

Trial results demonstrate BalanGut® LS's ability to support gut health and wellbeing

Table 1. MIC assay comparison of blend of short and medium chain fatty acid glycerides versus simple salts of butyric acid

| Tested product | pH | <i>S. typhimurium</i> | <i>C. perfringens</i> | <i>E. coli</i> | <i>Lactobacillus spp.</i> |
|---------------------|-----|-----------------------|-----------------------|----------------|---------------------------|
| Monoglyceride blend | 4.5 | 0.06% | 0.01% | 0.12% | No inhibition |
| Monoglyceride blend | 7 | 0.06% | 0.01% | 0.12% | No inhibition |
| Sodium butyrate | 6 | 2.8% | 3.0% | 2.9% | n.d. |

Source: G. Tosi, L. Alborali. WPSA-48th National Congress of the Scientific Association of Aviculture, April 2011.

In vivo data.

Trial 1. Male Cobb 500 broiler chickens challenged with a pathogenic strain of *C. perfringens*.

Necrotic Enteritis (NE) was as follows:

Day 4 & 9: IBD vaccination

Day 14 & 16: Coccidia-Vaccination with Hipracox and Paracox-8 (10-fold of recommended dose)

Day 18, 19, 20: Oral challenge with *Clostridia perfringens** (*Net B positive strain)

Treatment group as follows:

No challenge group: No Challenge No feed additive added to the diet

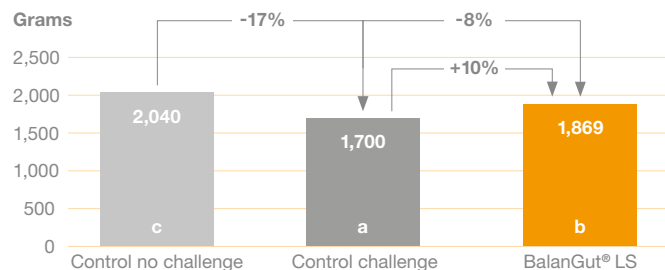
Challenge no treatment group: Challenged with *C. perfringens* no feed additive in diet

BalanGut® LS group: Challenged with *C. perfringens* supplemented with BalanGut® LS 3kg/MT feed

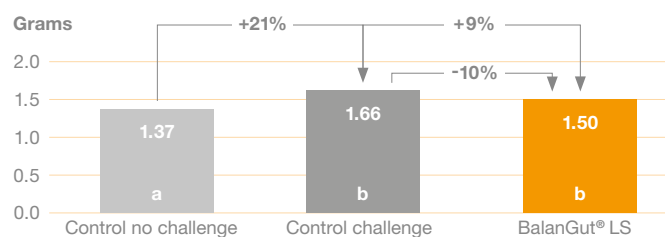
abc superscripts mean that values are statistically different (P<0.05; Tukey adjustment)

Internal reference: TID-24-17

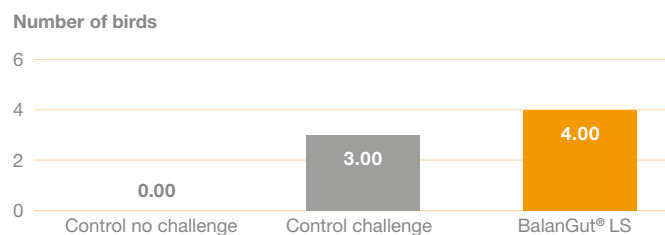
Body weight (day 36)



FCR (day 16-36)



NE mortality (number of birds 16-36)



Choose the BalanGut® LS formulations that are right for you

| Product name | Form | Application | Packaging | Article number |
|----------------|--------|----------------------------|-----------------------------------|----------------------|
| BalanGut® LS P | Powder | Livestock Pigs, Poultry | 25 Kg Paper bag 650 Kg Big bag | 50624860 50624881 |
| BalanGut® LS L | Liquid | Livestock Pigs, Poultry | 20 Kg Jerry can 1000 Kg IBC | 50624857 50624858 |

Also available for aquaculture

| | | | | |
|----------------|--------|-----------------------------|-----------------------------------|----------------------|
| BalanGut® AQ P | Powder | Aquaculture Fish, Shrimp | 25 Kg Paper bag 650 Kg Big bag | 50625849 50625855 |
| BalanGut® AQ L | Liquid | Aquaculture Fish, Shrimp | 20 Kg Jerry can 1000 Kg IBC | 50624702 50624706 |

Contacts

Asia/Pacific

BASF South East Asia Pte. Ltd.
Animal Nutrition, Asia/Pacific
7 Temasek Boulevard, #35-01
Singapore 038987
Singapore
Phone: +65-6337-0330
Fax: +65-6432-3298
E-mail: animalnutrition-asia-pacific@basf.com

Europe, Africa, West Asia

BASF SE
Animal Nutrition, Europe
Chemiestrasse 22
68623 Lampertheim
Germany
Phone: +49-62160-28073
Fax: +49-62160-28363
E-mail: animalnutrition-europe@basf.com

North America

BASF Corporation
Animal Nutrition, North America
100 Park Avenue
Florham Park, New Jersey 07932
USA
Phone: +1-800-527-9889
Fax: +1-973-245-6766
E-mail: animalnutrition-north-america@basf.com

South America

BASF S.A.
Animal Nutrition, South America
Avenida das Nações Unidas 14.171-10th floor
04794-000 São Paulo SP
Brazil
Phone: +55-11-2039-2292
Fax: +55-11-2039-2344
E-mail: animalnutrition-south-america@basf.com

This document, or any information provided herein does not constitute a legally binding obligation of BASF and has been prepared in good faith and is believed to be accurate as of the date of issuance. Unless expressly agreed otherwise in writing in a supply contract or other written agreement between you and BASF:

- (a) To the fullest extent not prohibited by the applicable laws, BASF EXPRESSLY DISCLAIMS ALL OTHER REPRESENTATIONS, WARRANTIES, CONDITIONS OR GUARANTEES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, WRITTEN OR ORAL, BY FACT OR LAW, INCLUDING ANY IMPLIED WARRANTIES, REPRESENTATIONS OR CONDITIONS OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, SATISFACTORY QUALITY, NON-INFRINGEMENT, AND ANY REPRESENTATIONS, WARRANTIES, CONDITIONS OR GUARANTEES, ARISING FROM STATUTE, COURSE OF DEALING OR USAGE OF TRADE and BASF HEREBY EXPRESSLY EXCLUDES AND DISCLAIMS ANY LIABILITY RESULTING FROM OR IN CONNECTION WITH THIS DOCUMENT OR ANY INFORMATION PROVIDED HEREIN, including, without limitation, any liability for any direct, consequential, special, or punitive damages relating to or arising therefrom, except in cases of (i) death or personal injury to the extent caused by BASF's sole negligence, (ii) BASF's willful misconduct, fraud or fraudulent misrepresentation or (iii) any matter in respect of which it would be unlawful for BASF to exclude or restrict liability under the applicable laws;
- (b) Any information provided herein can be changed at BASF's sole discretion anytime and neither this document nor the information provided herein may be relied upon to satisfy from any and all obligations you may have to undertake your own inspections and evaluations;
- (c) BASF rejects any obligation to, and will not, automatically update this document and any information provided herein, unless required by applicable law; and
- (d) This document or any information provided herein must not be used for purposes of pharmaceutical registrations.

If you have any further questions or need additional support, please contact your BASF sales representative.

Warning: Some claims not valid in the United States

Some of the claims and other information presented in the following materials are informational in nature and may not be used in any promotion, marketing, or information relating to products intended for sale in the United States, or communicated to U.S. consumers. Such prohibited claims are identified on the applicable slide. The prohibited claims and information are outside of the scope of authorized claims allowed by U.S. Food and Drug Administration (FDA) regulations, and may not meet legal, regulatory, and/or scientific standards for such claims under U.S. law. Use of these prohibited claims in the U.S. may result in administrative, civil, or criminal liability for the disseminator under laws and regulations enforced by U.S. government authorities. BASF and its affiliates specifically prohibit and disclaim the use or targeting of such claims to a U.S. audience and are not liable for any such claims made by the disseminator.

© Registered trademark of BASF in several countries

BASF
We create chemistry

BalanGut® LS
The right balance for
a healthy gut and
sustainable wellbeing



The unique mixture of naturally occurring monoglycerides of short and medium chain fatty acids.

- Supports enteric microbial balance
- Improves gut integrity
- Supports animal wellbeing

The science of sustainable feed that succeeds

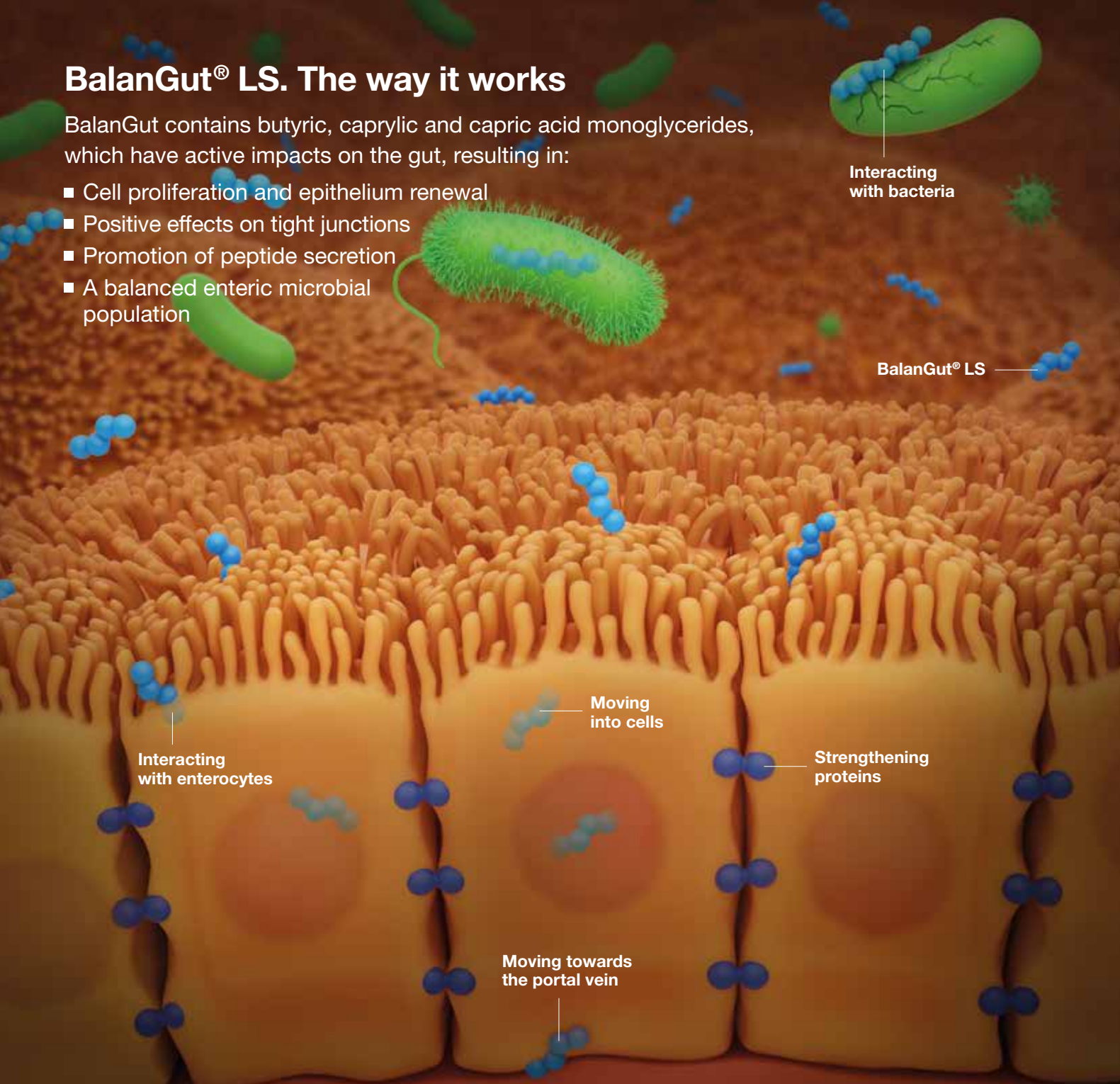
animal-nutrition.basf.com

02_202106_03

BalanGut® LS. The way it works

BalanGut contains butyric, caprylic and capric acid monoglycerides, which have active impacts on the gut, resulting in:

- Cell proliferation and epithelium renewal
- Positive effects on tight junctions
- Promotion of peptide secretion
- A balanced enteric microbial population

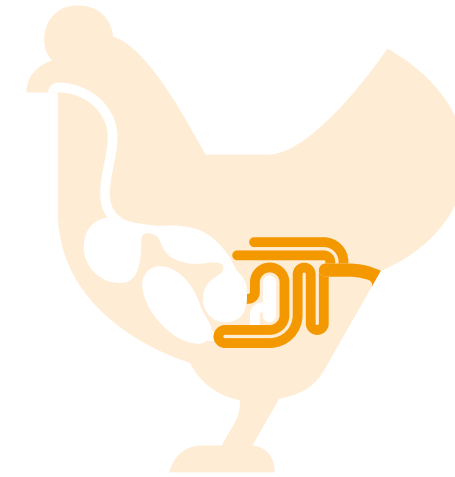


A healthy gut is the key to a healthy bird

Far more than being just a digestive organ, the gut is key to every aspect of birds' health, wellbeing and performance. BalanGut® LS is proven to play a vital role in this, restoring gut integrity, supporting beneficial bacteria and the bird's own defense system. So it can help you create feed that delivers for the animals, your business and your customers, while meeting the demands of the market and consumers. Sustainable feed that succeeds.



Where it works



BalanGut® LS's main active ingredients of monoglycerides of butyric, caprylic and capric acids are delivered via feed and are active throughout the intestine.

Support intestinal health and animal wellbeing

The unique mixture of naturally occurring monoglycerides of short and medium chain fatty acids in BalanGut® LS supports:

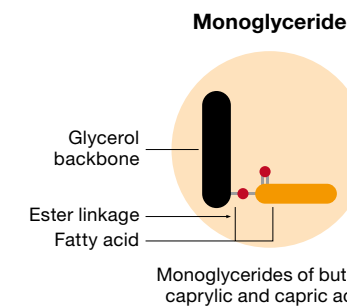
- Strengthening of intestinal health
- Intestinal resilience
- Improved livability
- Economic and ecological sustainability

BalanGut® LS is a sustainable solution that fosters gut balance and good health of the animal.

Extra protection and ease of handling

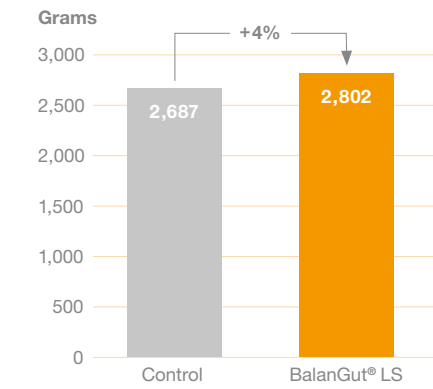
The presence of ester bonds ensures:

- Non-corrosivity
- Heat stability
- Non-volatility
- Non-pungent smell
- A pH-independent action in the gut

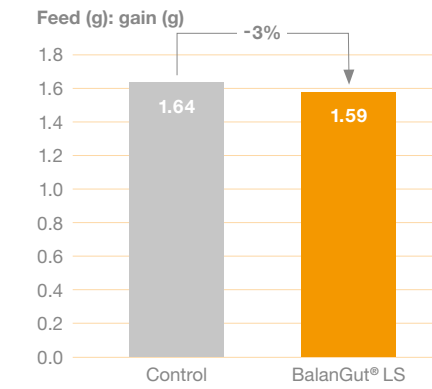


Results show BalanGut® LS's positive impacts on broilers

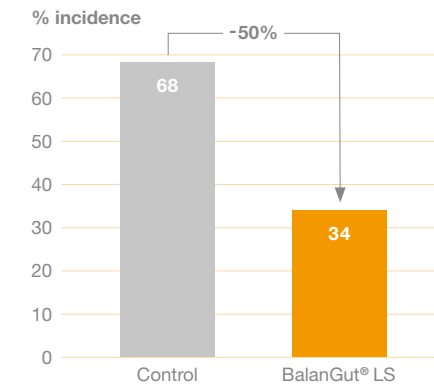
Avg. body weight, g (day 42)



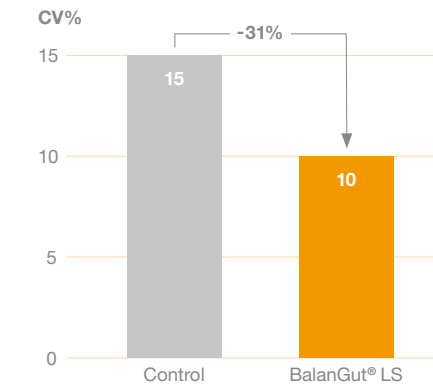
FCR (day 1-42)



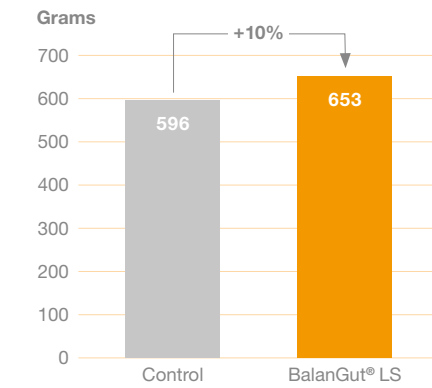
Foot pad lesions (day 42)



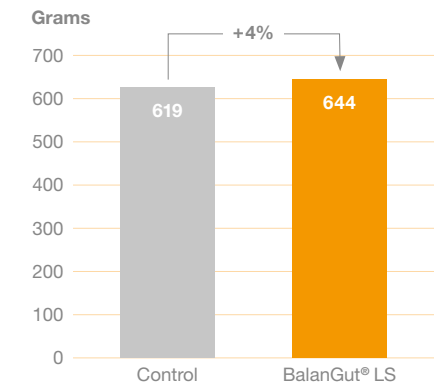
Uniformity, CV% (day 42)



Carcass yield, leg weight, g (day 42)



Carcass yield, breast meat, g (day 42)



Trial 2. Broiler chickens raised under optimal clean research conditions supplemented with BalanGut® LS at 500g/MT feed.