Deoxynivalenol (DON) Rapid Test Kit

Technical Manual (GICA)



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1 Principle and Application |-

The test kit is used for detecting Deoxynivalenol (DON) in various samples such as grains, animal feeds.

The kit is developed using the principle of competitive colloidal gold immunochromatography Assay (GICA). After the sample solution is added to sample hole, if DON is present, it will bind with gold labeled antibodies, thereby preventing the labeled antibodies from binding to the DON conjugates on the nitrocellulose membrane. The results are judged according to the contrast of color strength.

2 Technique Data I-

Kit Sensitivity: 10ppb (ppb=µg/kg)

Detection Limits: 500-5000ppb(ppb=µg/kg)

Scope of application: Grain, feed raw materials, and some feed products (finished feed).

3 Kit Content I-

Package specification	20T/Kit	
Test device (with disposable dropper)	20	
DON Reconstitution Buffer	30mL×1	
Instruction	1	

4 Materials Required but Not Supplied |-

4.1 Equipment: grinder (for crushing solid samples), vortex mixer (for shake and mix), centrifuge, graduated transfer pipette, and balance with a division value of 0.01 g.

4.2 Micropipettes: single-channel (5-50µL, 20-200µL and 100-1000µL).

5 Sample Pre-treatment I-

Please note that the labware must be clean. Use disposable droppers to avoid contamination of interference results.

5.1 Sample treatment:

1)Weigh $5.0\pm0.05g$ of the crushed sample into a 50mL centrifuge tube (for highly absorbent sample, weigh $2.5g \pm 0.02g$), add 20mL of deionized water, shake for 5 minutes, and centrifuge at 4000 rpm for 5 minutes at room temperature (or let it stand until it separates) to obtained supernatant.

5.2 Sample dilution:

1)Detection limits: 500-2000ppb

Take 1.0 mL of DON Reconstitution Buffer, add supernatant according to the detection limits in the table below (double the amount of supernatant for highly absorbent samples), mix well, and then proceed with the test.

Detection Limits	500ppb	1000ppb	2000ppb
supernatant	95µL	40µL	20µL

2)Detection limits: 3000-5000ppb

Take 1.0 mL of DON Reconstitution Buffer, add 50μ L of supernatant (for highly absorbent sample, add 100μ L of supernatant), and mix well to obtained mixture.

Take the DON Reconstitution Buffer into another centrifuge tube according to the detection limits below, then add 100 μL of the mixture, mix well to obtained sample solution.

Detection Limits	3000ppb	5000ppb
DON Reconstitution Buffer	200µL	410µL

6 Test Steps I-

1)Tear the foil pouch, take out of the test card, and put on a flat, clean work surface.

2) Using the provided dropper, add 2-3 drops (approximately 60μ L) the sample solution vertically and slowly into the sample hole("S").

3)Evaluate the results at 8-10 minutes; any readings taken after 10 minutes are only for reference.



7 Results Judgement |

Negative: Test ("T") line and control("C") line both appear in the result window. The color of the test("T") line is



consistent or deeper than the control("C") line. It indicates that the concentration of DON in the sample is below the detection limit or absent.

Positive: In the result window, the control("C") line appears, while the Test("T") line does not appear or appears lighter in color than the control("C") line. It indicates that the concentration of DON in the sample is above the detection limit.

Invalid: If the control("C") line does not appear, the result might be considered invalid.

8 Notice |-

8.1 Don't use the expired or damaged products.

8.2 When the test card is taken out of the refrigerator, it should be restored to the room temperature and then opened. The opened test card should be used as soon as possible to avoid failure after being affected by moisture.

8.3 Avoid touching the white nitrocellulose membrane in the middle of the detection card.

8.4 In order to avoid cross-contamination, the droppers cannot pipet another Solution after pipetting one.

8.5 The sample solution to be examined needs to be clear and free of turbid particles. Otherwise, it is prone to lead to blockage, non-obvious color development and other abnormalities, affecting the determination of the experimental results.

9 Storage Conditions I-

The kit shall be stored at 2°C to 30°C (35.6°F to 86°F) in dry environment.

Shelf life: 12 months. The date of manufacture is presented in the label of the box.