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# FeedCheck✓Soy

## > *User Guide*

Rapid Test Kit for Residual  
Urease in Soybean Meal



## Overview

FeedCheck Soy from Canadian Bio-Systems Inc. (CBS Inc.) is an innovative new tool for on-site testing of residual urease in soybean meal as a marker of trypsin inhibitor activity, and hence indirectly evaluating the quality of the heating process during the production of soybean meal.

### How it Works (Principle of Assay)

The enzyme urease catalyzes the breakdown of urea to carbon dioxide and ammonia causing an increase in the pH of the soybean meal sample. The application of the FeedCheck Soy reaction reagent will indicate areas of high urease activity by changing the colour of the soybean meal sample to red-wine. This change in colour of the sample, seen as red-wine dots, can be used to estimate semi-quantitatively the residual urease activity in soybean meal – letting you know if the heating process was adequate during the production of soybean meal.

### Materials

**The FeedCheck Soy rapid test starter kit includes 5 main components:**

- › FeedCheck Soy Reaction Reagent (16 oz – 475 mL)
- › Petri dishes (5)
- › Transfer pipettes (5)
- › Adjustable measure-up spoon (1)
- › User Guide

**If you already have the kit materials but require more reagent, individual FeedCheck Soy solutions are also available in two sizes:**

- › 32 oz – 945 mL
- › ½ gallon – 1.985 L

### Storage

Keep refrigerated (2-4 °C)

### Recommendations

- › FeedCheck Soy reaction reagent must be equilibrated to room temperature before use. It is recommended to warm just the portion needed for the analysis in order to extend its expiration date. Do not return the reaction reagent test portion to the original bottle, as it may be contaminated with the sample. If properly handled, the reaction reagent is stable for about a month at room temperature (25 °C). A change in the colour of the reagent to red-wine indicate that the solution is not longer optimal for testing purposes.
- › The transfer pipettes provided with the starter kit should only be used with the FeedCheck Soy reagent solution. Do not use this pipette to transfer any other liquid as a contamination may occur reducing the stability of the reaction reagent. If the transfer pipette touches the soybean meal, it has to be discarded.



# Instructions

1



Grind the sample. Make sure the sample does not get overheated, and the grinder is cleaned between samples.

2



Weigh approximately 2 g of the sample. If a scale is not available, use the provided adjustable measuring spoon between ½ tsp and 1 tsp. The spoon should be cleaned between samples.

3



Transfer the sample to one of the Petri dishes provided. Ensure the sample is free of clumps and is evenly distributed in the dish.

4



Pour a portion of the reaction reagent into a clean container. Do not fill the pipette directly from the bottle.

5A



Fill a transfer pipette with the FeedCheck Soy reaction reagent (approx. 3 mL) and add the contents evenly to the sample starting from the edges of the dish and working towards the centre. Repeat this step twice or until the sample is uniformly covered with the reagent. Make sure the pipette does not touch the soybean meal sample.

5B



6



Swirl the Petri dish until the sample is saturated. Start the timer and let stand for 5 minutes. If necessary, for a better reaction environment, add some extra drops to the dish to ensure the sample does not dry out.

7



Count the red-wine dots against a white surface. Use the FeedCheck Soy scale provided in this user guide to evaluate the sample.

1



**pH rise: > 2.0**

Uniformly covered red-wine. Estimated pH rise > 2.0.

2



**pH rise: 1.0 - 2.0**

75% covered red-wine dots. Estimated pH rise 1.0 - 2.0.

3



**pH rise: 0.5 - 1.0**

50% covered red-wine dots. Estimated pH rise 0.5 - 1.0.

4



**pH rise: 0.3 - 0.5**

25% covered red-wine dots. Estimated pH rise 0.3 - 0.5.

5



**pH rise: 0.1 - 0.3**

10 - 20 red-wine dots. Estimated pH rise 0.1-0.3.

6



**pH rise: 0.05 - 0.1**

5-10 red-wine dots. Estimated pH rise 0.05 - 0.1.

7



**pH rise: 0.02 - 0.05**

1-4 red wine dots after 5 min reaction. pH rise 0.02 - 0.05.

8



**pH rise: < 0.04**

At least 1 red wine dot after 25 min reaction. Estimated pH rise < 0.04.

9



**pH rise: < 0.04**

No visible red-wine dots after 25 min reaction. Estimated pH rise 0.

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