ORSENTIAL™ Liquid

BETTER IN-FARM PERFORMANCE WITHOUT ANTIBIOTIC GROWTH PROMOTERS (AGP)

KEMIN®
INTESTINAL HEALTH

ORSENTIAL™ Liquid

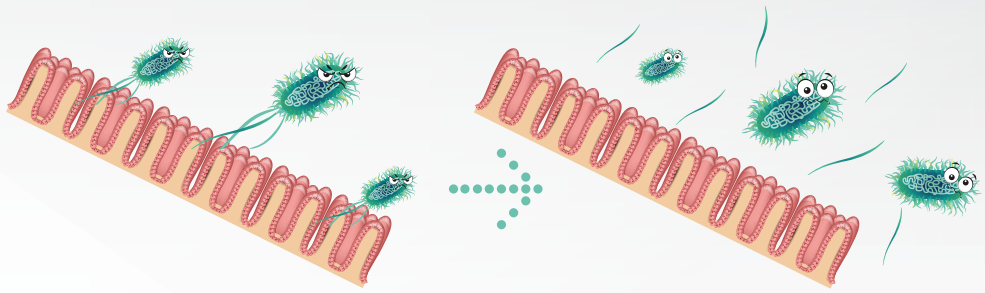
ORSENTIAL™ Liquid, a unique drinking water additive for livestock production, contains oregano essential oil extracted from natural oregano plant. It exhibits strong antimicrobial properties and anti-inflammatory activity, improving the intestinal health of livestock. It can be used as an alternative to some antibiotic growth promoters to improve the growth performance of farm animals.

MODE OF ACTION | The actions on bacteria

Decrease motility

Inhibit the synthesis of flagellin from pathogen, so they can't attach to epithelium cell in the gut.

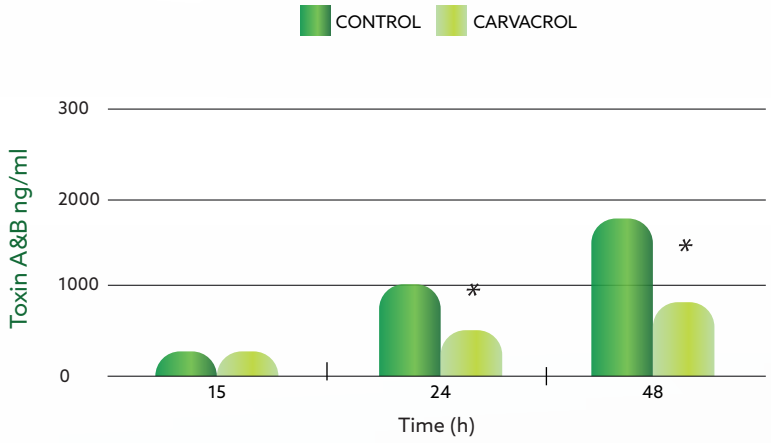
Carvacrol Induces Heat Shock Protein 60 and Inhibits Synthesis of Flagellin in Escherichia coli O157:H7. Sara A. Burt,1*



Reduce toxin secretion

Significantly reduce toxin production from *Clostridium difficile*. *C. difficile* toxins lead to inflammation in the intestine, increased epithelial permeability and causing direct damage to the intestinal mucosa and lead to diarrhea.

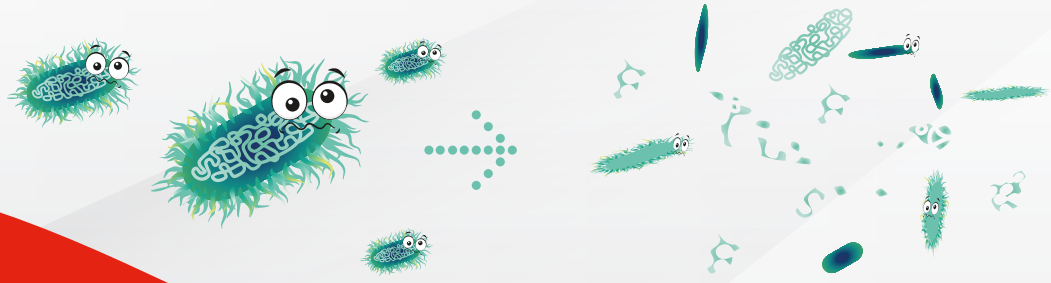
Carvacrol and trans-Cinnamaldehyde Reduce Clostridium difficile Toxin Production and Cytotoxicity in Vitro. Shankumar Mooyottu 1, Anup Kollanoor-Johny 1, Genevieve Flock 1, Laurent Bouillaut 2. 2014



Change the membrane potential

Disturbed the membrane integrity, increased membrane permeability and caused the leakage of protons and potassium, finally leading to the loss of membrane potential.

The antibacterial mechanism of carvacrol and thymol against *Escherichia coli*. J. Xu, et. Al., 2008



KEMIN INTESTINAL HEALTH

ORSENTIAL™ Liquid trial on broilers

A trial with total 87,040 broiler (AA & COBB) chicks was conducted in a broiler integrator to evaluate the efficacy of ORSENTIAL™ Liquid on broiler performance.

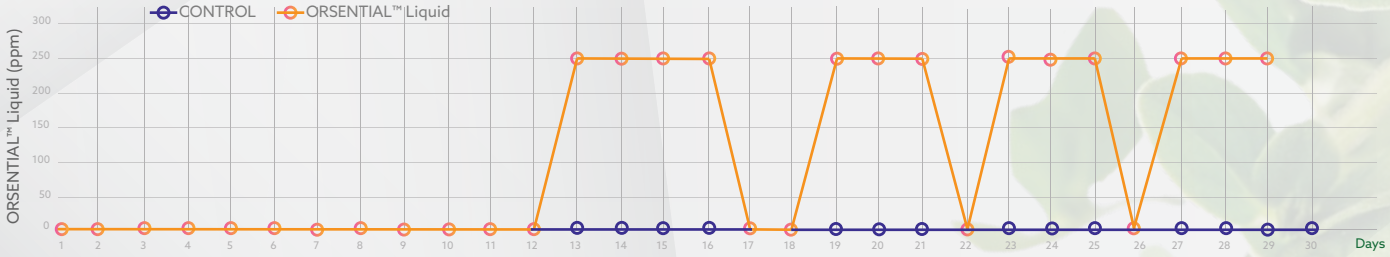


Figure 1. Medication schedule for ORSENTIAL™ Liquid in drinking water from day 13. Applied by dosing pump for 8 hours per day.

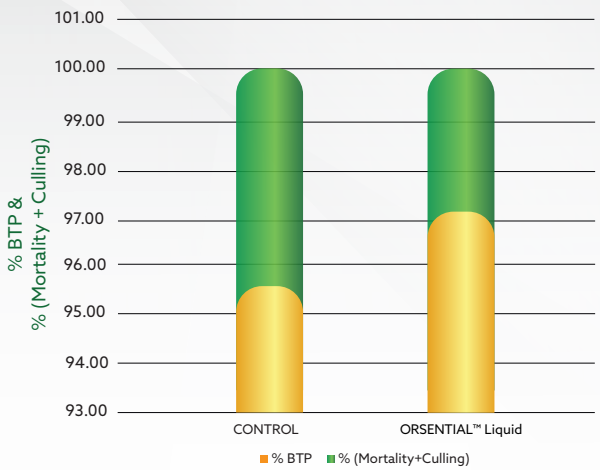


Figure 2. Percentage of birds return to processing plant (BTP) and percentage of mortality plus culling

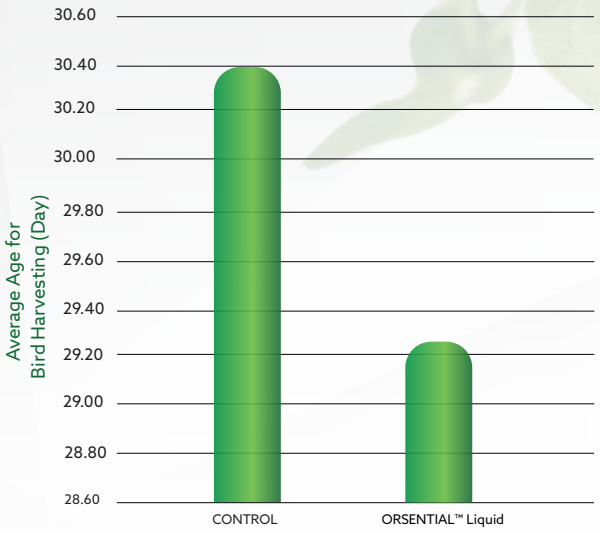


Figure 3. Average age for bird harvesting

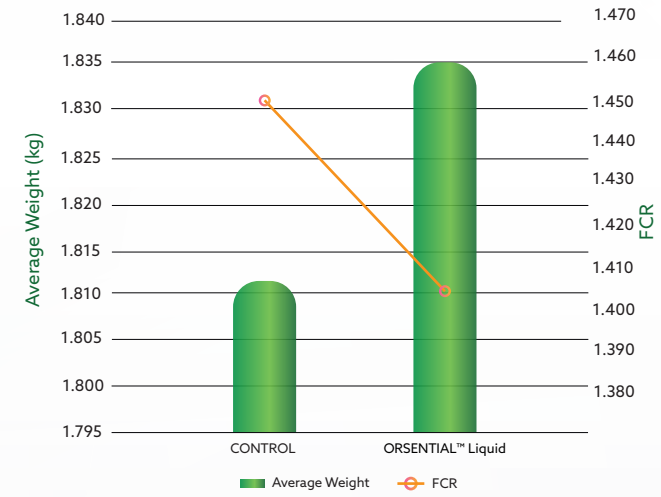


Figure 4. Average weight (per bird) and FCR

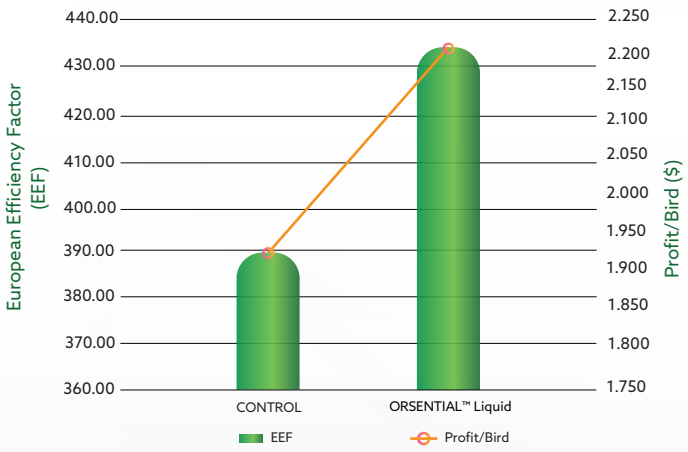


Figure 5. EEF and Profit per

Group	DOC No.	Processing rate%	Avg Age	Avg BW	FCR	Mortality+ Culled %	EPI
ORSENTIAL™ Liquid	43,520	97.06	29	1.83	1.40	2.94	433.75
Control	43,520	95.57	30	1.81	1.46	4.43	389.56

ORSENTIAL™ Liquid increased the Average Body Weight (Avg BW) of broilers and improved the Feed Conversion Ratio (FCR) and Mortality Rate compared to the control group. Therefore, leads to a higher production index and generated more profits.

ORSENTIAL™ Liquid MIC test with local isolated pathogens

A Minimum Inhibitory Concentration (MIC) test was conducted in Taiwan to check the inhibition effect of ORSENTIAL™ Liquid on several local isolated strains of common pathogens.

	MIC 50
Salmonella spp.	***<0.5%***
Staphylococcus spp.	***<0.5%***
Gallibacterium anatis	***0.063%***
Riemerella anatipestifer	***<0.008%***

Source: SD-21-23238

- Salmonella spp. x 4 strains
- Staphylococcus spp. x 4 strains
- Gallibacterium anatis x 4 strains
- Riemerella anatipestifer x 5 strains

Gallibacterium anatis is a Gram-negative bacterium of the Pasteurella family that resides normally in the respiratory and reproductive tracts in poultry. It is a major cause of oophoritis, salpingitis, and peritonitis, decreases egg production and mortality in hens thereby severely affecting animal welfare and overall productivity by poultry industries across Europe, Asia, America, and Africa.

Source: Vet Q. 2020; 40(1): 16–34.

Riemerella anatipestifer (RA) infection is a contagious disease (Infectious Serositis) in domestic ducks, turkeys and other fowl. It is encountered as acute or chronic septicemia and is characterized with serous fibrinous polyserositis. The respiratory tract could be also affected. The ducklings at the age of 18 weeks are especially susceptible. Clinically, sneezing, cough, trembling of the head and neck, ataxia and greenish diarrhea could be present.

Source: Vet Q. 2020; 40(1): 16–34.

ORSENTIAL™ Liquid application programs

For Broiler | 150 to 300 mL per 1,000 liter water

AGP replacement program: 4 days in the first week and 3 days per week for the last two weeks.

Boost performance program:
For white broiler – 3 days per week from day 1 to harvest.
For native broiler – 3 days per week for the first week and the last 4 weeks before harvest.

For Layer | 150 to 300 mL per 1,000 liter water

Salmonella reduction program: 3 days per every two-week during laying period.

AGP replacement program for pullet: 3 days per week

For Swine

Anti-inflammation program in sow: 2 mL per sow per day from 1 week before farrowing to weaning.

Reduce PWD (Post Weaning Diarrhea) program: 200 to 300 mL per 1,000 liters of water from 1 week before weaning to 2 weeks post weaning.

ORSENTIAL™ Liquid

Available in 1 kg, 5 kg, and 25 kg package. Shake well before using.
Please keep the lid closed and store in cool and dry indoor environment.

1 KG

5 KG

25 KG

THE WATER SERIES

THE WATER SERIES PROVIDE AHOLISTIC APPROACH TO FARM HEALTH CARE THROUGH DRINKING WATER

A healthy microbial balance is crucial for optimal nutrient utilization and animal performance. Positive effects on animals' performance can be achieved in 4 steps using products from The Water Series.

STEP 1 REDUCE PATHOGEN AND REMOVE BIOFILM IN DRINKING WATER

STEP 2 IMPROVES MICROBIAL BALANCE IN THE INTESTINE

STEP 3 CONTROL COCCIDIOSIS

STEP 4 REDUCES STRESS AND IMPROVES IMMUNITY

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