

*Note that this data sheet is not lot-specific. Please consult the vial label and the certificate of analysis for information on specific lots.*

## **B-TeZ ELISA Deoxynivalenol Kit**

Catalogue Number: BTDOEK-001

Package Size: 1 kit (96 wells)

### **1. Brief Description**

The B-TeZ ELISA Deoxynivalenol Kit is a competitive enzyme immunoassay for quantitatively detecting Deoxynivalenol (DON) in food and feed crop (cereals). After a sample preparation to isolate the Deoxynivalenol, a maximum of 36 samples in duplicate can be tested in 45 minutes with the B-TeZ ELISA.

### **2. Kit components**

1 Microplate (12 strips with 8 wells) coated with Anti-DON-Antibody, 1 Sample dilution buffer, 6 calibrators for DON (DON-Standards: 0, 3.1, 11.7, 19.2, 48.0, 120.0 ng/ml), 1 DON-HRP-Conjugate, 1 Wash solution, 10-fold concentrate, 1 Substrat reagent (TMB), 1 Stop solution (1M H<sub>2</sub>SO<sub>4</sub>)

### **3. Other materials and equipment required**

Homogenizer, electronic balance, centrifuger, micropipettes, distilled water, vortexer, microplate shaker, washing device for microplates, microplate reader (450 nm / 620 nm)

### **4. Sample Preparation**

Deoxynivalenol is extracted from a representative ground food or feed sample by shaking with water (ratio sample to water: 1:5 (w/v)). The liquid and solid phases are separated by centrifugation and subsequent filtration. Liquid samples e.g. beer should be previously degassed by moderate heating. The filtrate or the liquid sample must be diluted prior to testing in the ELISA with sample dilution buffer. The dilution factor for solid samples (cereals, feed) is 25 and for beer is 10.

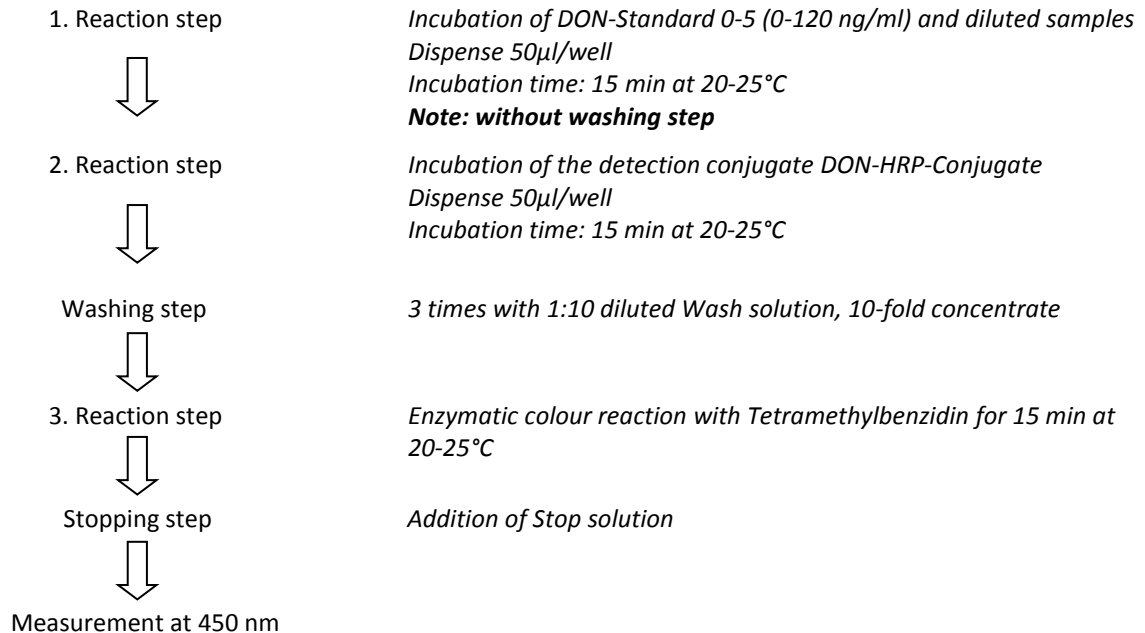
### **5. Principle of the assay**

The B-TeZ ELISA Deoxynivalenol is a competitive enzyme immunoassay. The assay is carried out in a microplate, of which the cavities have already been pre-coated with a special anti-Deoxynivalenol antibody. To carry out the assay, Deoxynivalenol (DON) standards and sample extracts respectively are pipetted into the cavities. The addition of Deoxynivalenol peroxidase conjugate (DON-HRP-conjugate) occurs after an incubation period of 15 min without a preceding washing step.

Deoxynivalenol from the standard or sample competes with the HRP labelled Deoxynivalenol on the antibody binding sites. The unbound components are removed by rinsing them off and then peroxidase substrate solution (3,3',5,5'-Tetramethylbenzidine, TMB) is pipetted into all cavities. The DON-HRP conjugate that is bound to the antibody reacts with the substrate solution by forming a blue colour. After 15 minutes, this reaction is terminated by adding the stop solution. The colour then changes from blue to yellow, which is detected photometrically. With the help of a microplate reader, the yellow colouring is measured as an optical density (OD) at a wavelength of 450nm (reference value 620nm).

The Deoxynivalenol concentration is inversely proportional to the colour intensity. The higher the OD measurement, the lower is the concentration of Deoxynivalenol in the standard or sample.

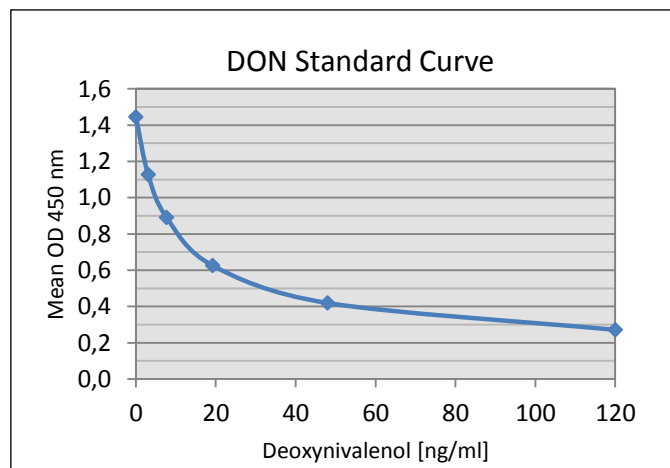
## 6. Reaction scheme



## 7. Example of standard value and standard curve

DON [ng/ml]	Mean O.D.	CV [%]	% O.D. [%]
0.0	1.445	2.6	100.0
3.1	1.127	3.6	78.0
7.7	0.891	4.3	61.7
19.2	0.626	6.0	43.3
48.0	0.419	3.3	29.0
120.0	0.271	6.6	18.8

Note: These values are only an example. The standard value of DON-Standards has to be measured in each test.



## 8. Test evaluation

The evaluation can be performed using commercial ELISA programs or Logit/Log. Using the mean optical density of the sample, the corresponding concentration of Deoxynivalenol [ng/mL] can be determined in a measured, diluted sample extract from the DON standard curve. The recalculated DON values must be further converted by the appropriate sample dilution factor.

## 9. Assay Parameter

- Test format: microplate (12 strips with 8 wells)
- DON standard range: 0, 3.1, 11.7, 19.2, 48.0, 120.0 ng/ml Deoxynivalenol (for the calculation of diluted samples)
- Sample: food and feed
- Sample preparation: water extraction
- Dilution factor: solid sample: 25  
liquid sample: 10
- Incubation time: 45 min (15+15+15 min)
- Detection limit (LOD): wheat flour: 12 ppb  
oats: 15 ppb
- Recovery rate: 80 – 110 %
- Cross reactivity: 100% Deoxynivalenol, >100% 15-Acetyldeoxynivalenol  
<1% 3-Acetyldeoxynivalenol, T2-Toxin, Nivalenol
- Intra assay variation: ≤6%
- Inter assay variation: ≤12%
- Storage: 2-8°C
- Shelf Life: 12 month under storage conditions



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