

BIVIGRO

Create New Type of Feed Additive

CJ 170®

Enteric Coated Essential Oil

Treats intestinal Infections
Improve intestinal development
Feed attractant



BIVIGRO ANIMAL HEALTH LIMITED

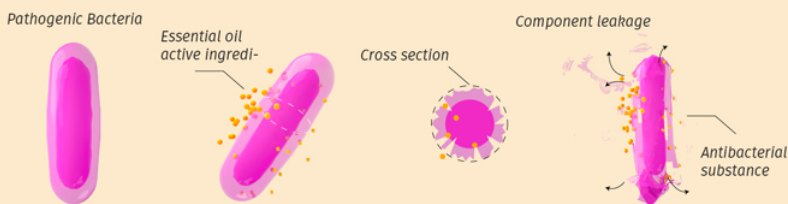
01 CJ170® The Benefits

CJ170 is the brand of enteric essential oil granules which provides significant role in nutrition absorption, immunity, antibacterial to improve animal performance, it is safety and high efficiency to be used in the whole animal breeding period.

Two Unique Functions The Amazing CJ170

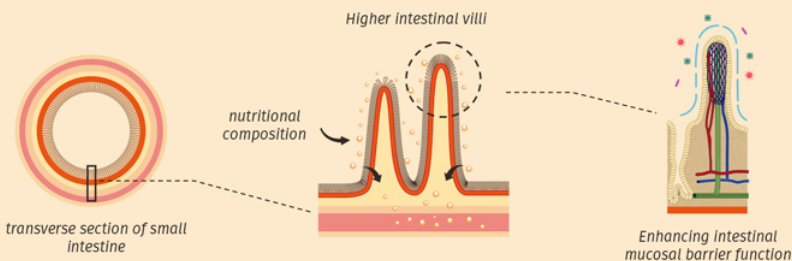
1 Effective antibacterial function to maintain intestinal health

The active ingredients contained in CJ170 has strong surface activity and fat solubility, which capable to quickly penetrating cell membranes of pathogen to causing leakage of cell components and loss of water to make it death.



2 Improve intestinal development to enhance nutrition absorption rate

CJ170 can accelerate the update rate of intestinal epithelial cells, reduce infection of intestinal epithelial cells by pathogens, stimulating secretion of digestive juices such as saliva, bile acid, and mucus, improve vitality of digestive enzymes, enhance digestion and absorption functions to improve feed utilization.



Treats Enteritis



The bacterial enteritis can be treated within 2days by using CJ170 if mix with feeds at dosage of 1kg per ton feeds, the chicken manure will turn to dry. The healthy intestine without enteritis means the nutrition absorption basically has been assured.

Develop Intestines



CJ170 especially improve the height of intestinal villi and promote intestinal length, enlarge the nutrition absorption area, enhance nutrients absorption and utilization.

The animal intestines will be longer and thicker which effective improve nutrition absorption after regular use of CJ170

CJ170[®] Product Features 02

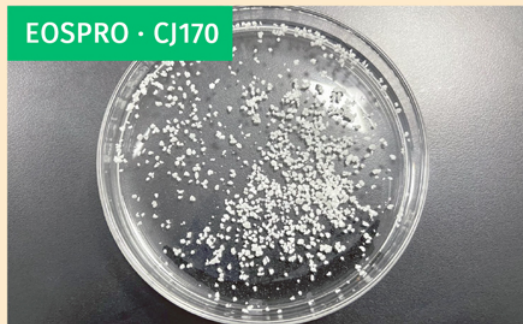
We make essential oil into enteric coated granules to be controlled-released in intestinal tract to antibacterial and promote intestinal health

Characters of dissolution of intestine

The core strengths are to ensure effective ingredients of essential oil can be controlled released in posterior intestinal tract.

To achieve above purpose, we are using liquid phase embedded technology to coating gastric acid-resistant materials onto the surface of essential oil to make it into solid granules, to provide CJ170 can be released when meet responsive pH values.

CJ170 provides the ability of to be slowly released in intestinal pH but insoluble in stomach pH, this can avoid irritation to animal stomach and destruction for its active ingredients by gastric acid, which makes it can play its max effectiveness.



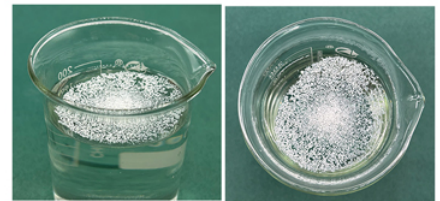
Under the simulated gastric fluid PH4.0 condition, there was no coating damage and no essential oil precipitation within 60 minutes. which means that the coated particles are intact and can pass through the stomach smoothly and reach the intestine to play effect



We can find the no coated essential oil granules was precipitated within 30 minutes under the simulated gastric fluid PH4.0 condition, (the precipitated essential oil in the red box was floating on the simulated gastric fluid surface). On behalf of ordinary particles cannot reach the small intestine

Characters of enteric coated

By using the advanced liquid phase embedded technology to coating essential oil into granules, it provides with the characters of anti-water and anti-gastric acid.



The simple trial shows, CJ170 can be directly floating on the surface of water, and it will not sink into the bottom after 3-5hours, this proves the ideal coating CJ170 can successfully passed the damage of stomach to be with the characters of only release in intestines.

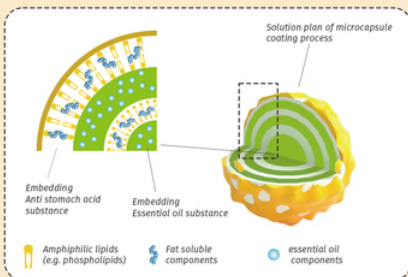
CJ170[®] Product Features 03

CJ170 capable with more toughness and more stable characters which more suitable for feed mill production pelleting process or farmer to directly mix into feeds

Break through traditional production process Give the CJ170 new characters for application

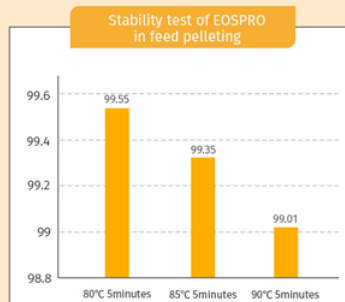
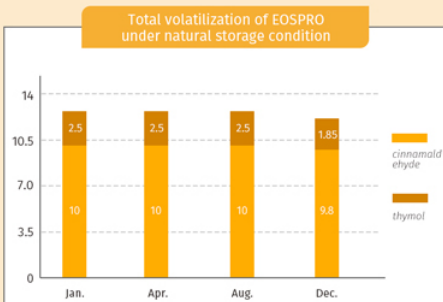
Special Coating Process

Traditional enteric coated particles are brittle, thin, and fragile during mixing or granulation for animal feeds, which can easily cause oil leakage and volatilization loss, but CJ170 uses special coating materials and production technology to make its particles more resilient.



Advantages of CJ170 in feed pelleting process

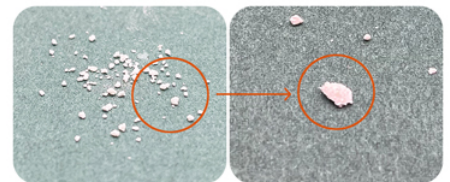
CJ170 has strong toughness, anti-heat and stable store ability, which can withstand physical extrusion and will not be broken in process of feed pelleting by feed mills, to ensure that the essential oil coated particles can be completely preserved in the pellet material, smoothly pass through the animal stomach and release in intestinal tract.



Contrast Between Traditional Coated granules with CJ170



Traditional enteric coated particles are brittle, thin, and fragile, it is very brittle after being crushed, and then, the essential oil will be leak out and lost its active ingredients, meanwhile, it is not anti-heat and not suitable for feedmill pelleting process



CJ170 with the unique production process, the coated granules are almost soft and with good toughness, it will squeeze to form a piece but will not break out, and the essential oil will not leak out, this assure the active ingredients will not be lost, more suitable for various conditions like feedmill pelleting or farmer self-mix into feeds.

CJ170[®] Trial Feeding For Broiler 04

CJ170 has unique growth-promoting function which inhibiting intestinal pathogens, reduce content of bacterial metabolites, improve intestinal development especially improve the height of intestinal villi and promote intestinal length, enhance nutrients absorption and utilization.

Feed Trial Conditions

A total of 3600 one-day-old healthy, yellow-feathered broilers randomly divided into 3 groups with 5 replicates, 240 broilers per replicate, trial last 70 days.

In the antibiotic group, 30mg/kg Virginiamycin was added to the basal diet.

300g/ton CJ170 was added to the basal diet.

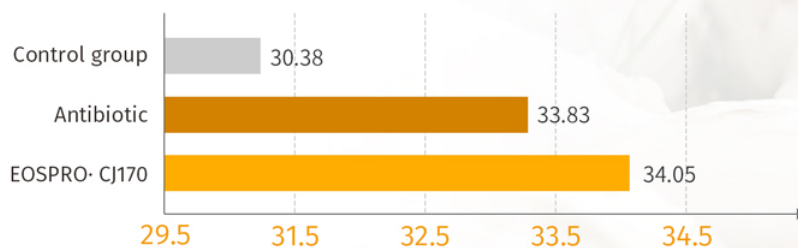
Effects of CJ170 on growth performance

		average daily gain/g	average daily feed intake/g	feed gain ratio
1-70 days	Control group	30.38	82.23	2.71
	Antibiotic	33.83	83.33	2.46
	EOSPRO · CJ170	34.05	83.79	2.46

Effects of CJ170 on slaughter performance

	eviscerated yield %	abdominal fat %	chicken breast muscle %	thigh muscle %
Control group	69.94	3.01	15.12	19.44
Antibiotic	71.68	3.05	16.02	20.58
EOSPRO · CJ170	72.35	3.29	16.54	21.67

EFFECT OF EOSPRO · CJ170 ON AVERAGE DAILY GAIN



CONCLUSION

Compared with the control group, the CJ170 group increased the average daily gain by

12%

05 CJ170® Trial Feeding For Layer

CJ170 active ingredients has strong surface activity to penetrate pathogens cell membranes, effectively treats for enteritis, salpingitis, cloacal infection, other funtion is accelerates the renewal rate of intestinal epithelial cells, promote growth of small intestinal villi to improve nutrient digestion and absorption.

Feed Trial Conditions

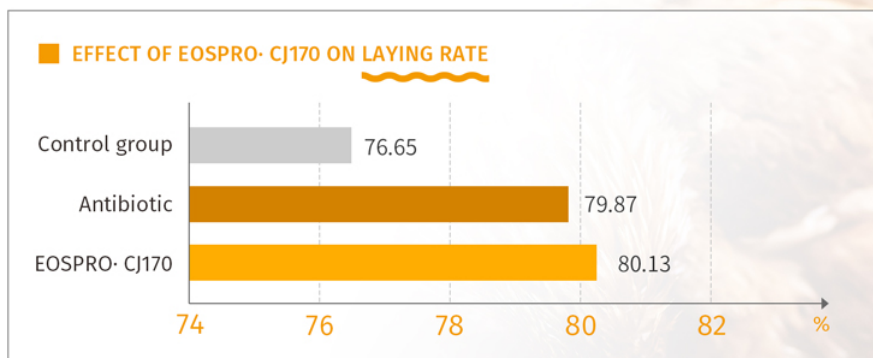
3072 Roman laying hens 48-week-old were randomly divided into 3 treatments with 8 replicates per treatment, 128 hens per replicate, trial lasted 56 days.

In the antibiotic group, 30mg/kg Virginiamycin was added to the basal diet.

300g/ton CJ170 was added to the basal diet.

	Effect of CJ170 for egg production			
	laying rate	average egg weight/g	average daily feed intake/g	feed egg ratio
Control group	76.65%	57.19	125.39	2.86
Antibiotic	79.87%	59.38	123.77	2.61
EOSPRO · CJ170	80.13%	60.12	123.78	2.57

	Effect of CJ170 for egg quality			
	eggshell weight/g	egg white weight/g	yolk weight/g	broken egg rate %
Control group	5.75	35.27	16.26	9.54
Antibiotic	6.15	36.85	16.44	3.50
EOSPRO · CJ170	6.26	36.89	16.95	2.24



CONCLUSION

Compared with the control group, the CJ170 group increased the laying rate by

4.5%

CJ170[®] Trial Feeding For Aquatic 06

The active ingredients in CJ170 can effectively kill pathogenic bacteria such as escherichia coli and salmonella and vibrio in intestinal tract, it has significant effects on promoting intestinal development and microecological balance to improve aquatic performance.

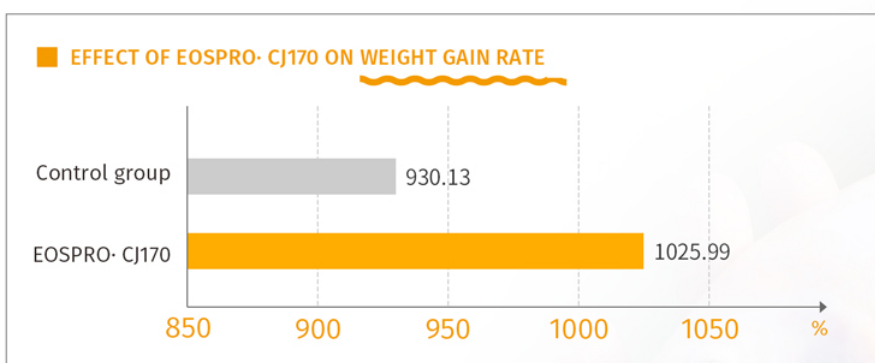
Feed Trial Conditions

A total of 1200 two-week-old tilapia were randomly divided into 2 groups with 600 tilapia per group.

300g/ton CJ170 was added to the basal diet, the experiment lasted for 56 days.

Effects of CJ170 on growth performance					
	Initial body weight/g	Final body weight/g	Weight gain rate%	Specific growth rate%/d	Feed conversion ratio
Control group	20.18	187.7	930.13	16.61	1.45
EOSPRO · CJ170	20.39	209.2	1025.99	18.32	1.25

Effects of CJ170 on digestive enzyme				
	Pepsase U/mg-1	Stomach amylase U/mg-1	Intestinal lipase U/g-1	Entero amylase U/mg-1
Control group	13.85	0.51	2.41	6.90
EOSPRO · CJ170	17.31	0.75	4.27	18.50



CONCLUSION

Compared with the control group, the CJ170 group increased the weight gain rate by

10.3%

07 CJ170® Trial Feeding For Sheep

CJ170 benefits the fermentation of roughage in rumen, increases the yield of fermentation content, promotes rumen growth and development, increases the villus height and the length of small intestine to enlarge its absorption area for nutrients, thus promoting growth.



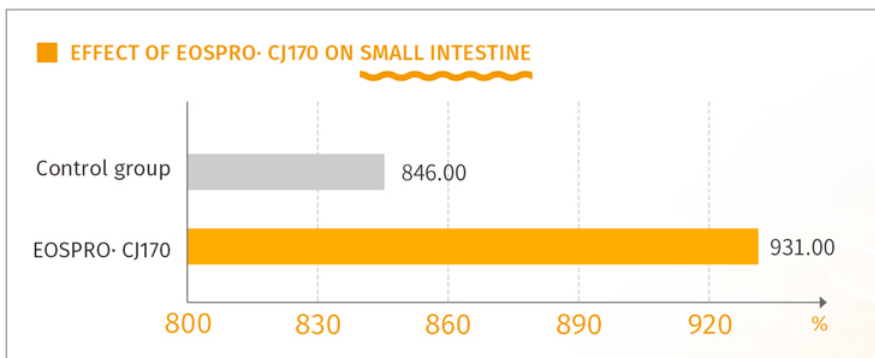
Feed Trial Conditions

300 Suffolk F1 male lambs at 3 months of age were randomly divided into 2 groups with 150 sheep in each group.

The experimental group fed 10g/d CJ170 granules, concentrated feed to coarse fodder were all 45:55. The experiment lasted for 82 days.

	Effect of CJ170 for weight of each gastric chamber			
	rumen/g	reticulum/g	omasum/g	abmasum /g
Control group	643.71	90.30	136.33	191.33
EOSPRO · CJ170	739.91	98.73	159.65	204.38

	Effect of CJ170 for weight of intestine of lambs			
	small intestine/g	duodenum/g	jejunum/g	ileum/g
Control group	846.00	27.50	796.00	22.50
EOSPRO · CJ170	931.00	28.83	875.67	26.50



CONCLUSION

Compared with the control group, the CJ170 group increased the small intestine by **10%**



CJ170[®] Trial Feeding For Calf 08

CJ170 can regulate the cattle intestinal flora and enhance the digestive function, especially when used in the weaning period of calves, it can effectively promote the digestion of the gastrointestinal tract and reduce stress, so as effectively treat diarrhea to promote intestinal health.

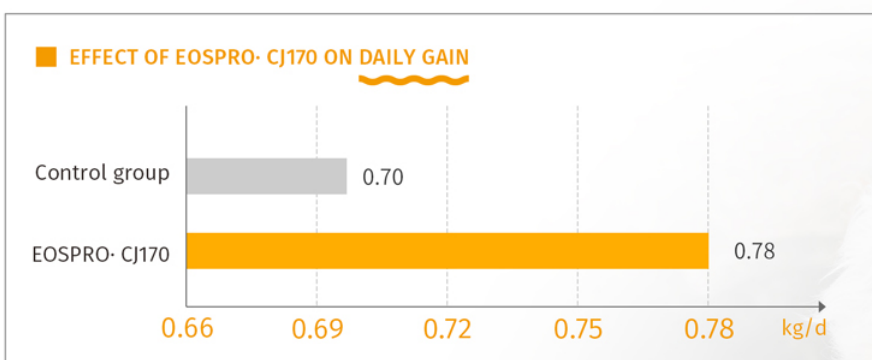
Feed Trial Conditions

72 Holstein cow calves with average birth age of 2 weeks, divided into control group and experimental group, with 36 calves in each group.

The experimental group fed 25g/d CJ170 granules, the trial last for 78 days.

Effect of CJ170 on weight gain of calves						
	Initial weight kg	Final weight kg	Daily gain kg/d	Starter feed dry matter intake kg/d	Oat grass dry matter intake kg/d	Feed gain rate
Control group	49.86	104.10	0.70	1.52	0.18	2.44
EOSPRO · CJ170	51.86	112.50	0.78	1.53	0.19	2.21

CJ170 on diarrhea rate							
	Suckling period			After weaning			
	2 weeks %	3 weeks %	4 weeks %	1 weeks %	2 weeks %	3 weeks %	4 weeks %
Control group	7.15	5.94	9.58	8.68	8.33	5.74	3.56
EOSPRO · CJ170	3.35	3.29	2.28	3.35	2.30	2.90	1.60



CONCLUSION

Compared with the control group, the CJ170 group increased the daily gain by

11.4%

Bivigro® is an innovative technology-based company focusing on research, production and sales of antibiotic substitutes and animal nutritional products, the aim is to offer animal performance solutions, and making your effort to be more efficiency.

Learn more at bivigro-animal-health.com

Questions?

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