeds, but also for more complex matrices such as muesli, pasta or various baked goods, including Russian Bread.

More samples per time can be measured with the *DONeX* clean-up columns from LCTech!



DONeXTM



Processing Protocol

Extract 10 g homogenised Russian Bread with 50 mL acetonitrile/water (84/16 v/v). Run the extraction for at least 10 to 15 minutes to achieve optimal extraction efficiency. Then centrifuge the extract at 3000 xg for 5 minutes or filtrate it through a plated filter.

Load 20 mL of the extract (equivalent 4 g) onto a DONeX clean-up column from LCTech. Collect the flow through in a 50 mL polypropylene tube and rinse the sample reservoir with 10 mL acetonitrile/water (84/16 (v/v)). Load the washing solution onto the column and collect again the flow through with the same 50 mL polypropylene tube. Mix the solutions, fill 7.5 mL (equivalent to 1 g) into a glass tube and evaporate it to dryness using a nitrogen stream.

Add 500 µL of HPLC solvent or HPLC water. Mix vigorously to dissolve the analytcs. Filter the sample through a 0.2 µm syringe filter into a GC vial. Now you can analyse the sample with the appropriate standards by HPLC-UV or LC-MS.

DONE X

These LCTech products were used:

12792 / 12793	DONeX, SPE Column for DON-Analysis
10522	HPLC Separation Column RP C-18
12415	EluVac Vacuum Manifold

Recovery Rates

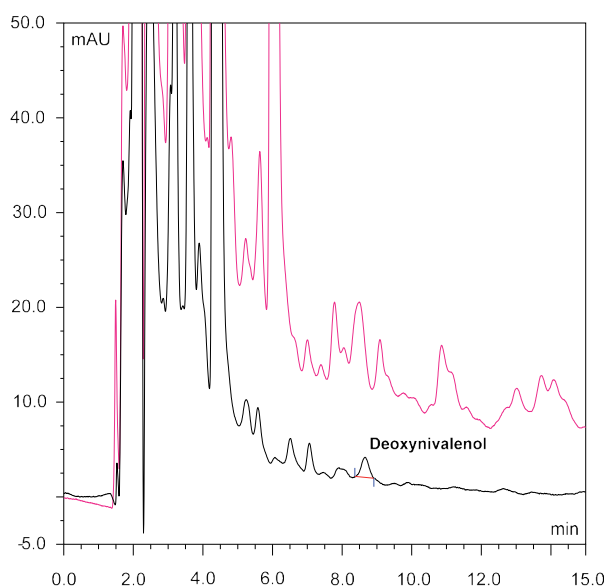
Deoxynivalenol	DON
Standard*	100
Recovery Rate** Russian Bread	101

*Standard was set to 100 %, **corrected with non-spiked sample
The results are in accordance with the performance specifications of EC 401/2006 (par. 4.3.1).

Conditions

HPLC	isocratic
Column Oven	33 °C
Separation Column	RP C-18 (P/N 10522)
Flow Rate, Eluent	1,0 mL/min; HPLC-water/acetonitrile/ acetic acid (95/5/1 (v/v/v))
UV Detection	218 nm

Chromatogram



Black: Russian Bread, 500 ppb, cleaned-up with **DONeX**
Red: Russian Bread, not cleaned-up

- ➔ DON analysis in complex matrices
- ➔ Maximum matrix removal and clean-up of analyte
- ➔ Simple - DONeX

Do you have a special request as to which matrix we should test for you?
Contact us by e-mail at: info@LCTech.de

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