

Immustart® range

Immunoglobulin Y for optimal local intestinal immunity

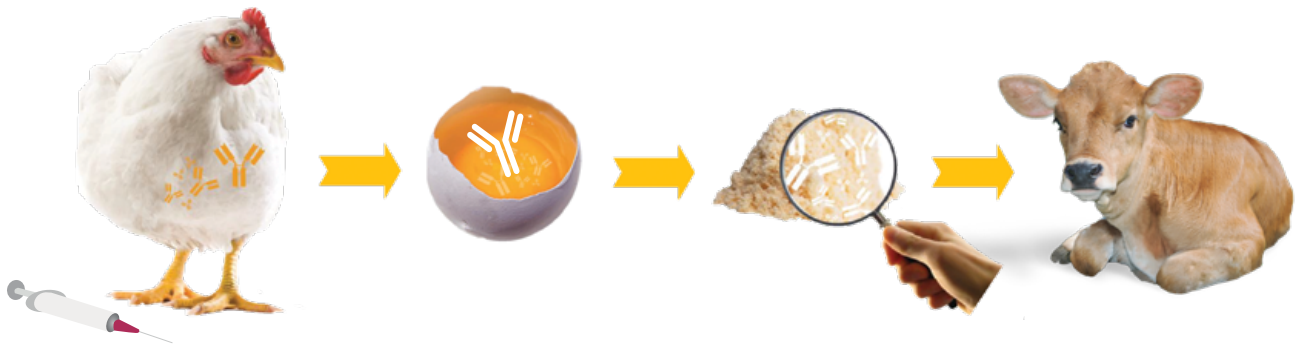
- ▶ **Immustart® Protect:** For the prevention of digestive disorders
- ▶ **Immustart® Dialyte:** During digestive disorders



Immunoglobulin Y, a new approach to strengthen local intestinal immunity

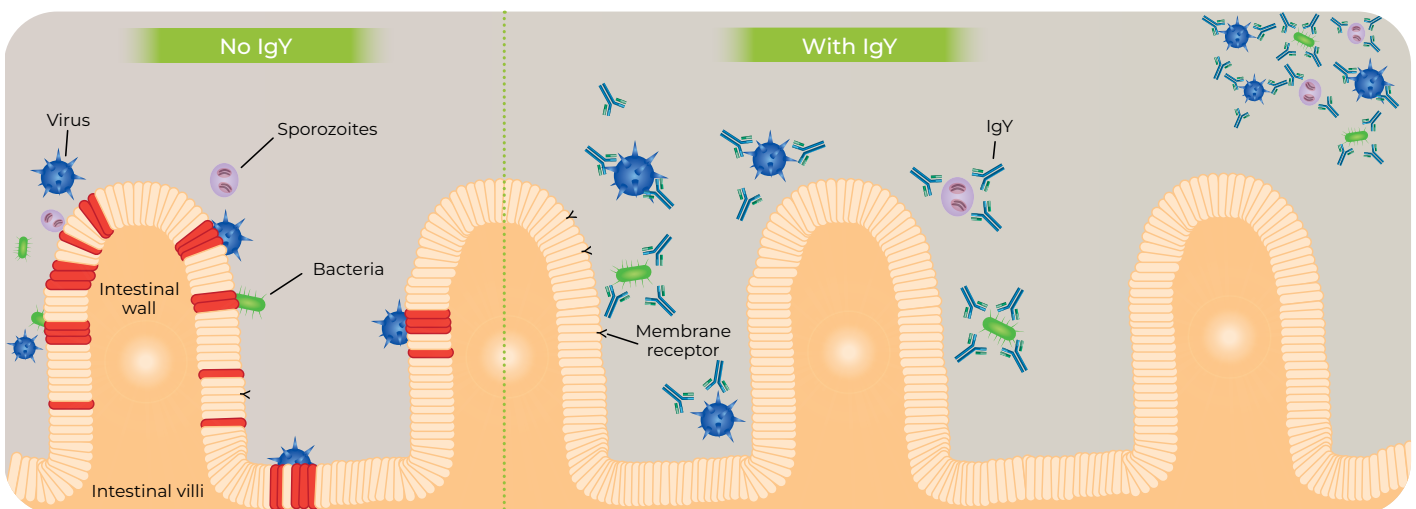
Immunoglobulin Y: immunoglobulins of bird origin

After immunisation (with rotavirus vaccine, corona vaccine, *E. coli* and *salmonella bacterin* cultures) laying hens produce specific antibodies which are transported to the egg yolk which can then be purified. IgY is valuable because it can be collected in big quantities (more than 100 mg per egg) and due to its structure being different from mammalian IgG, they neither activate the mammalian complement system nor interact with mammalian Fc receptors. Several studies have demonstrated that the oral administration of IgY to newborn calves significantly reduced severity and duration of diarrhoea.



IgY improves local immunity in the gut against specific digestive pathogens

IgY accumulates in the intestine strengthening local immunity. IgY binds to digestive pathogens blocking their function. Pathogens can no longer invade intestinal epithelial cells.




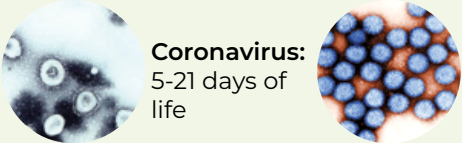

References

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- Y. Xu et al. Application of chicken egg yolk immunoglobulins in the control of terrestrial and aquatic animal diseases: A review *Biotechnology Advances* 29 (2011) 860-868

Neonatal diarrhoea has serious consequences for the health of calves

Neonatal diarrhoea is a major source of economic losses in cattle farms and the first cause of neonatal mortality. Calf diarrhoea is attributed to both infectious and non-infectious factors.

Major pathogens that are responsible for infectious neonatal diarrhoea

Bacteria	Viruses	Parasites
 <p><i>E. coli</i>: 0-3 days of life</p>	 <p>Coronavirus: 5-21 days of life</p> <p>Rotavirus: 5-15 days of life</p>	 <p>Cryptosporidia: 5-15 days of life</p>

How to deal with Neonatal Calf Diarrhoea (NCD)?

Prevention

Calf immunity is important to prevent the onset of diarrhoea: it depends on the successful passive transfer of maternal antibodies from colostrum. Oral administration of specific antibodies is an attractive approach to establish protective immunity against gastrointestinal pathogens. A passive immunisation strategy with chicken egg yolk immunoglobulin, referred to as immunoglobulin Y (IgY), provides an efficacious alternative to prevent and control NCD.

Consequences of calf scour

1. Dehydration
2. Metabolic disorders: acidosis
3. Electrolyte imbalances: mainly sodium and potassium

First treatment

Successful treatment of calf scour depends upon rapidly rehydrating scouring calves. Oral rehydration products aim to:

- ▶ help restore fluid balance
- ▶ provide energy and nutrients
- ▶ correct acid-base imbalances
- ▶ help restore the intestinal flora

References

- Cho, Y., & Yoon, K. J. (2014). An overview of calf diarrhea-infectious etiology, diagnosis, and intervention. *J. Vet. Sci.*, 15(1), 1-17.
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- Lorenz et al.: Calf health from birth to weaning. II. Management of diarrhoea in pre-weaned calves. *Irish Veterinary Journal* 2011 64:9.
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For prevention: Immustart® Protect

Immustart® Protect

IgY for a good start:

- ▶ Local intestinal immunity
 - 20% egg products containing immunoglobulins Y
- ▶ Gut flora stabiliser
 - Probiotic *Enterococcus faecium*
- ▶ Booster
 - Vitamins A, D₃, E and C
 - Guarana



Available in a display box of
12 applicators of 30 mL

Very easy to use

In newborn calves from 1 to 3 days of age:



Day 1
10 mL



Day 2
10 mL



Day 3
10 mL

One applicator for each calf

Graduated
applicator

1 applicator =
3 days
of use



For successful rehydration: Immustart® Dialyte

- ▶ Stabilises water and electrolyte balance
- ▶ Strengthens local intestinal immunity
- ▶ Soluble in milk



Immustrart® Dialyte is available in a display box of 18 sachets of 150 g.

A premium formula during digestive disorders

Local intestinal immunity is enhanced against digestive pathogens

- ▶ **2.5% egg products containing immunoglobulins Y**
- ▶ The IgY contained in egg products improves local immunity against digestive pathogens

Stabilization of the hydro-electrolytic balance

Essential ions in chlorides result in effective rehydration:

- ▶ Na⁺: 147 mEq/L
- ▶ K⁺: 20.10 mEq/L
- ▶ Cl⁻: 77.8 mEq/L
- ▶ **Strong Ion Difference = 89 mEq/L**

Ready-to-use energy to reduce hypoglycaemia

Several sources of energy to quickly increase the blood sugar levels:

- ▶ **Lactose**
- ▶ Acetate and propionate
- ▶ Dextrose
- ▶ Rice and carrot flour
- ▶ **516 kcal/sachet**



A premium formula containing IgY for a quick recovery of physiological digestion

Lasting buffer effect to correct acid-base imbalances

Association of two buffer substances, which do not interfere during the coagulation of milk, for a rapid and prolonged correction of the acid-base balance.

- ▶ Alkalisating acetate and propionate ingredients

Reconstitution of damaged intestinal flora

Prebiotics for good development of beneficial intestinal flora.

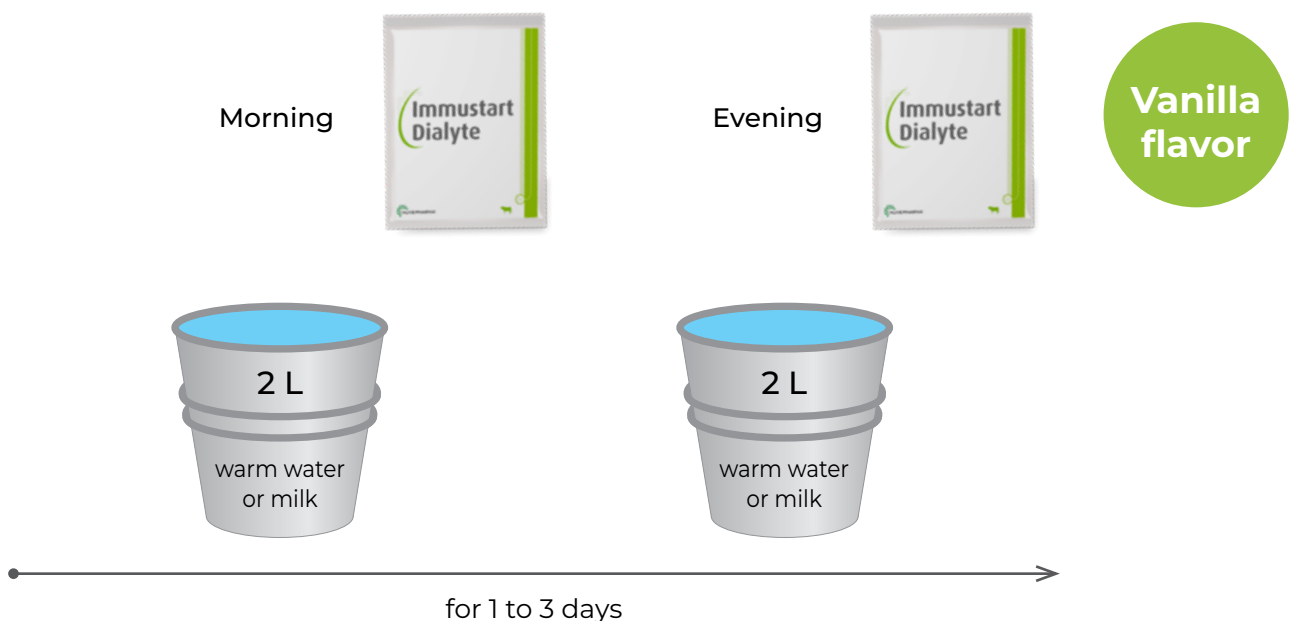
- ▶ *Saccharomyces cerevisiae* yeast extract

Thickening ingredients of faeces and vitamins

Mixture of substances with structuring effect for an improvement in faecal consistency. Vitamins to support the calf.

- ▶ Carob gum, carrot, rice flour
- ▶ Vitamins D₃ and E

Easy to use: milk and water soluble



More information

Immustart® Protect

Complementary dietetic feed.

Particular nutritional purpose

Stabilisation of physiological digestion.

Composition

Vegetable oil and fat (soybean), dried egg products 20%, maltodextrin, guarana, dextrose.

Analytical constituents

Crude oils and fats.....	62.0%
Crude protein.....	10.4%
Crude ash.....	5.0%
Ash insoluble in hydrochloric acid.....	3.9%
Crude fibres.....	0.6%
Sodium.....	0.1%

Additives

Nutritional additives – vitamins:

3a672b – Vitamin A	1 600 000 IU
3a671 – Vitamin D ₃	50 000 IU
3a700 – Vitamin E	25 000 mg
3a300 – Vitamin C.....	2 000 mg

Gut flora stabiliser:

4b1705 – <i>Enterococcus faecium</i>	
NCIMB 10415	200x10 ⁹ CFU

Immustart® Dialyte

Complementary dietetic feed.

Nutritional purpose

Stabilisation of water and electrolyte balance to support physiological digestion.

Composition

Lactose, dextrose, sodium chloride, dried carrot powder, rice flour, dried egg products (2.5%), potassium chloride, carob flour, yeast products from *Saccharomyces cerevisiae* (0.2%).

Analytical constituents

Crude protein	3%
Crude oils and fats.....	1%
Crude fibre.....	1%
Crude ash.....	13%
Sodium	5%
Potassium	1%
Chloride	4%
Lactose.....	60%
Dextrose.....	7.5%

Additives

Vitamins:

3a671 – Vitamin D ₃	20 000 IU
3a920 – Betaine anhydrous.....	9 700 mg
3a700 – Vitamin E	1 000 mg

Preservatives:

E262 – Sodium diacetate
E281 – Sodium propionate

