
# RAINBOW
## CALF SCOURS

**Neonatal gastro-enteritis (NNGE) still represents a major issue in calves** below one month of age:

- Herd prevalence: > 25%
- Mortality rate: 2 to 10%
- In herd morbidity: from 15% to 50% in "problem herds"

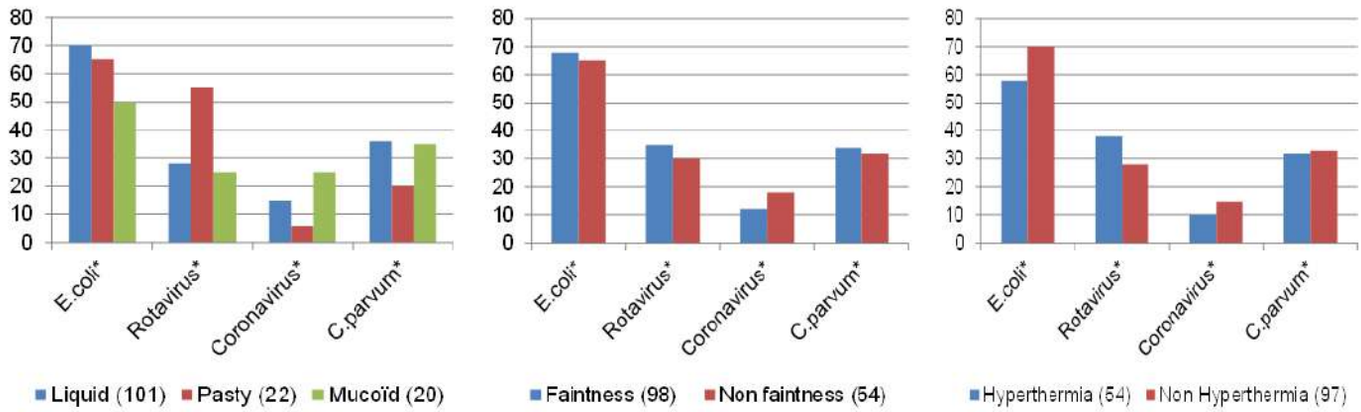
**As a result, 20% of herds fall above admitted norm of 15% of calves undergoing a neonatal diarrhea.**

NNGE are fundamentally a combination of:

- Environmental factors
- Lack of immunity
- Presence of an infectious agent/disbalance of the intestinal flora

Behind mortality, associated costs include impact on growth, treatment costs and, which must be considered, psychological impact on the farmer.

**Clinical signs are not always pathognomonic, and can not easily discriminate between pathogens or their combination**s as shown below (all criteria not significantly different at P=0.05, n=155)




Thus, using an on-site diagnostic assay can definitely change the veterinary approach of NNGE, not only at animal level, but typically at herd's level, allowing collective measures (hygiene, management, feeding mode, adaptation of vaccination scheme etc...) to be taken.

**RAINBOW™ Calf Scours** offers today's best option to sharpen a clinical diagnosis, and to eventually improve the decision of the practitioner, and its expected benefits:

- Within a very limited hands-on time (less than 1 minute), and read-out time (less than 10 minutes) as well as a very intuitive handling;
- For an affordable price;
- Whilst keeping high standards of quality: **RAINBOW™ Calf Scours** is validated against reference methods (sometimes gold standards), through significant cohorts of samples

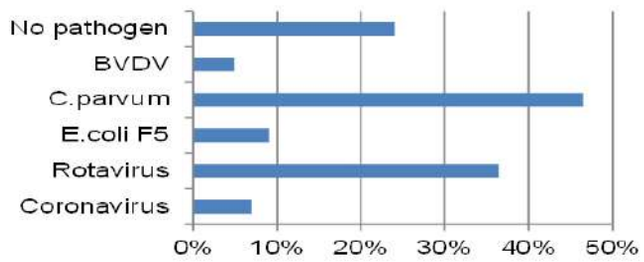
| | +/+ | +/- | -/+ | -/- | KAPPA | |
|---|---|---|---|---|---|---|
| Rotavirus ELISA) | 48 | 0 | 2 | 40 | 96% | Excellent |
| Corona (PCR) | 7 | 2 | 4 | 74 | 66% | Good |
| Corona (ELISA) | 8 | 1 | 1 | 78 | 88% | Excellent |
| F5 (PCR) | 19 | 1 | 4 | 62 | 85% | Excellent |
| F5 (ELISA) | 18 | 1 | 2 | 65 | 90% | Excellent |
| Crypto (Ziehl) | 32 | 3 | 2 | 63 | 89% | Excellent |

*Table 1: concordance of results between RAINBOW Calf Scours and reference methods using kappa factor)(n=90)*


# RAINBOW

**RAINBOW™ Calf Scours is a multiplexed assay, and displays various possible combinations:**

- Major NNGE embedded pathogens
  - *Rotavirus type A*
  - *Coronavirus (BCoV)*
  - *E.coli F5 (ETEC) (K99)*
  - *Cryptosporidium parvum*
- Optional parameters can be added to standard panel:
  - *Clostridium perfringens (semi quantitative strip)*
  - ***NEW** E.coli CS31A (see below performance validation data)*




*Prevalence of pathogens on samples coming from diarrheic calves (n= 155)*

## E.COLI CS31A: A SUSPICION OF PATHOGENICITY

**CS31A *E.coli* is highly prevalent,** found in 20% to 45% of diarrheic feces samples of calves aged up to 4 weeks. In addition, it can affect calves from 6 days-old up to 3 weeks.

As a result, **CS31A *E.coli* is often associated with other highly prevalent pathogens,** such as rotavirus or *Cryptosporidium parvum*. This may lead to more complicated or severe clinical patterns.

A comparison between MULSTISCREEN ELISA BIO K 366 and RAINBOW CS31A strip was made on a cohort of 138 stools coming from diarrheic calves aged up to 4 weeks.

| | | ELISA | | |
|---|---|---|---|---|
| | | POS | NEG | TOTAL |
| VFIA | POS | 30 | 7 | 37 |
| | NEG | 1 | 100 | 101 |
| | TOTAL | 31 | 107 | 138 |

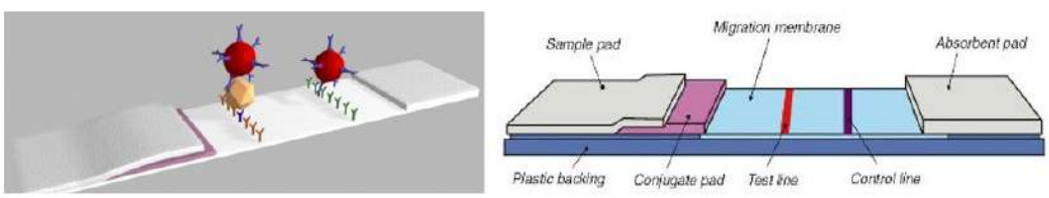
*Prevalence of CS31A E.coli in this group was of 22.4%*

*Relative Sensititvity of RAINBOW is 96.8%*

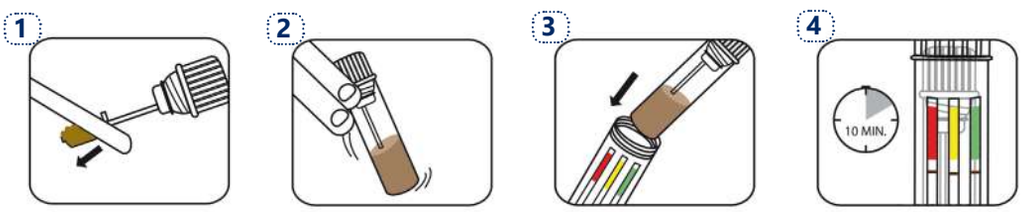
*Relative Specificity of RAINBOW is 93.4%*

## RAINBOW™ CALF SCOURS: ABOUT THE PRODUCT

**RAINBOW Calf Scours** strip is a vertical flow immunochromatographic device, where the antigen of interest is captured onto the membrane by a specific monoclonal antibody, whilst a second colloidal gold labelled antibody will allow the capture to be revealed.




**MANIPULATION IS EXTREMELY EASY, PREVENTS FROM ANY MISTAKE AND KEEPS THE READING ZONE FREE FROM DIRTY MARKS.**




*Bio-X Diagnostics is ISO 9001:2008 certified to assure the best to its customers*

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