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A. Uses

What can this test be used for? This test is used for the screening of cows for sub-clinical ketosis.

- Monitoring *fresh cows*
- Checking *herd level* nutritional status

Can I use the PortaBHB™ milk ketone test to assay dairy goat and sheep samples? No. The PortaBHB™ milk ketone test has not been field tested in these animals.

B. The Test Principle & Relation to Other Methods

How does the PortaBHB™ milk ketone test work? The PortaBHB™ milk ketone test is based on a chemical reaction between an enzyme on the test strip and a ketone called beta-hydroxybutyrate (BHB) found in the milk. This reaction makes the test strip sample area change to a purple color. The darker the purple color, the higher the BHB level.

How does the PortaBHB™ milk ketone test differ from reference lab testing? Lab instruments use a technique that measures the level of BHB in blood serum or plasma.

How does the PortaBHB™ milk ketone test compare to lab data? The correlation between BHB values in milk and in blood is low ($r=0.66$). Therefore, in comparing the various tests on the market, investigators look at sensitivity and specificity around certain cutoff values, instead of a direct correlation.

Compared to a threshold of ≥ 1.4 mmol/L in blood, the PortaBHB™ milk ketone test shows the following sensitivity/specificity:

| | PortaBHB™ Milk Ketone Test Threshold | |
|---------------------|---|----------------------------|
| | $\geq 100 \mu\text{mol/L}$ | $\geq 200 \mu\text{mol/L}$ |
| Sensitivity* | 89.2 | 40.3 |
| Specificity* | 79.6 | 99.5 |

* Data based on a study of 577 cows at the University of Montreal.

What cut off values should be used?

Researchers at the University of Montreal suggested using a threshold of:

- 100 $\mu\text{mol/L}$ for herd level management of hyperketonemia
- 200 $\mu\text{mol/L}$ for detection of sub-clinical ketosis in individual cows, because of the excellent specificity.

C. Kit Storage

How do I store the kit?

Store the kit at $2^{\circ}\text{C} - 25^{\circ}\text{C}$ ($36^{\circ}\text{F} - 77^{\circ}\text{F}$). Refrigerate, if possible. Keep the test strip vial tightly closed. Test strips are moisture sensitive. Use by the expiration date. (*Expiration Date label placed on the vial*).

What is the shelf life of the product?

Product shelf life is one (1) year from the date of manufacture if stored at room temperature. (*Expiration date may be found on the vial*).

D. Conditions for Running the Test

At what temperature should I test the samples?

We recommend testing the milk samples at a place where the temperature is between 8°C and 35°C ($65^{\circ}\text{F} - 95^{\circ}\text{F}$).

Can the test be done outside?

Yes.

Can I strip milk directly onto the test strip?

Yes, but we do not recommend doing this as it might give erroneous results.

E. Milk Samples

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| How fresh must the milk be? | The milk should be tested within 24 hours of sampling. |
| Will the temperature of the milk affect the test? | If the milk is refrigerated, allow it to warm to room temperature before testing. |
| Should I mix the milk sample before testing? | Yes, it is recommended that the milk sample be mixed before testing. |
| Can samples with preservatives be tested? | If the preservative contains a colored dye, it may change the color of the test strip and affect the results. |
| Can samples with antibiotics be tested? | Yes. Antibiotics will not interfere with the test. |

F. Test Strips

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| Where are the <i>Lot Number</i> and <i>Expiration Date</i> for the kit? | The <i>Lot Number</i> and <i>Expiration Date</i> are printed on a label on the test strip vial. |
| What if the test strip is dropped/disturbed during color development? | If the test strip does not pick up dirt or water, it should be fine. |
| What if the test strip was exposed to direct sunlight or high humidity? What if I left the vial in the sun or inside of a hot vehicle? | If the test strips appear pink or purple before use, discard. |

G. Other

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| What if my question is not here, or I need additional information? | Please check our Web site at www.portacheck.com . You may also contact us by email at info@portacheck.com , or by using the toll-free number 866.500.7722 (US only) . For other areas, please call 856.231.8894 . |
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