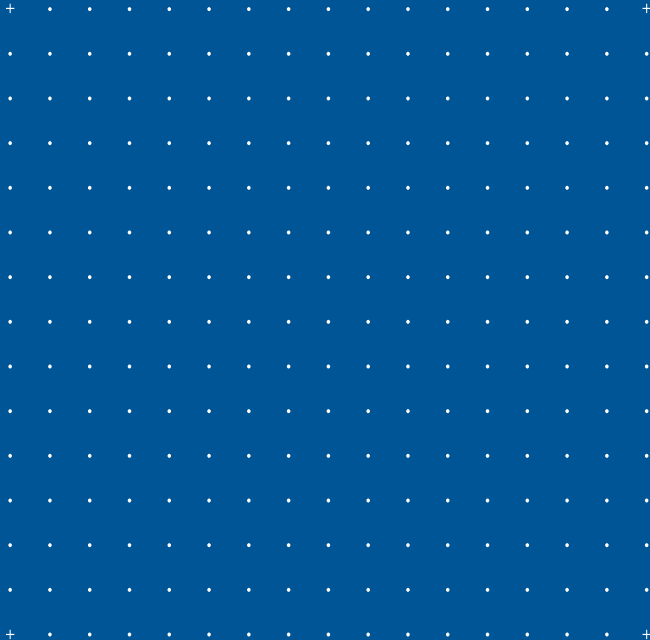
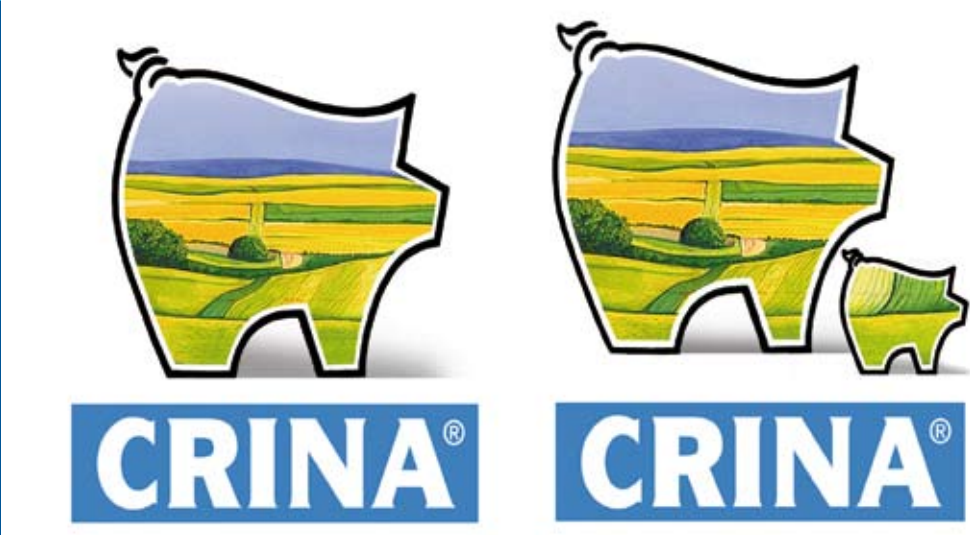


CRINA[®] Piglets

CRINA[®] Finishing Pigs and Sows

a **DSM** Product



Bringing the best in nature to life

Many plants produce secondary compounds as a defense system against predation, insect attack or bacterial attack. For 5000 years, man has used secondary plant compounds in the form of essential oils as flavors and for antimicrobial properties.

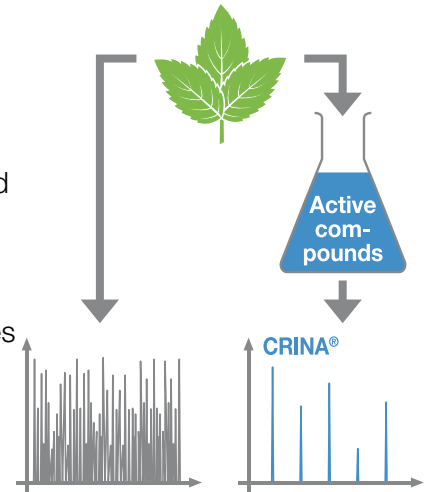
Designed to perform

Today's trend towards the replacement of in-feed antibiotic growth promoters to improve gut health has driven pioneering research activities at CRINA®.

Following extensive research, a range of precisely formulated and consistent blends of essential oil compounds of high purity, marketed under the CRINA® trademark, was developed.

CRINA® Piglets is intended for the weaning and post weaning stage of young piglets, where higher attention to microbial health challenges is required. CRINA® Finishing Pigs and Sows has been developed to stimulate feed intake and performance in grower-finisher pigs and sows.

Not only can essential oil compounds function individually, but they can also act synergistically to enhance pig performance.



CRINA® Piglets and CRINA® Finishing Pigs and Sows work in different ways

- Positive modulation of gut microbial flora

- Stimulation of production of endogenous enzymes
>>> feed digestion is enhanced and less substrate is available for gut fermentation.

Pancreas

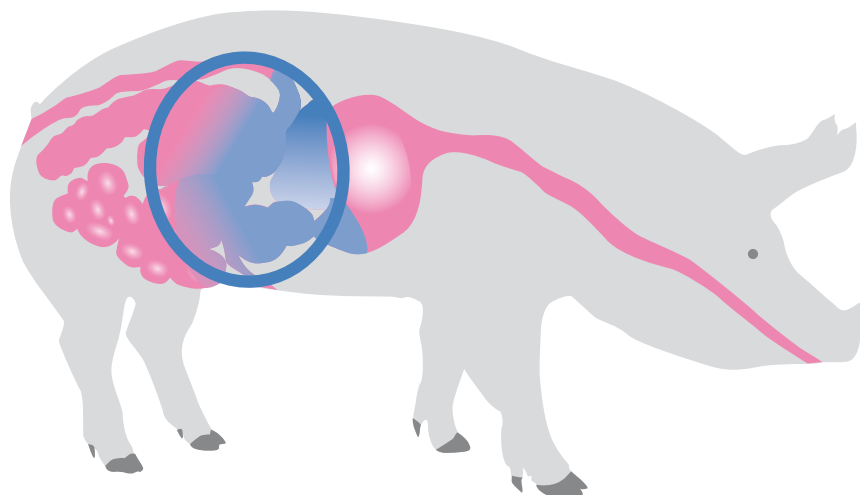
Stimulation of the secretion of endogenous enzymes (lipases, amylases, trypsin)

Small intestine

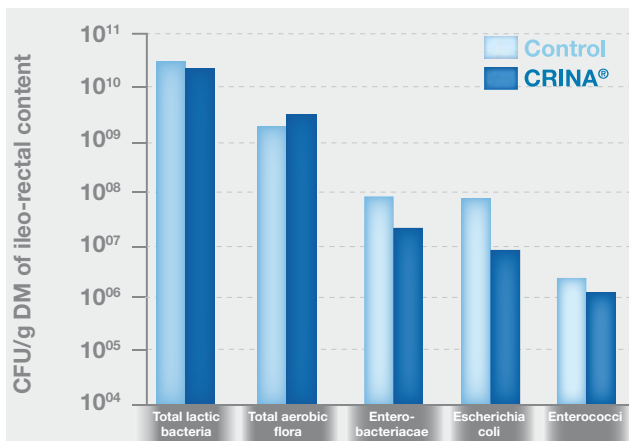
Stimulation of secretion of digestive enzymes, anti-inflammatory activity, modulation of the gastrointestinal microflora

Large intestine

Anti-inflammatory activity, modulation of the gastrointestinal microflora



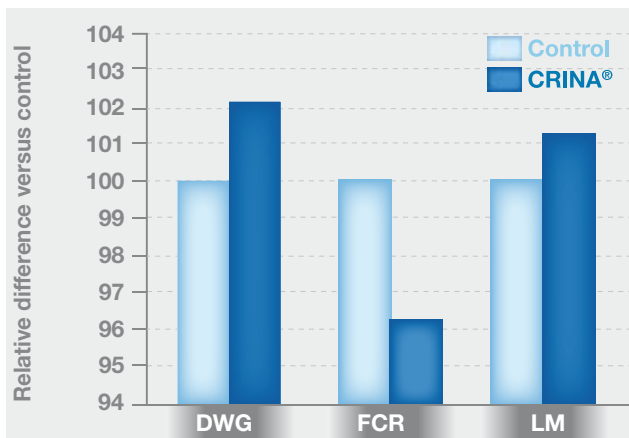
Performance



DSM research station France, 2006

Piglets

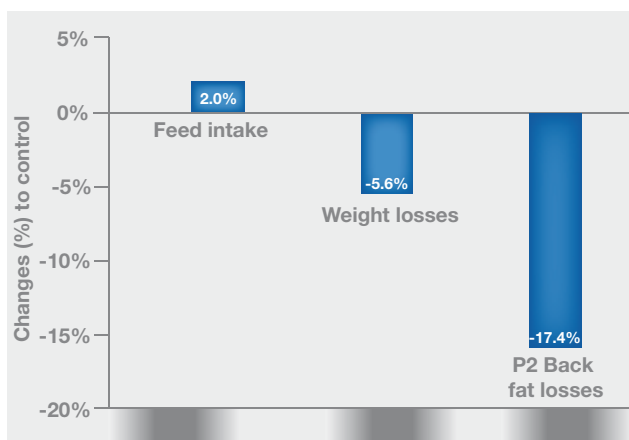
Trials at the DSM Research Station in France identified a modulating effect on Enterobacteriaceae and total E.coli when CRINA® Piglets was added to the diet of piglets compared to a control diet.



Customer field trial, Germany, 2003

Finishing Pigs

A commercial field trial in Germany showed the improvement in daily weight gain, feed conversion ratio and lean meat percentage when CRINA® Finishing Pigs and Sows was added to the diet.



U.K. (2006)

Sows

CRINA® Finishing Pigs and Sows has shown that it can assist sows in lactation to reach their performance potential through the stimulation of feed intake and endogenous enzyme production thus resulting in a reduced body weight loss and reduced P2 back fat loss.



Economics – Improved Profit Margin

Promising results from a series of 10 research and commercial studies have shown that feed supplementation with CRINA® Piglets increased daily weight gain and improved feed conversion. This gives a valuable return on investment of 1 : 5.

CRINA® Finishing Pigs and Sows has been extensively tested and showed a return on investment in sows of 1 : 10 and in growing / finishing pigs 1 : 4.

Recommendations

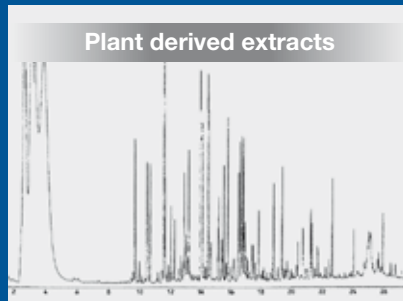
	Product	Recommended Dosage
Piglets (suckling and newly weaned)	CRINA® Piglets	100 – 200 mg/kg feed
Growing and Finishing Pigs	CRINA® Finishing Pigs and Sows	75 – 150 mg/kg feed
Sows (gestation and lactation)		

Supplementation levels should be adapted according to local conditions.

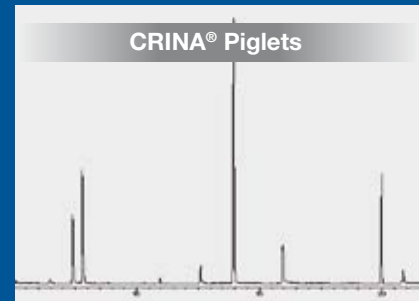
CRINA® Piglets and CRINA® Finishing Pigs and Sows: all active ingredients appear on the European community register of feed additives.

DSM Quality you can trust

As market leader, DSM Nutritional Products constantly strives to maintain and advance its own high quality standards. The aim is not only to be the benchmark for the industry but also to give our customers the peace of mind that only comes with a superior quality supply.



Plant derived extracts can show high variation in composition. In addition seasonal variations can have a significant effect on purity.



With CRINA® Piglets and CRINA® Finishing Pigs and Sows we select the most promising compounds of high purity and combine them in a unique blend – adapted to animal needs.

CRINA® Piglets and CRINA® Finishing Pigs and Sows are part of the Eubiotic product portfolio of DSM Nutritional Products.

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