

KIS™ Test

District Correlation Meeting

August 20, 2009



United States Department of Agriculture
Food Safety and Inspection Service
Protecting public health through food safety and defense

KIS(TM) Test Presentation-District
Correlation Meeting August 20, 2009

KIS™ Test Overview



- The Charm KIS™ test is an antibiotic detection test for fresh or thawed kidney tissue.
- Its principle of detection is microbial inhibition. Bacteria, cultured in agar with purple pH indicator media and kidney extract, generate acid that produces a yellow color. In the presence of antibiotic, the bacterial growth is inhibited and the test remains blue/purple.



KIS™ Procedure Summary

Essentially, there are only a few steps to the test

- 1) Cut tissue and absorb sample

Note-Work in batches. It's helpful to loosen all of the swabs from the KIS™ tests prior to swabbing the kidneys.

- 2) Activate swab for two minutes

Note-Be sure EACH swab is kept in the top clear liquid for two minutes.

- 3) Incubate tests and read results

Note-Incubate at 64 ± 2 C for appropriate time. Time depends on when results are to be read and may be lot dependant. Be sure to check times prescribed on the packaging.



Additional Notes

Negative Control

- MUST have a Negative Control Sample with each batch of samples and for each lot used
 - Note-Different lot numbers may prescribe different incubation times. Use a negative control for each lot used.
- Negative Control can be used up to 5 days (refrigerated)
 - Note-Video and Written material state 24 hours! Label appropriately to ensure proper storage.
- Negative Control Sample MUST remain yellow for sample batch results to be valid



Additional Notes

Heating Block Use

- Allow ~ 30-60 minute for temperature equilibration
- Avoid setting unit in drafty areas. This will cause longer equilibration times.
- Determine when results will be read
 - **~3 hours**
 - Set timer using prescribed time listed on kit packaging
 - Remove tubes when prescribed time has elapsed
 - **Up to 16 hours**
 - Subtract 15 minutes from prescribed time on kit packaging
 - Leave and allow tubes to cool in heating block



Additional Notes

Batching and Handling Samples

- To avoid mess
 - Recommend placing Kidney in plastic bag
 - Slice bag (ex. Use scalpel)
 - Using the cookie cutter end, score kidney through hole in bag

- Handle Samples in Batches
 - This helps because of the time determinative 2 minute activation step.
 - One possible solution is shown in the video.
 - Score and swab samples
 - Place swabs in tubes **BUT DO NOT** engage.
 - Engage tube and start two minutes. Engage remaining tubes down the line.



Additional Notes

KIS™ Results Interpretation



- ◆ Yellow or yellow/green colors are **negative**.



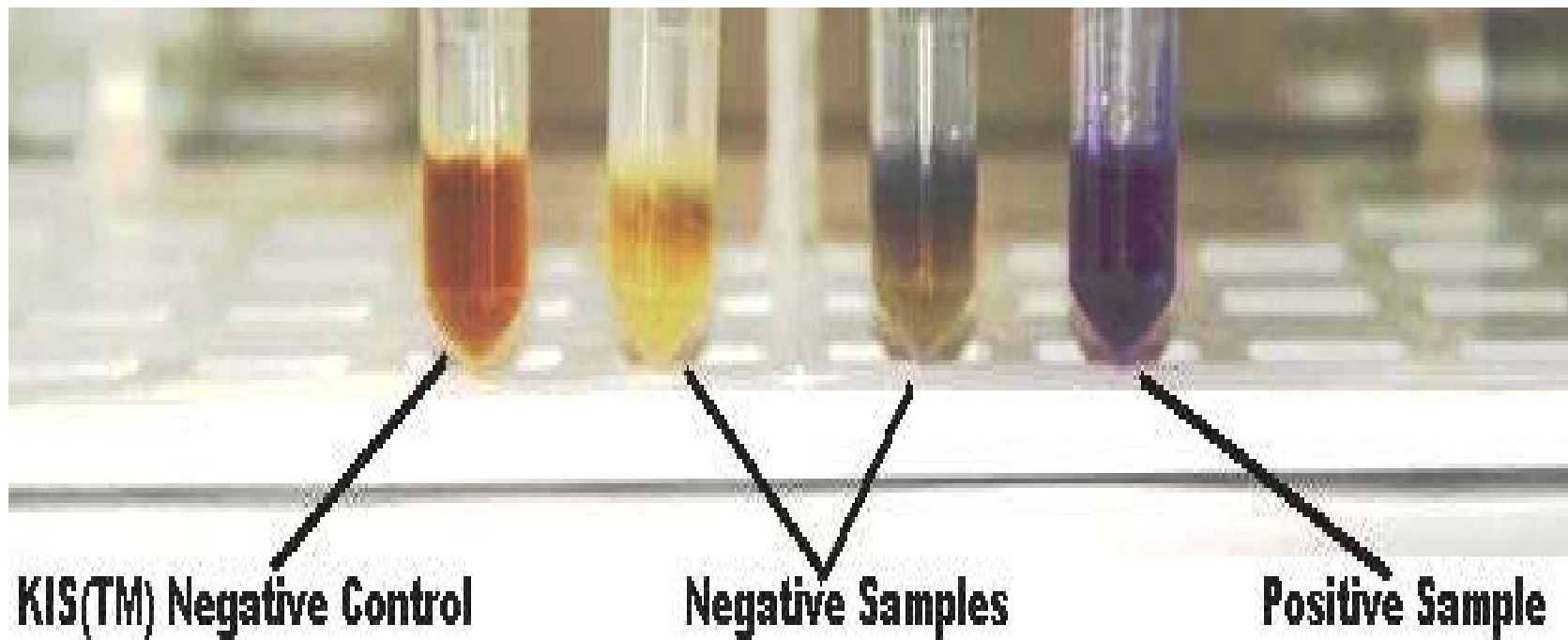
- ◆ Blue/purple colors are **positive**.



- ◆ Yellow or yellow/green in lower half of vial with blue/purple or brown in upper half of vial are **CAUTION**. These samples should be interpreted as **negative**.



Additional Notes
KIS™ Results Interpretation
Note-Read lower half of vial



NOTE:
Kit Negative Control
Note Brownish Color



Correctly Interpreting the Kidney Inhibition Swab (KIS™) Test

Question:

- How should the inspector interpret the color changes associated with the KIS™ test?

Correctly Interpreting the Kidney Inhibition Swab (KIS™) Test

- Answer:

1. “P”ervasive (spread through-out) “P”urple color means “P”ositive – remember keep the “P”s together! A Yellow or Yellow/green color in the lower half of the tube means Negative. See below for pictures of positive and negative results **ALWAYS READ THE BOTTOM HALF OF THE VIAL.**

Correctly Interpreting the Kidney Inhibition Swab (KIS™) Test

- Answer:
 2. The KIS tube comes inoculated with bacteria. The inspector adds kidney extract from the animal being tested to the tube. If the kidney extract that was added to the tube does not contain antibiotics, the bacteria will grow and multiply. These growing bacteria produce acid. The acid build-up in the tube changes the color from purple to yellow. The bacteria grew, there was acid production, and the color changed from purple to yellow. This is a negative test.

Correctly Interpreting the Kidney Inhibition Swab (KIS™) Test

- Answer:
3. When microbial inhibitors (antibiotics) are present in the kidney extract from the carcass being tested, the bacteria will not grow, acid will not be produced, and the color will not change (it will remain purple)

KIS™ Questions?

- Contact RIMD via AskFSIS – Sampling
- Call 1-800-233-3935 and select #4 for RIMD