FEWER NON PREGNANT COWS

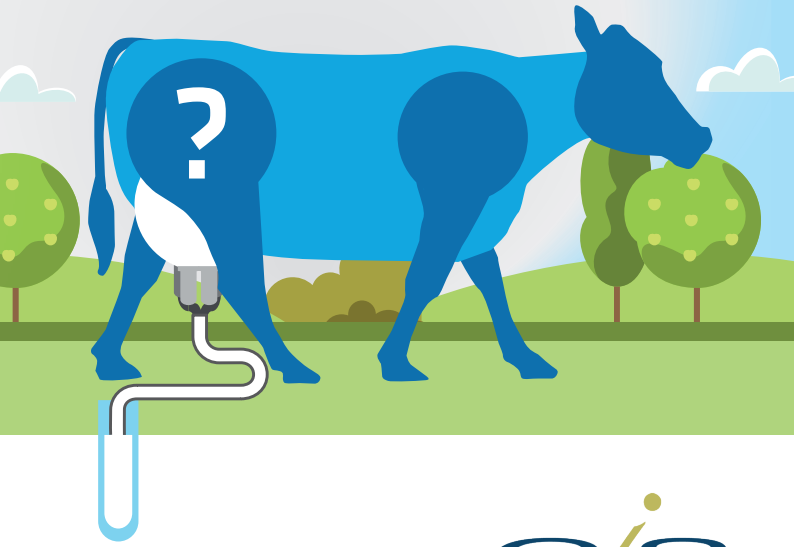
A benefit of milk pregnancy testing through the CIS PregCheck service

Reliable

Simple

Practical

Time Saver



IDEXX

CIS
Cattle Information Service

CONTENTS

Using the PregCheck service: what are the benefits?

A non pregnant cow has an increased lapse of time from calving to calving, and as a consequence:

- Lower milk production over the course of her career (lengthening the unproductive period and lowering the quality of milk at the end of lactation).
- An increase in replacement cost, because the longer the calving interval, the fewer heifers available.

1 additional day of calving interval = **Costs between £2.50 - £4.50 /cow/day lost**

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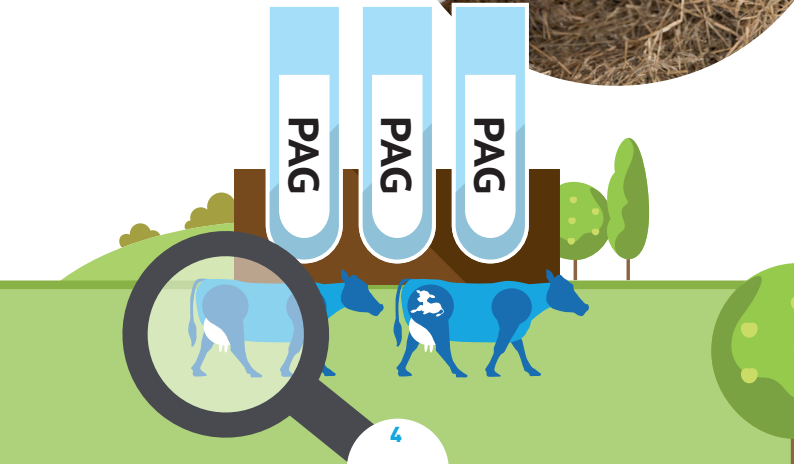
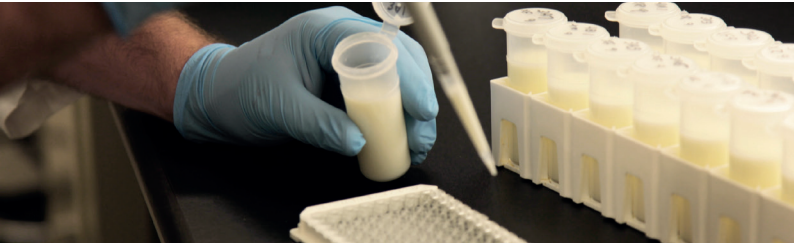
The CIS PregCheck milk pregnancy service: how does it work?

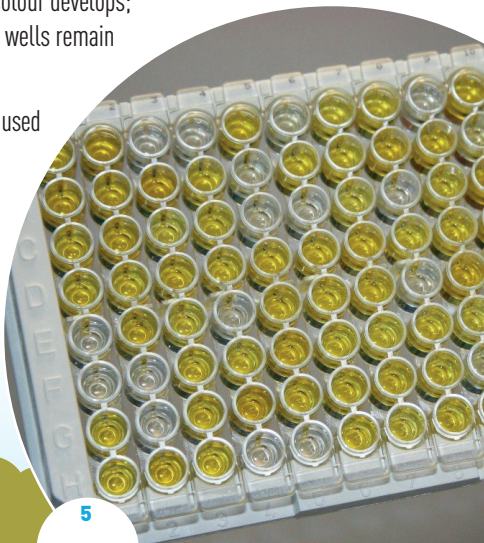
The test detects highly specific markers of pregnancy: pregnancy-associated glycoproteins (PAGs). Unlike progesterone levels that fluctuate naturally during a cycle, PAGs are only produced in the presence of an embryo or fetus.





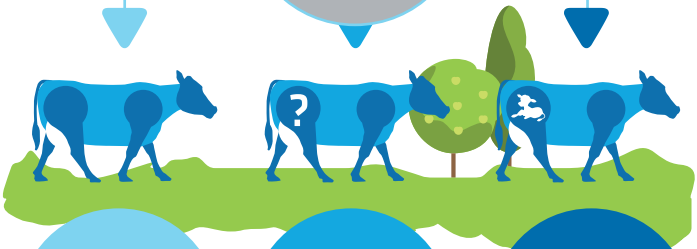
How are the tests run in the laboratory?

- A few drops of milk are placed in each well, on ELISA plates.
- Several reagents are added successively.
- If the cow is pregnant, a colour develops; if she is not pregnant, the wells remain clear.
- An optical density reader is used to measure the colour.



What are the potential results?

COLORIMETRY OF THE SAMPLE (optical density)



< 0.1: **NON PREGNANT**

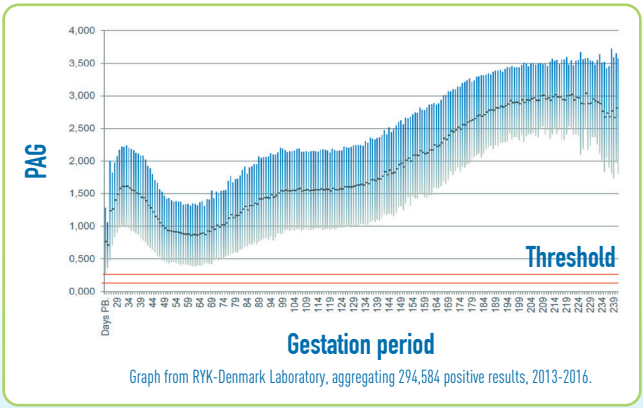
from 0.1 to 0.25: **RE-CHECK (DOUBTFUL)** (3 to 5% of the results)

≥ 0.25: **PREGNANT**

How soon can the tests be run?

PAGs are detectable as early as 28 days after insemination.

PAG levels take time to disappear **after calving or embryonic loss**. We recommend leaving **60 days** after calving and up to 10 days after early embryonic loss before using the test. The further on in gestation then the longer it takes for the PAG level to drop below the cut off line.



Graph from RYK-Denmark Laboratory, aggregating 294,584 positive results, 2013-2016.

Is the CIS PregCheck service reliable?

- The milk pregnancy test is proven to be as accurate as ultrasound and can be used as early as **28 days after insemination**.
- Already **more than 27 million tests** performed worldwide.

SENSITIVITY* % of accurate results on pregnant cows	**99%**
SPECIFICITY* % of accurate results on non pregnant cows	**94%**
COWS TO BE RE-CHECKED (DOUBTFUL)	**3%** of the total

* Validation report of the test carried out on 1,839 samples of milk

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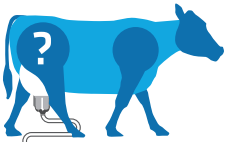
Implementation of the CIS PregCheck service in dairy farming

What testing windows, for what purpose?



EARLY TEST - FROM 28 DAYS POST AI

To identify non pregnant cows as early as possible, so the cow can be re-inseminated quickly.

CONFIRMATION AT AROUND 70-110 DAYS

To detect early embryonic death.

BEFORE DRY-OFF

To avoid drying off a non pregnant cow in anticipation of calving.

What are the advantages for the dairy farmer?

LESS HANDLING, LESS WORK

The service can help the dairy farmer save time and there is less stress to the cows.

BETTER REPRODUCTIVE PERFORMANCE

Identifying the non pregnant cows sooner helps the farmer re-inseminate them quicker.

BETTER PROFITABILITY

A non pregnant cow costs between £2.50 - £4.50 per day.

What are the risks of carryover from one cow to another? And what precautions should be taken for collecting samples?

It is easy to limit milk carryover between 2 cows who are milked one after the other:

- Empty the sampling device between 2 cows so that it drains.
- Make sure the sampling jug/dipper is empty before using, and tap upside down to limit remaining drops.
- A few drops of milk carried over from the previous cow doesn't change the result, but it is imperative that extra care is taken:
  - it takes a 3% carryover rate to change a "negative" result to a "re-check" result,
  - and it takes a 10% carryover rate to change a "negative" result to a "positive" result.

Can the test be run on samples from robot units?

Yes, if certain conditions are met.

- Excellent results obtained on well-parameterised Lely* robot:
  - Ensure sampling shuttle is installed correctly horizontally (verify with a spirit level). Please also ensure that the length of hose is well adjusted.
  - Increase emptying time of the milk pump ≥ 9 seconds (do not forget to reset the parameters to the initial setting after the weighing).
- The results of reliability are very similar to the values obtained from a normal milking parlour (only 3.5% of samples to be re-checked and 2% false positives).

* Tests in progress on other brands

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Dairy farmers' questions

What does a "re-check" result mean?

It is a sample containing a small quantity of gestation proteins (the vial contains too many PAGs to ensure that the cow is non-pregnant, but not enough to confirm that she is pregnant).

▶ **If the farmer received a re-check result then a sample needs to be taken again from the cow at a later date in order to rerun the test.**

Several possible causes:

- **A cow sampled too early:** < 28 days from AI or < 60 days from lactation.
- **OR a cow that has just aborted:** 8 days are required to become negative if the cow aborts at around 30-50 days.
- **OR a problem of carryover:** be more rigorous when sampling.

My cow tested positive but now she is coming back in heat...

- **The cow has probably aborted! That is the most likely reason...**
  10 % of cows abort between 30 and 60 days[1,2]
- **It may be a "false heat" and in this case, the cow is actually pregnant.**
  A pregnant cow can sometimes show signs of heat ▶ 3% of cases[3]

1. Inskeep, Vet Clin NA, 2005
2. Santos, Animal Repro Sc., 2004
3. Dijkhuizen, Vet Quarterly, 1997

My cow tested negative but now the ultrasound shows that she is pregnant without being re-inseminated...

A negative test on a cow who has been pregnant for more than 28 days is not likely! There must be an error somewhere...

- Check the date of the ultrasound against the date of the test.
- Possible error in the ultrasound.
- Possible identification error.
- Possible new AI or unrecorded mating.

More than 27 million tests have already been performed worldwide

www.thecis.co.uk
www.milkpregnancytest.uk

09-AVI90827-00 EN Technical Pocket Guide_DHI • Avalone

Test **with Confidence**™

IDEXX

Alertys™ Milk Pregnancy Test

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