

PROBENA

PRODUCTOS EN BENEFICIO DE LA NATURALEZA

The inclusion of Biocitro® in feed and drinking system allows the animals to take advantage of the benefits of **VITAMIN C** and **CITRUS BIOFLAVONOIDS**

Biocitro®

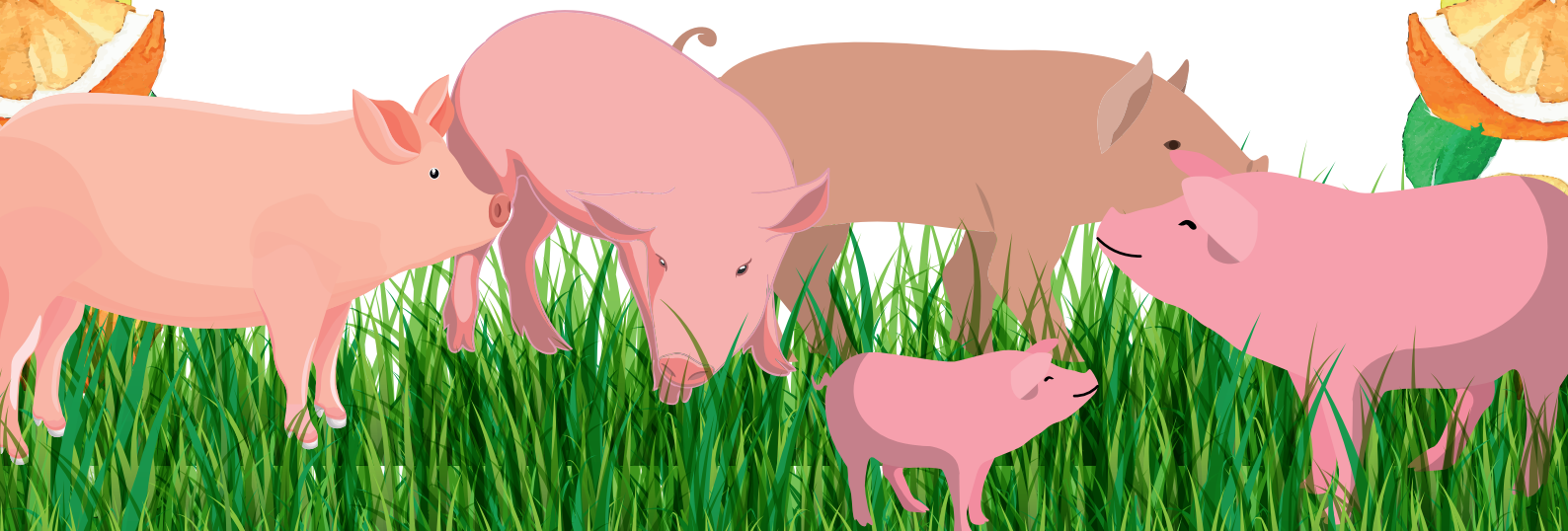
IN SWINE PRODUCTION



Can be used in **ecological production** according to the Regulation (CE) 889/2008



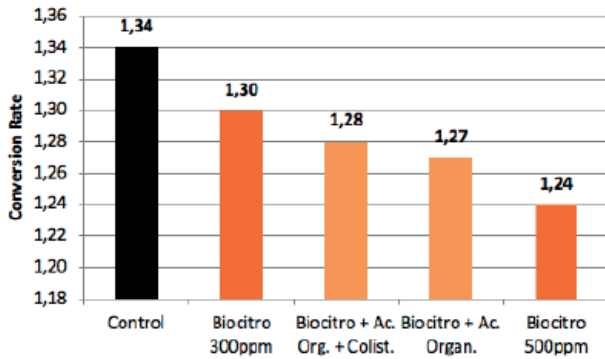
FAMIqs
European Family Allowance and Pig Production Quality System



Biocitro[®] IN SWINE PRODUCTION

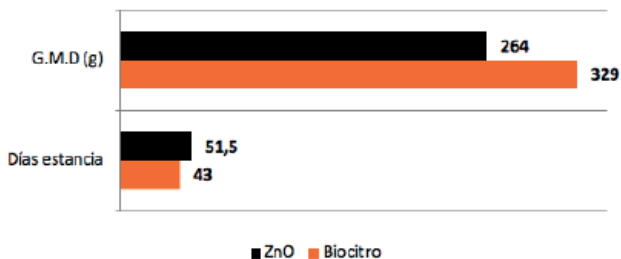
FIELD EFFECTIVENESS

PRODUCTIVE RATES IN PIGLETS



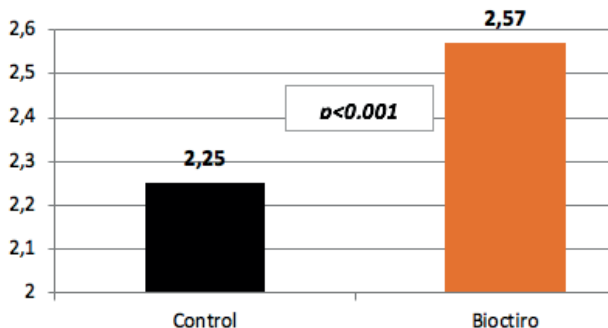
"Effect of different levels of Biocitro in piglet productivity"
Piñeiro, C., Rodríguez, E. PigCHAMP Pro Europa S.A.,
Proinserga I+D.

BIOCITRO VS. OXIDO DE ZINC IN WEANED PIGLETS



"Efficacy of Biocitro vs Óxido de Zinc in weaned piglets"

IgG AGAINST PORCINE CIRCOVIRUS TYPE 2



"Effect of Biocitro as immunity enhancer in piglets" Grandia J., Sarasa R., Aznar B. Agro-Test-Control, S.L.

Protection of the immune system, promoting its natural stimulation



- Improves the nutritional efficacy, optimizing productive rates.
- Reduces stress and its consequences.
- Synergistic effect with acidifiers and other plant extracts.
- Improves intestinal iron absorption in piglets.
- Promotes litter homogeneity.
- Improves the physiological recovery of the sow during the lactation period...

BACKFAT THICKNESS

	Farrowing	Weaning
Control	16,94	13,33
Biocitro	15,71	15,21

..reducing the weaning-effective insemination interval.

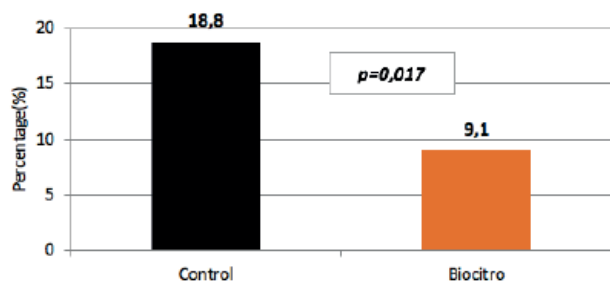
WEANING-EFFECTIVE INSEMINATION INTERVAL

Control	5,667 ± 0,820
Biocitro	4,786 ± 0,214

• Quicker and more competent reincorporation into the productive cycle, increasing the number of birth per sow and year.

• Biocitro is part of a strategy in animal production without antibiotics.

PIGLET MORTALITY DURING THE LACTATION PERIOD



- Minimizes productive losses in mortality.
- Improves general health status.
- Improves the effectiveness of vaccine programs.
- Contributes to control Clostridia, Salmonella, E.coli, Brachyspira hyodysenteriae and M. M. A. Syndrome

LABORATORY EFFECTIVENESS

- Bacteriostatic and bactericidal activity against Gram+ y Gram- bacteria.

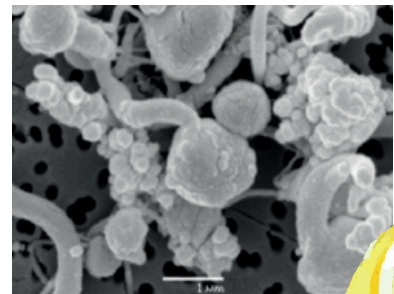
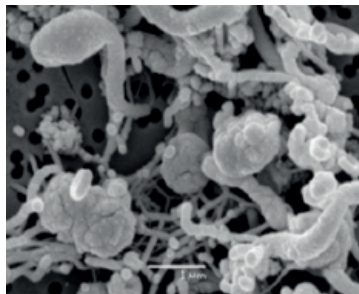
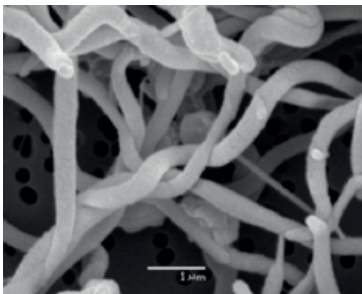
ANTIMICROBIAL ACTIVITY OF BIOCITRO

	CIM (ppm)	CMB (ppm)
<i>Escherichia coli</i>	64/128	128
<i>Salmonella entérica spp</i>	64/128	128/256
<i>Clostridium sp</i>	16/32	16/64
<i>Campylobacter sp</i>	32	32
<i>Staphylococcus aureus</i>	16/64	32/64
<i>Brachyspira hyodysenteriae</i>	32/128	32/128

- Bacteria biofilm inhibition (*E. coli* and *Clostridium perfringens*).
- Biocitro damages the integrity/permeability of bacterial cell membranes.



Biocitro® action on *Brachyspira hyodysenteriae*: lesions in the cell wall as well as wall protrusions (small vesicles) due to the antimicrobial effect.

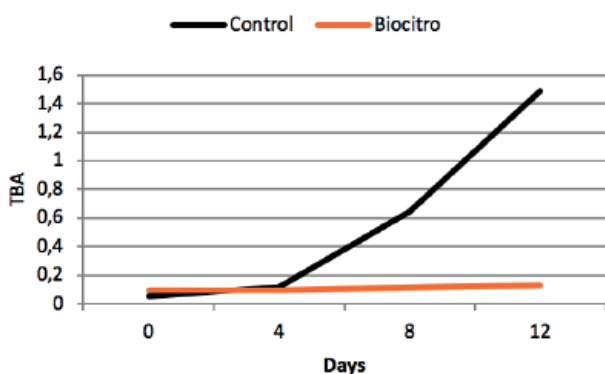


"BIOCITRO: ANTIMICROBIAL ACTIVITY. Effectiveness and action mode"
DIGESPORC: Grupo de Investigación en Enfermedades Digestivas del Ganado Porcino. Facultad de Veterinaria, Universidad de León.

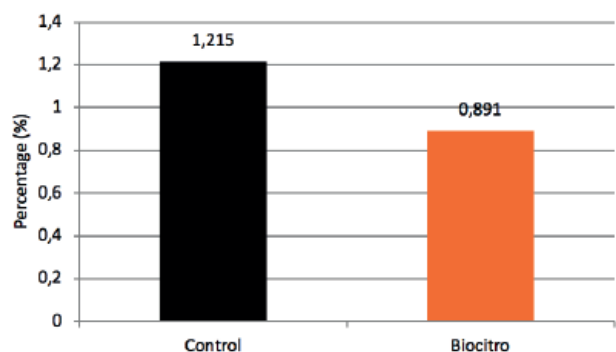
MEAT QUALITY

- Improves meat quality.
 - Reduces oxidation.
 - Increases shelf-life, minimizing losses in commercialization.
 - Increases the level of monounsaturated fatty acids (oleic acid) and the appearance of Omega-3 acids.

OXIDATION: TBA VALUES EVOLUTION



WATER LOSSES



"Biocitro® antioxidant effect in meat quality"
C. López Bote, F. Veterinaria U. C. M.; G. Omega; Probená, S.L.

Persistence of post-mortem antioxidant ability of Biocitro® in the pig carcass" Technical Department, PROBENA S.L.

SWINE FEEDING PROGRAM

PRODUCTIVE PHASE	FEED USES (g/tm) Biocitro powder	Biocitro 20
Milk replacer	400	2.000
Prestarter (1)	300-400	1.500-2.000
Starter (1)	200 -300	1.000-1.500
Post-weaning (1)	150 - 250	750-1.250
Growing (1)	200-400	1.000-2.000
Fattening (meat quality) (2)(4)	100-200	500-1.000
Gestation sows (4)	100-200	500-1.000
Lactation sows (3)	125-200	650-1.000
Boars (Improves semen quality and anti-stress)	100-150	500-750

- (1) Use the higher dosage if the animals have not previously had Biocitro in the feed.
 (2) Nutritional efficacy and meat quality enhancer, replace antibiotic growth promoters.
 (3) Use the higher dosage if Biocitro was not included in the Feed during pregnancy.
 (4) High dosage to help in the prevention of Clostridiosis.

PRODUCTIVE PHASE	DRINKING SYSTEM USES (ml/l)	Biocitro L-15
Piglets	During first weeks of age, continuously	1-1,2
	Post-weaning, post-vaccination, transport, stress situation, during 10 to 15 days.	0,8-1,2
Growing Pigs:	During the growing period - one week per month if it is not included in feed	0,5-0,7
	To reinforce the immune response during periods of stress - 8-10 days	1-1,5
Boars:	In high performances periods, high temperatures, anti-stress; continuously	0,5-1
Sows:	To reduce the effects of M.M.A. Syndrome and reinforce the immunity, anti-stress: Gestation : 2 weeks before farrowing and farrowing to weaning - daily	0,5-0,7

Presentations:

- **Biocitro® Powder:** concentrated citrus extract to use as feed material in feed of all animal species. 20 kg bags.
- **Biocitro® 20:** 20% diluted Biocitro® powder on a carrier, to use in feed of all animal species. 20 kg Bags.
- **Biocitro® L-15:** 20% Biocitro® Liquid diluted, to use in drinking water system of all animal species. 5 and 25 liters bottles.

Please contact us for advice on how to use Biocitro® to achieve maximum results.

