HUVEPHARMA®





B-Act®

Simply the best

AgriHealth

HUVEPHARMA®
We add performance to your business

PROBIOTICS

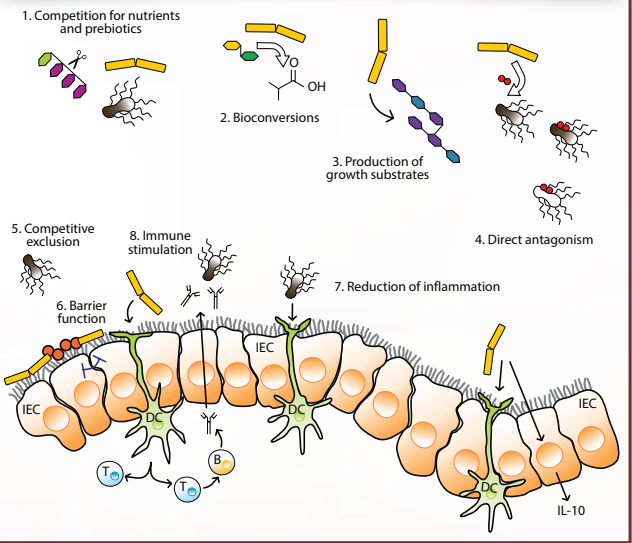
Probiotics have been defined as **live microbial** feed supplements which **beneficially** affect the host animal by improving its **intestinal microbial balance.**

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.

PROBIOTICS MECHANISM



B-ACT®

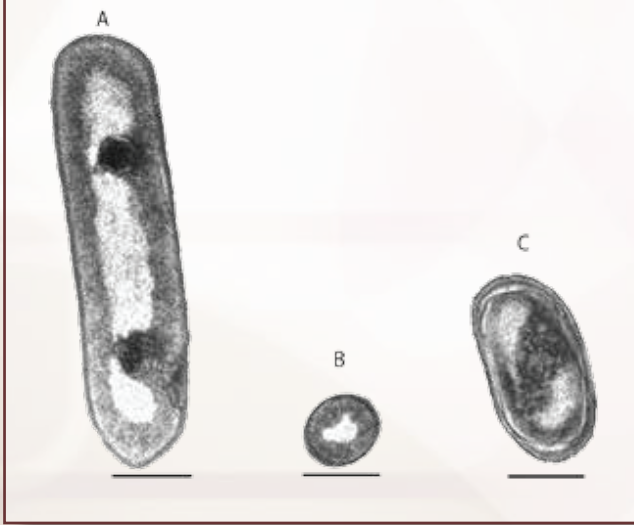
B-Act® is a **probiotic feed additive** consisting of spores of a unique ***Bacillus licheniformis*** strain. *Bacillus licheniformis* is a Gram-positive, facultative anaerobic, **spore-forming** bacterium.

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

SPORE OF BACILLUS LICHENIFORMIS



Source: American Academy of Allergy, Asthma & Immunology

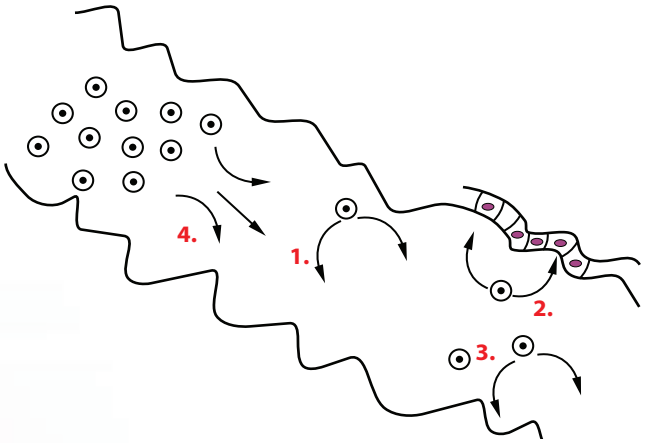
The vegetative bacterium is shown in longitudinal (A) and cross (B) sections. C, The dormant spore protected by several layers of highly cross-linked proteins and peptidoglycan. Bars indicate 0.5 µm.

MODE OF ACTION OF B-ACT®

B-Act® establishes and maintains a beneficial microbial population in the gut. This makes the gut environment less conductive 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

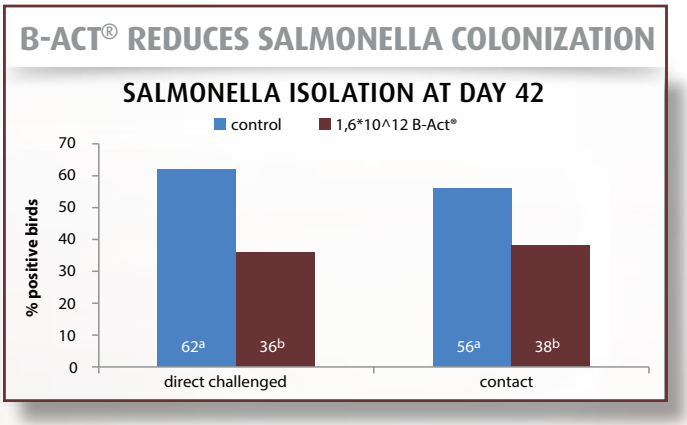


BENEFITS OF B-ACT®

Reducing pathogens

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

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

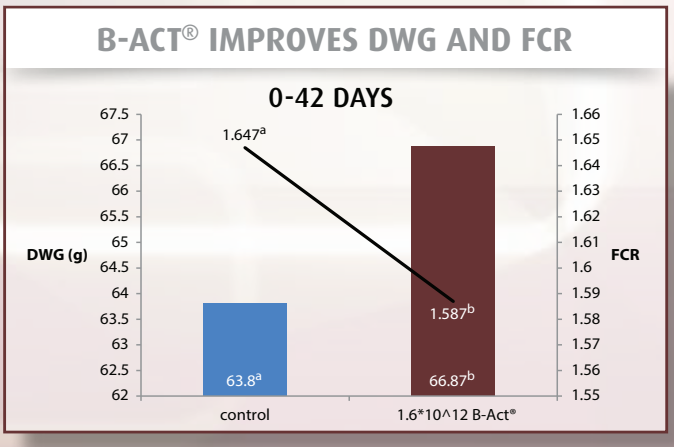


On a total of 400 Cobb broilers per treatment, 50% was orally gavaged with Salmonella heidelberg. At day 42, prevalence of Salmonella was evaluated in the caeca.

Increasing performance

B-Act® 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.

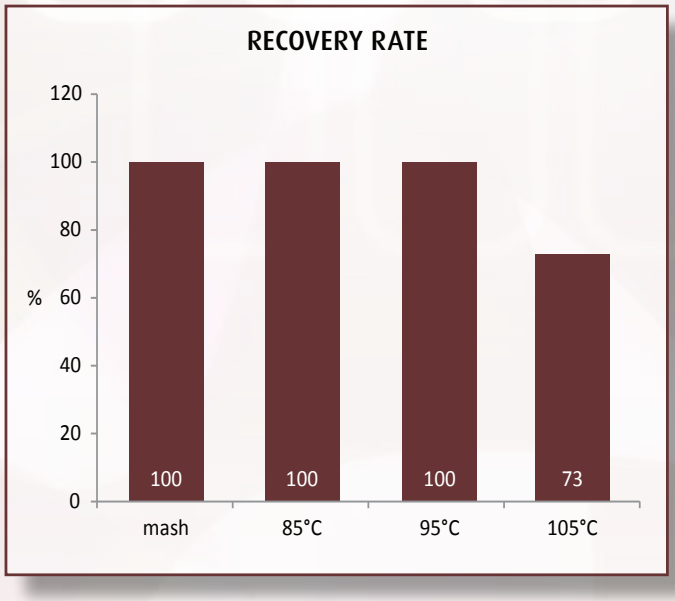


Daily weight gain and FCR were calculated for 480 Ross broilers per treatment at day 42.

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STABILITY

B-Act® has a shelf-life of 24 months and is extremely stable. B-Act® 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® at 85°C, 95°C and 105°C with conditioning during 90s.

DOSE RECOMMENDATIONS

cfu *Bacillus licheniformis* /g B-Act 100	Recommended dose of B-Act 100 /mton of feed	cfu *Bacillus licheniformis* /mton of feed
1.6×10^{10}	100g	1.6×10^{12}

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Simply the best



CONCLUSION

B-Act®:

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

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