



**B-Act<sup>®</sup>**

*Simply the best*

## PROBIOTICS

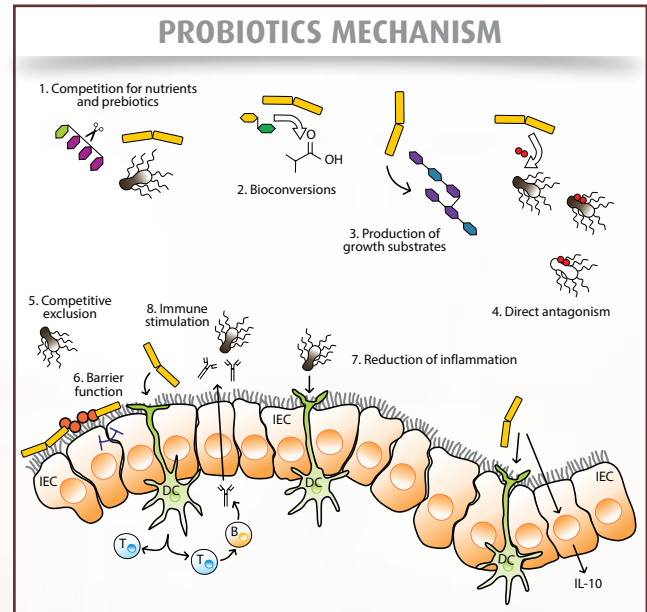
**Probiotics** have been defined as **live microbial** feed supplements which **beneficially** affect the host animal by improving its **intestinal microbial balance**.

Achieving a balanced gut microbiota is critical to intestinal health because of the effect of bacteria on gut morphology, nutrition, intestinal disease and immune responses.

The figure to the right illustrates potential or known mechanisms whereby probiotic bacteria might impact on the microbiota.

These mechanisms include:

- 1. competition for dietary ingredients
- 2. bioconversion
- 3. production of growth substrates
- 4. direct antagonism
- 5. competitive exclusion for binding sites
- 6. improved barrier function
- 7. reduction of inflammation
- 8. stimulation of innate immune response.



## B-ACT®

**B-Act®** is a **probiotic feed additive** consisting of spores of a unique ***Bacillus licheniformis*** strain. *Bacillus licheniformis* is a Gram-positive, facultative anaerobic, **spore-forming** bacterium.

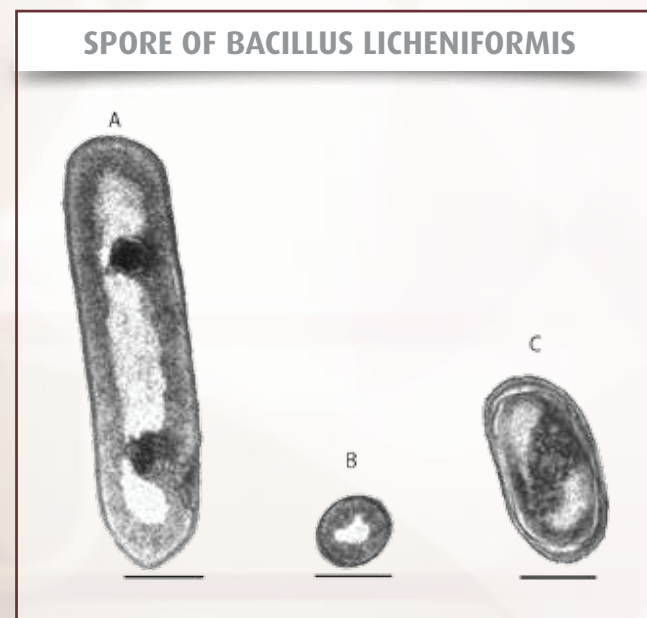
### B-ACT® CONSISTS OF SPORES

**The spores of *Bacillus licheniformis* protect B-Act®:**

- throughout feed production
- in the highly acidic upper digestive tract
- during enzymatic digestion

**When the environment is favorable, the spores:**

- germinate
- multiply
- temporarily attach to the gut
- execute positive effect



Source: American Academy of Allergy, Asthma & Immunology

The vegetative bacterium is shown in longitudinal (A) and cross (B) sections. C, The dormant spore protected by several layers of highly cross-linked proteins and peptidoglycan. Bars indicate 0.5 µm.

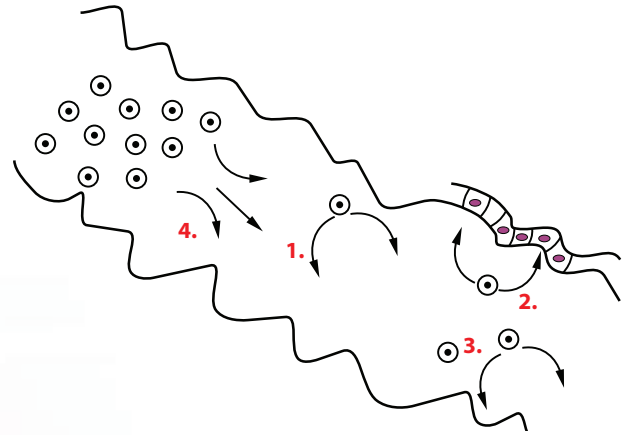
## B-ACT<sup>®</sup>

### MODE OF ACTION OF B-ACT<sup>®</sup>

**B-Act<sup>®</sup> establishes and maintains a beneficial microbial population in the gut.** This makes the gut environment less conducive to colonization by microorganisms that may have a negative impact on animal performance.

#### After germination the *Bacillus licheniformis*:

1. Produces enzymes  
→ facilitate digestion of feed
2. Stimulates local immune system  
→ protects the gut against invasion of pathogens
3. Produces antimicrobial substances  
→ killing selected pathogens
4. Creates favorable environment for beneficial bacteria  
→ competitive exclusion of pathogens



### BENEFITS OF B-ACT<sup>®</sup>

#### Reducing pathogens

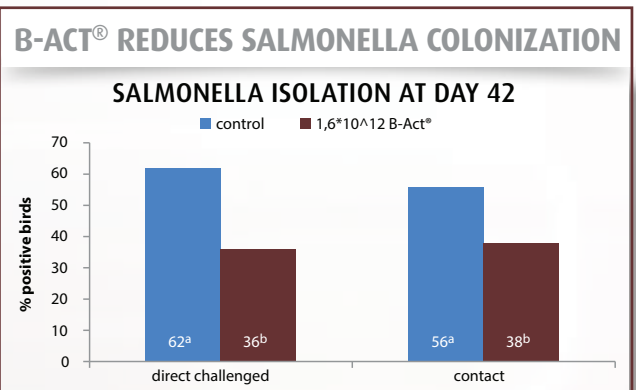
**B-Act<sup>®</sup> supports the animal** at time of stress, environmental change and when therapeutics have been overused.

In addition, **B-Act<sup>®</sup> protects** growing animals **from colonization by pathogens.**

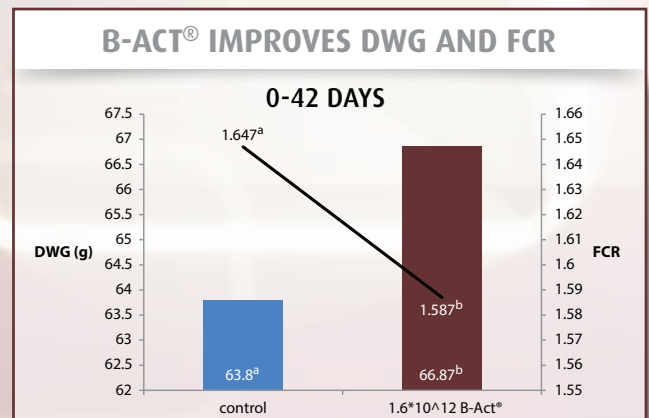
#### Increasing performance

**B-Act<sup>®</sup> reduces** the **FCR**, resulting in an **increase** in **daily weight gain.**

The improvement of the growth of the animal is achieved through a natural, physiological way, improving digestion by balancing the gut flora.



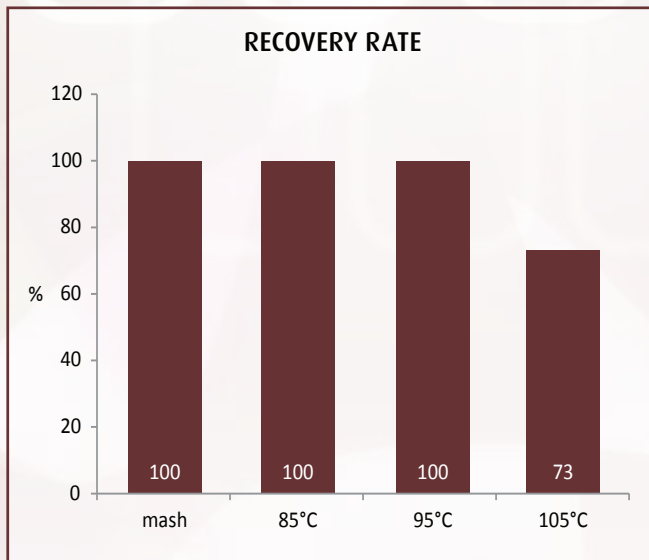
On a total of 400 Cobb broilers per treatment, 50% was orally gavaged with *Salmonella heidelberg*. At day 42, prevalence of *Salmonella* was evaluated in the caeca.



Daily weight gain and FCR were calculated for 480 Ross broilers per treatment at day 42.

## STABILITY

B-Act<sup>®</sup> has a shelf-life of 24 months and is extremely stable. B-Act<sup>®</sup> can resist heat and high pressure, thus surviving the steam conditioning and pelleting process routinely used in the feed industry.



Pellet stability of B-Act<sup>®</sup> at 85°C, 95°C and 105°C with conditioning during 90s.

## CONCLUSION

### B-Act<sup>®</sup>:

- Is a probiotic feed additive
- Consists of *Bacillus licheniformis* spores
- Stimulates gut health
- Increases performance
- Is extremely stable

## DOSE RECOMMENDATIONS

cfu <i>Bacillus licheniformis</i> /g B-Act <sup>®</sup>	Recommended dose of B-Act <sup>®</sup> /mton of feed	cfu <i>Bacillus licheniformis</i> /mton of feed
3.2*10 <sup>9</sup>	0.5 kg	1.6*10 <sup>12</sup>

B-Act is a New Zealand registered veterinary medicine ACVM No. A11376 "as an aid in the control of necrotic enteritis in broiler chickens" when B-Act is included at the 2kg therapeutic dose per tonne of poultry feed.

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