Angel®

Animal Nutrition

GroPro

Functional Nucleic Acid and Protein for Young Animals

FUBON

Yeast For Animal Nutrition

ANGEL YEAST CO., LTD.

What is GroPro ?

GroPro is a feed ingredient derived from yeast which enhances all the nutritional and health benefits of yeast. It provides young animals digestible proteins and functional nucleic acids to help them get through critical early growth stages.

GroPro also provides exogenous nucleic acids for young animals, which saves time and energy for nucleic acids synthesis, and promotes them growth more rapidly.

Proteins in GroPro are in the form of free amino acids and peptides, which will be more helpful in protein synthesis and digestion.

Functional Components of GroPro

- Nucleic acids improve growth and intestine development.
- Functional peptides and flavor nucleotides improve appetite.
- Beta-glucans stimulate the immune system.
- Mannans bind pathogens and balance intestinal micro-flora.

GroPro Swine

Replaces SDPP (Spray Dried Porcine Plasma) in creep feed.

Promotes growth in weaned pigs.

GroPro Poultry

Promotes growth and reduces mortality in broilers.

Improves laying rate and egg quality.

GroPro Aqua

Promotes growth.

Replaces fish meal.

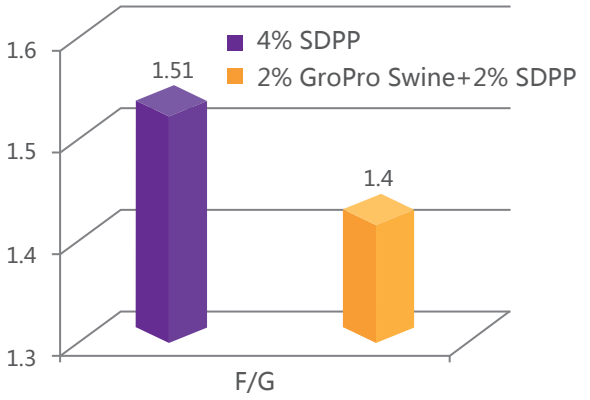
GroPro

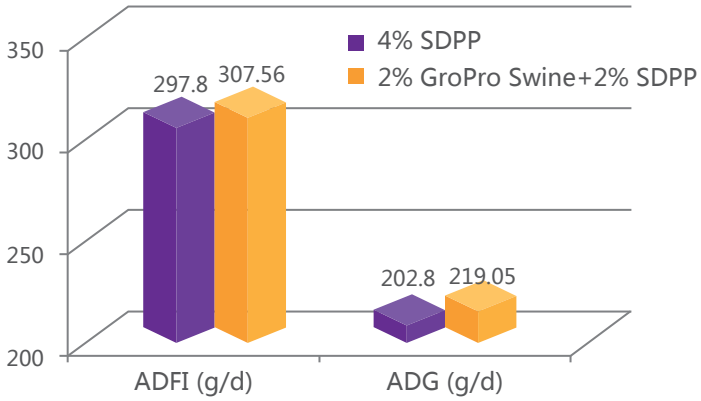
GroPro Swine

- Replaces SDPP (Spray Dried Porcine Plasma) in creep feed.
- Promotes growth in weaned pigs.

Replaces SDPP partially in creep feed

Trial 1. Addition of **GroPro Swine** reduces SDPP required in creep feed and improves the growth performance of early weaning piglets





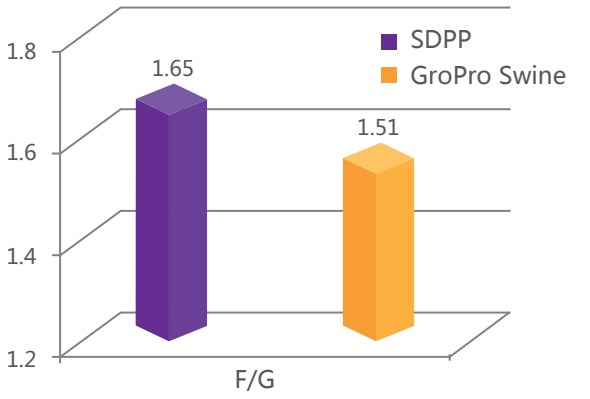
Experiment animals: 32 of 18-days-age piglets. Trial period: 14 days.
Usage: 2% GroPro Swine replaced 2% SDPP in creep feed of 4% SDPP.

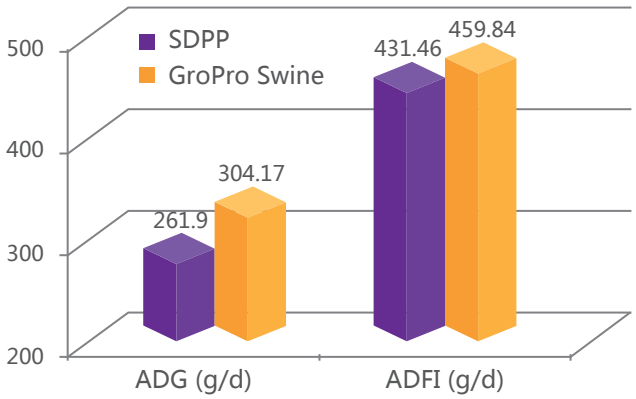
Conclusion

Feed intake and weight gain of weaning piglets is not reduced when **GroPro Swine** replaces half SDPP. **GroPro Swine** will improve FCR and save cost of creep feed.

Replaces SDPP completely in creep feed

Trial 2. **GroPro Swine** has also been shown to completely replace SDPP in creep feed without reducing the growth performance of weaning piglets





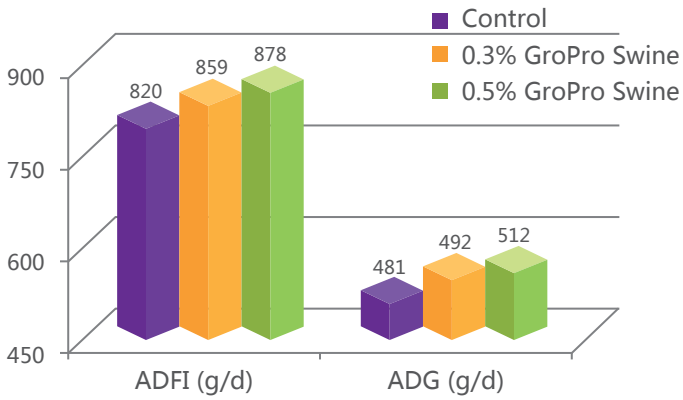
Experiment animals: 24 of 21-days-age piglets Trial period: 14 days
Usage: 3% GroPro Swine replaced 3% SDPP in creep feed of 3% SDPP.

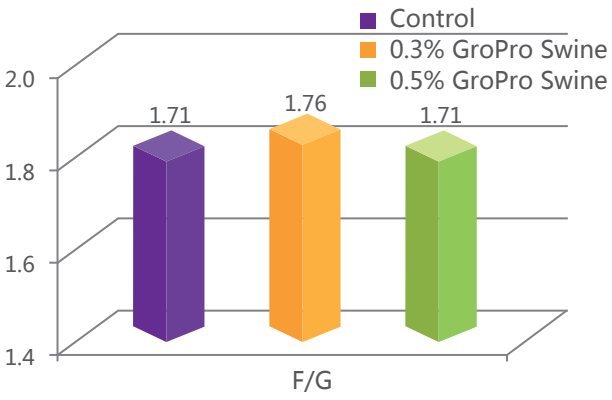
Conclusion

Replacement of SDPP with **GroPro Swine** did not affect growth performance of weaning pigs. **GroPro Swine** will improve FCR and save cost of creep feed.

Promotes growth of weaned pigs

Trial 3. The effect of **GroPro Swine** on growth performance in weaned pigs





Experiment animals: 264 of 40-days-age piglets Trial period: 28 days.
Usage: Add 0.3% and 0.5% GroPro Swine to standard ration.

Conclusion

This study demonstrated that growth performance of weaned pigs was improved by adding 0.3% or 0.5% **GroPro Swine** to a standard creep feed ration.

The trials summary of GroPro Swine on growth performance in weaned pigs

Trial No.	Dosage(kg/t)	ADFI(g/d)	ADG(g/d)	F/G
1	3	Limit feed	+76(398)	-0.28(1.76)
2	3	+76(216)	+74(209)	-0.03(1.08)
3	2	+20(770)	+33(397)	-0.10(1.94)
4	3	+39(820)	+11(481)	-0.05(1.71)
5	5	+58(820)	+31(481)	-0.00(1.71)
6	5	+43(582)	+67(321)	-0.22(1.83)
7	3	+24(460)	+27(307)	-0.05(1.50)
8	5	+15(782)	+45(415)	-0.15(1.88)
9	4	+60(450)	+48(256)	-0.08(1.76)
Average	-	+37	+46	-0.11

Usage

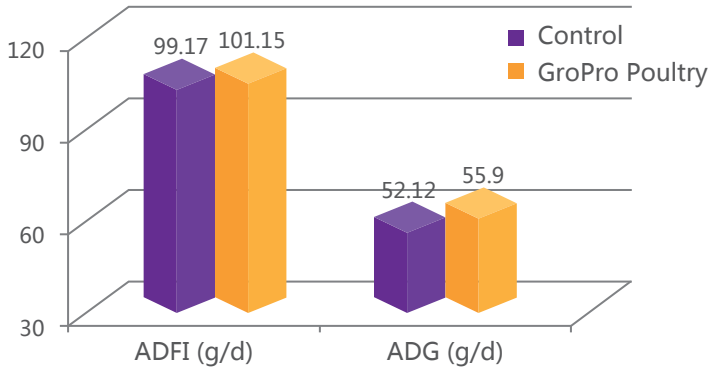
GroPro Swine		
Functions		Usage
Replace SDPP	SDPP＞3% in creep feed	Replace half SDPP by equal amount of **GroPro Swine**. Balance ration.
	SDPP≤3% in creep feed	Replace SDPP by equal amount of **GroPro Swine**. SDPP can completely be replaced. Balance ration.
	No SDPP in feed	Add 1%-1.5% to standard ration. Balance ration.
Improve growth performance in suckling or weaned pigs.		Add 0.3%-0.5% to standard ration. Balance ration.

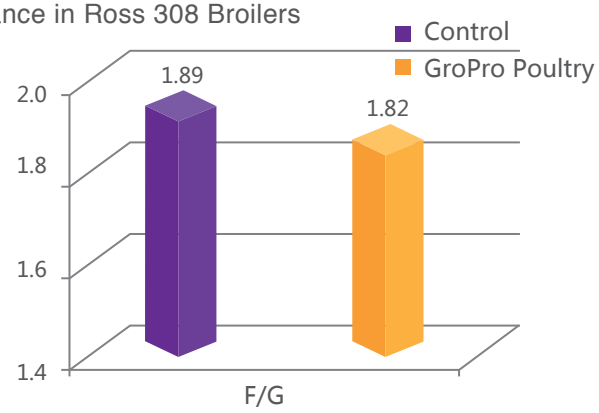
GroPro Poultry

- Promotes growth and reduces mortality in broilers.
- Improves laying rate and egg quality.

Promotes growth and reduces mortality in broilers

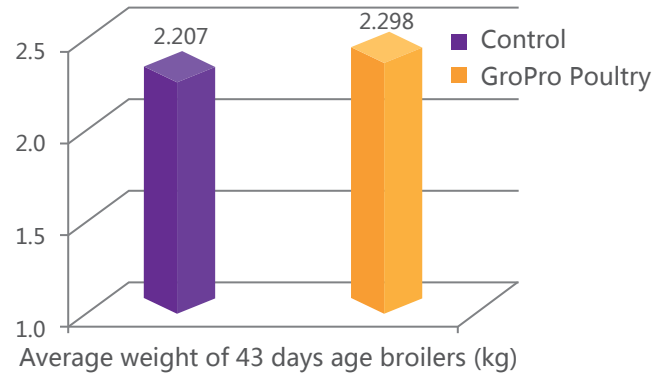
Trial 1. The effect of **GroPro Poultry** on the growth performance in Ross 308 Broilers

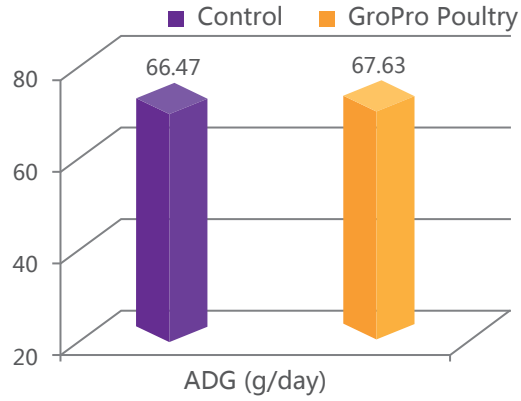




Experiment animals: 228 Ross 308 Broilers Trial period: 42 days.
Usage: Add 0.08% GroPro Poultry to standard ration.

Trial 2. The effect of GroPro on the growth performance in AA Broilers

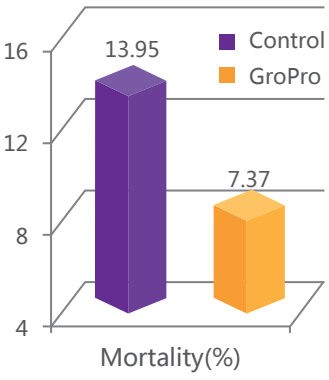


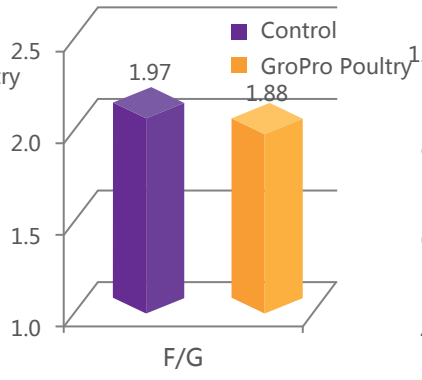


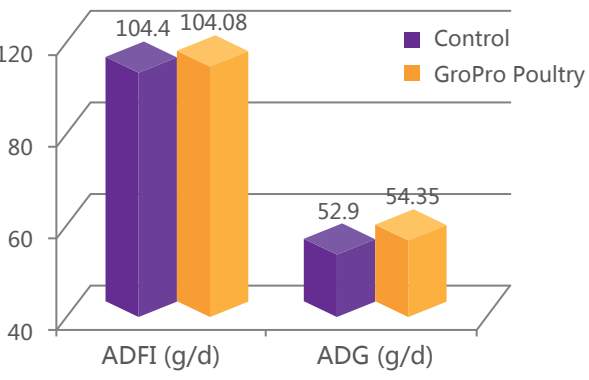
Experiment animals: 2040 of 11-days-age AA Broilers. Trial period: 32days.
Usage: Add 0.08% GroPro Poultry to standard ration.

Trial 3. The effect of **GroPro Poultry** on the growth performance and intestine development in AA broilers

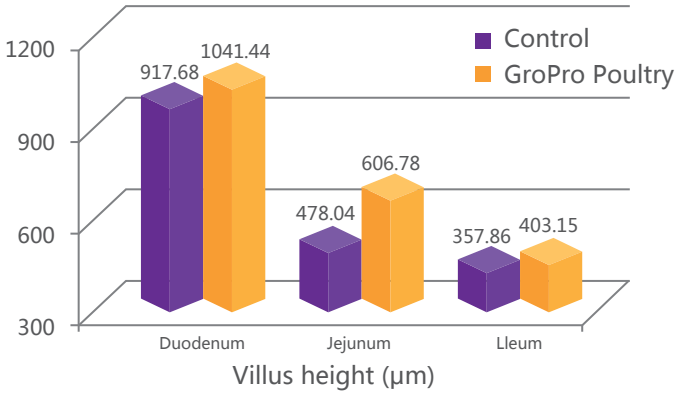
Growth performance



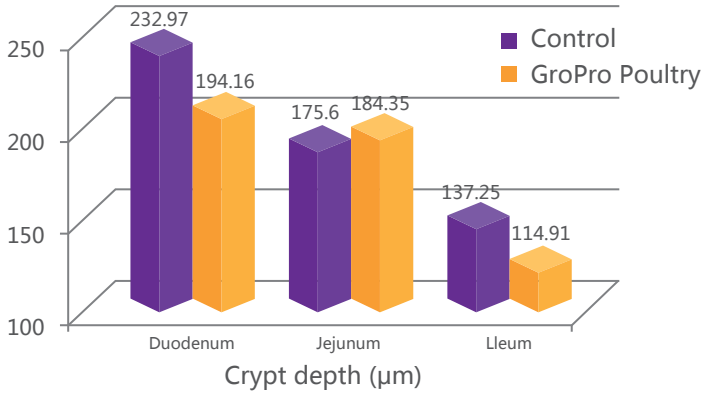




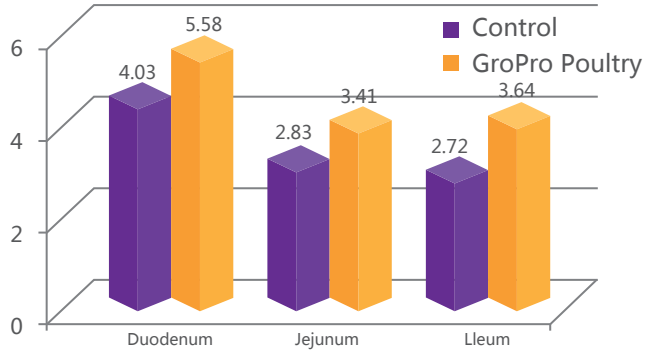
Intestine development



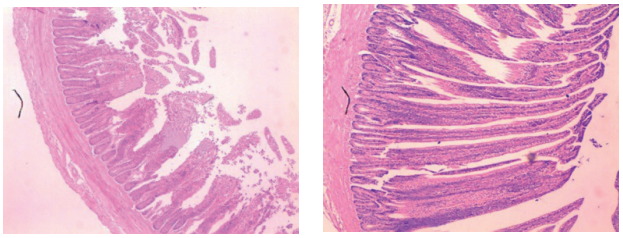
Villus height (μm)



Crypt depth (μm)



V/C



Control GroPro Poultry

Intestinal villii under microscope

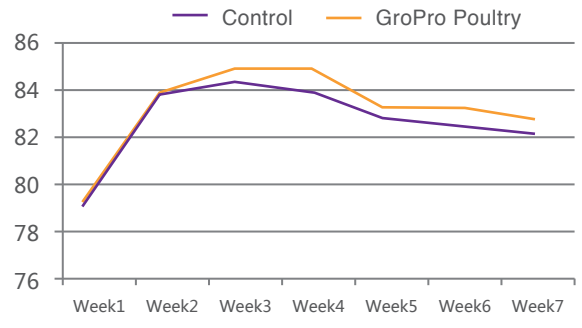
Experiment animals: 84,000 of 1-day-age white feather broilers. Trial period: 42 days.
Usage: Add 0.08% GroPro Poultry to standard ration.

Conclusion

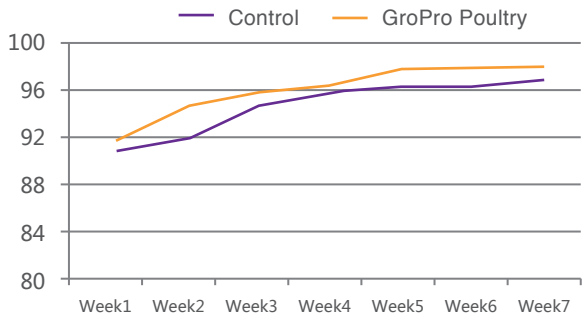
GroPro Poultry improved growth performance and reduced mortality in broilers. **GroPro Poultry** promoted intestine development, and improved digestibility.

Improves laying rate and egg quality

Trial 4. The effect of **GroPro Poultry** on laying rate and egg quality in layers



The comparison of laying rate (%)



The comparison of qualified rate (%)

Experiment animals: 6190 of 26-weeks-age Ross 308 layers. Trial period: 7 weeks.
Usage: Add 0.15% GroPro Poultry to standard ration.

Conclusion **GroPro Poultry** improved laying performance and egg quality in layers.

Usage

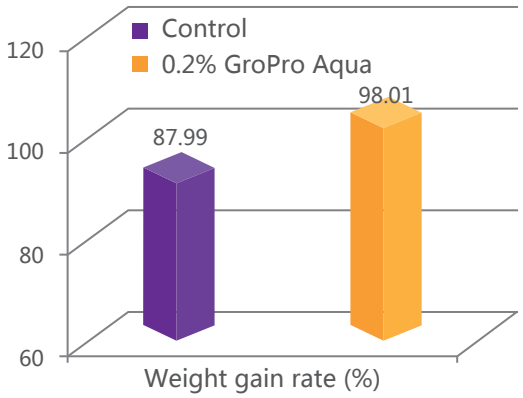
GroPro Poultry	
Functions	Usage
Promote growth and reduce mortality in broilers.	Add 0.08% to standard ration.
Improve laying rate and egg quality in layers.	Add 0.1%-0.15% to standard ration.

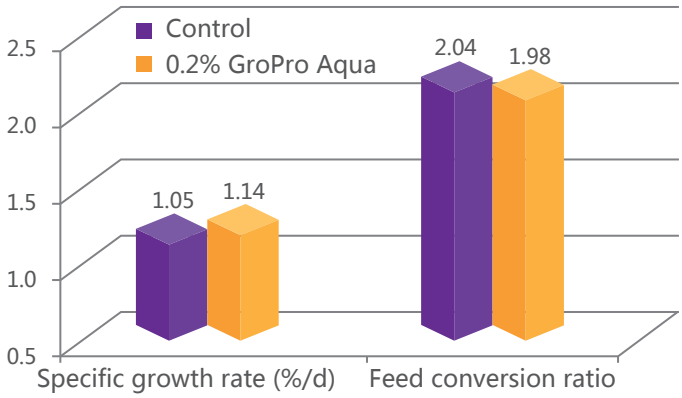
GroPro Aqua

- Promotes growth
- Replaces fish meal

Promotes growth

Trial 1. The effect of **GroPro Aqua** on growth performance in *Carassius auratus gibelio*





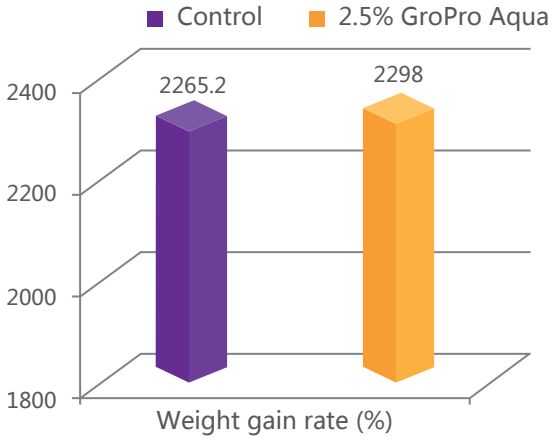
Experiment animals: 240 fry (3.78±0.04 g/fry). Trial period: 60 days.
Usage: Add 0.2% GroPro Aqua to standard ration.

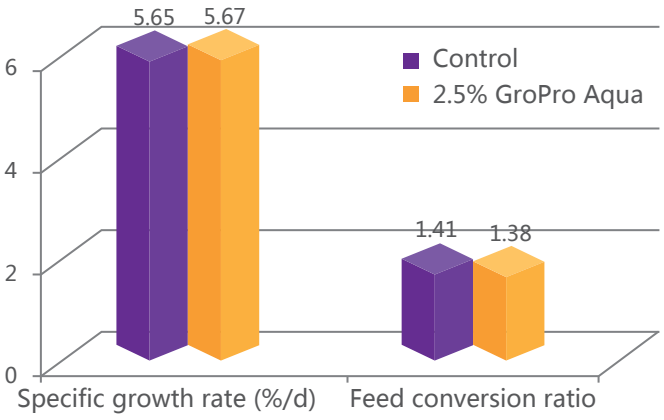
Conclusion

GroPro Aqua can improve weight gain rate, feed efficiency and decrease feed coefficient in *Carassius auratus gibelio.*

Replaces fish meal

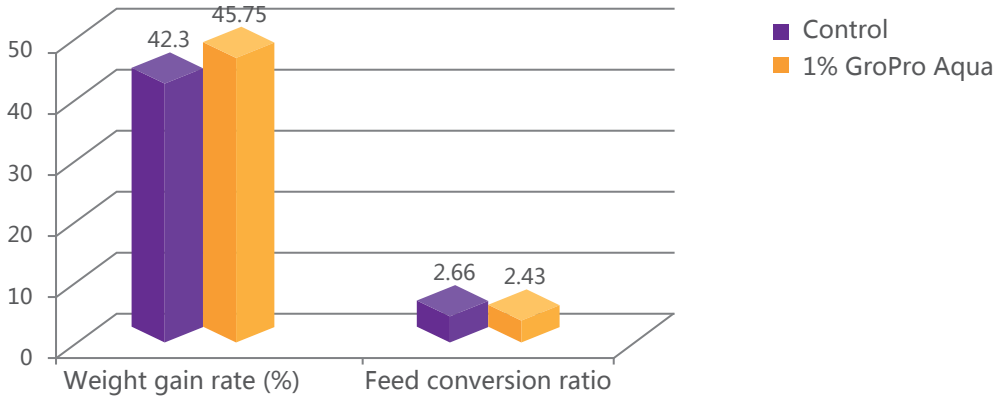
Trial 2. The addition of **GroPro Aqua** could replace fish meal without affecting growth performance of *Litopenaeus vannamei.*





Experiment animals: the shrimp weight 0.63g, the trial repeated 3 times for each process, 40 shrimps/barrel.
Trial period: 56 days.
Usage: 2.5% GroPro Aqua replaced 2% fish meal. The content of fish meal in control group is 24%. Balance ration.

Trial 3. The addition of **GroPro Aqua** reduced fish meal requirement without affecting growth performance of *Carassius auratus*



Experiment animals: 240 fish were divided into 2 groups with 3 replicates, the average initial weight of the fish is 63g.
Trial period: 8 weeks.
Usage: 1% GroPro Aqua with 6% soybean meal replaced 4% fish meal (the ratio of fish meal replacement was 33.33%). Balanced ration.

Conclusion

GroPro Aqua can replace part of fish meal by balancing with the vegetable protein of soybean meal in standard ration, which will save cost and have no affecting with growth performance.

Usage

GroPro Aqua		
Functions		Usage
Promote growth		Add 0.2% to standard ration
Replace fish meal*	Herbivorous (fish meal<5%)	Replace all fish meal
	Omnivorous(fish meal 5-15%)	Replace 20-30% fish meal
	Carnivorous & crustacean (fish meal>15%)	Replace 10-20% fish meal

* Replace fish meal: The ration should be balanced with other protein feedstuff and nutriments when use GroPro Aqua to replace fish meal.

ADD：168 Chengdong Avenue, Yichang, Hubei, P. R.China P.C.: 443003 WEB: en.angelyeast.com
TEL: +86-717-6370688 FAX: +86-717-6370277 E-MAIL: fubon@angelyeast.com