

Composition change of feed ingredients
by adding
One-Q (and/or Arazyme)
in animal feed



Insect Biotech Co., Ltd.

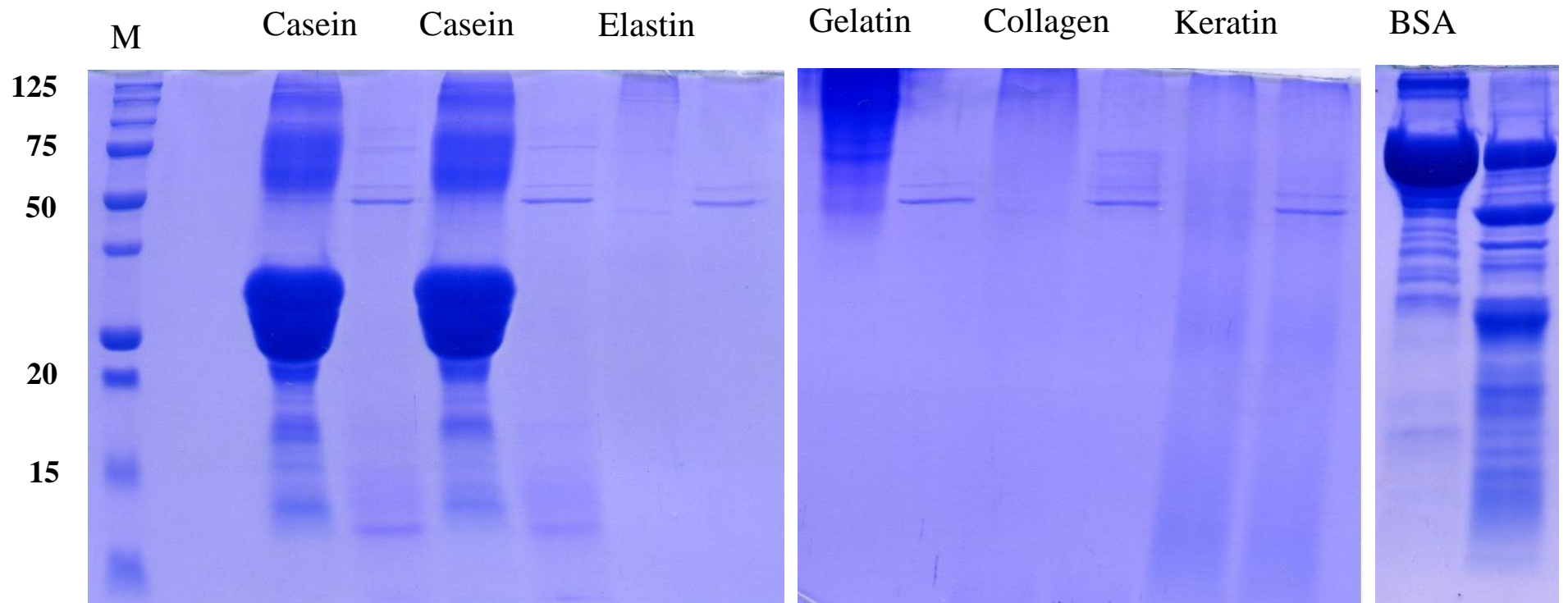
TEL : +82-42-862-8440 FAX : +82-42-862-8441

Degradation of various protein substrate

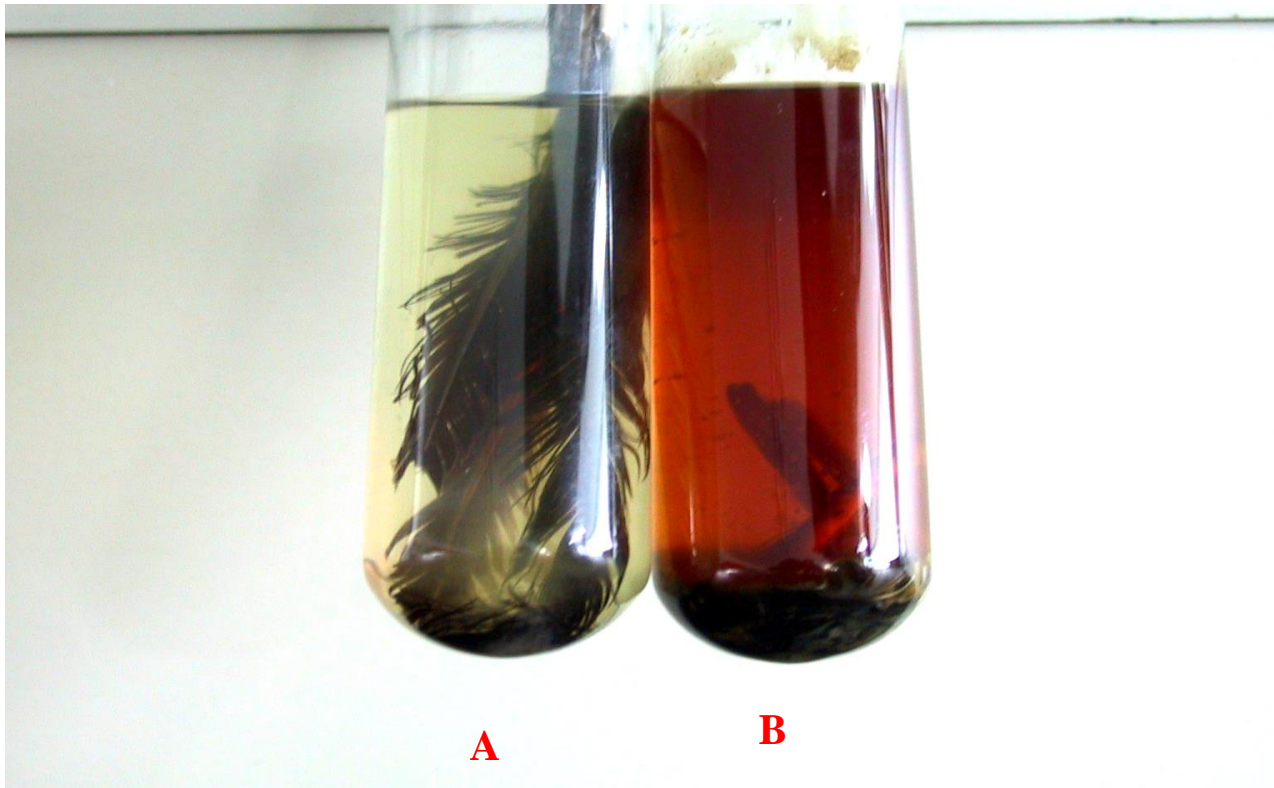
Substrate	Relative activity (%)
Albumin (egg)	100
Casein	63
Hemoglobin	42
Elastin	41
Keratin	41
Gellatin	40

The concentration of TCA-soluble protein released to the supernatant were measured using Bradford method, with bovine serum albumin as the standard.

Hydrolysis of various Proteins



Keratin degradation of Arazyme for chicken feather

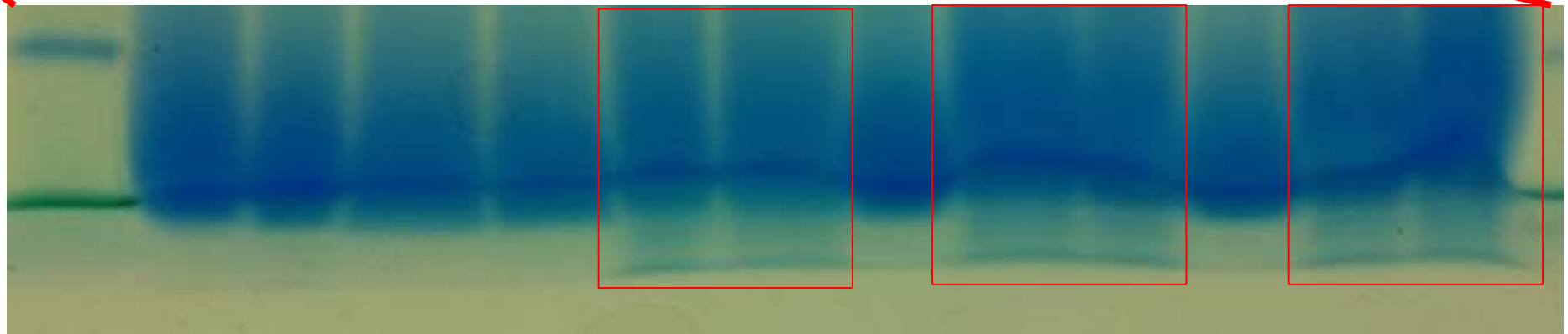
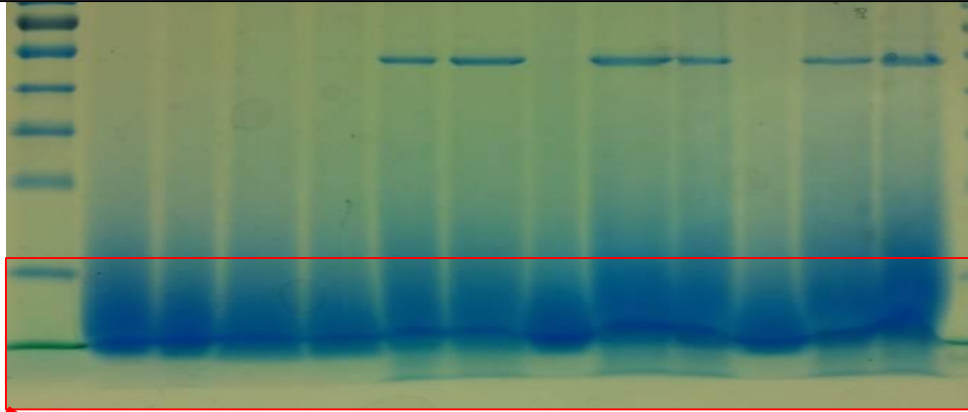


A : Control

B : Treatment of Arazyme

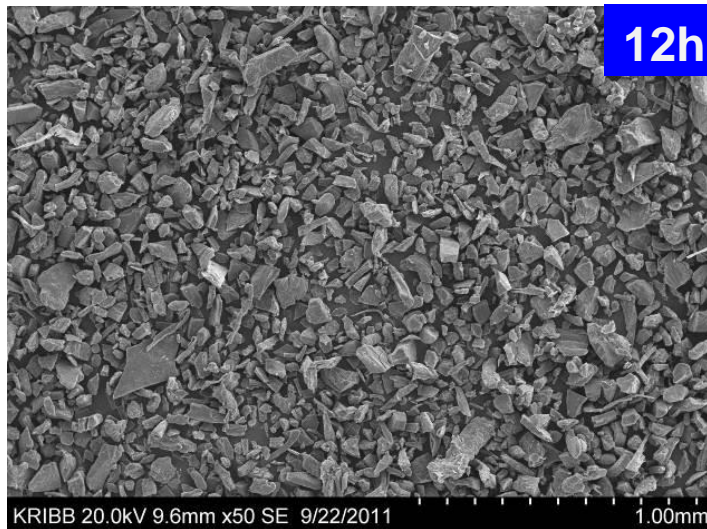
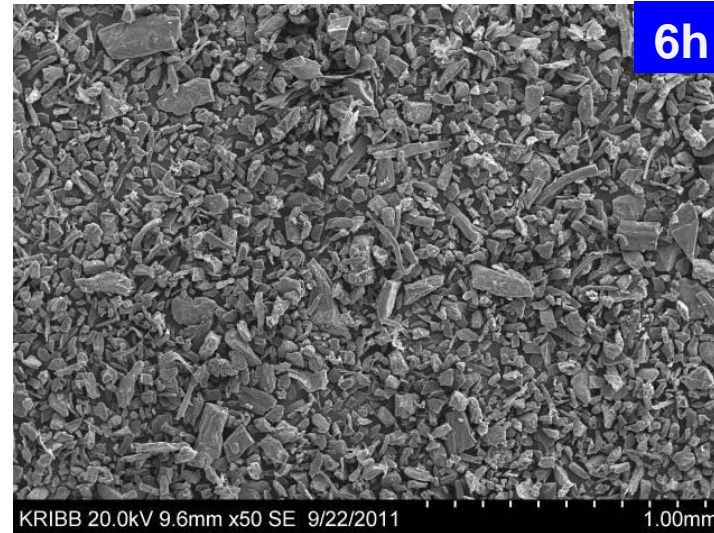
Hydrolysis of Feather meal (羽毛粉).

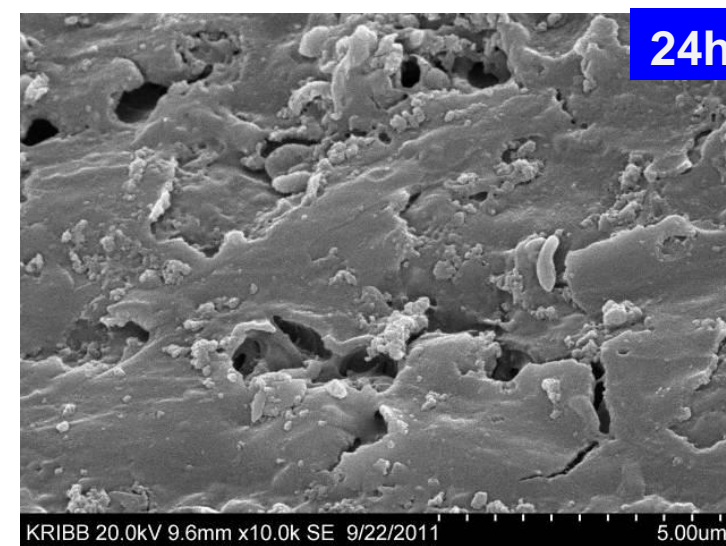
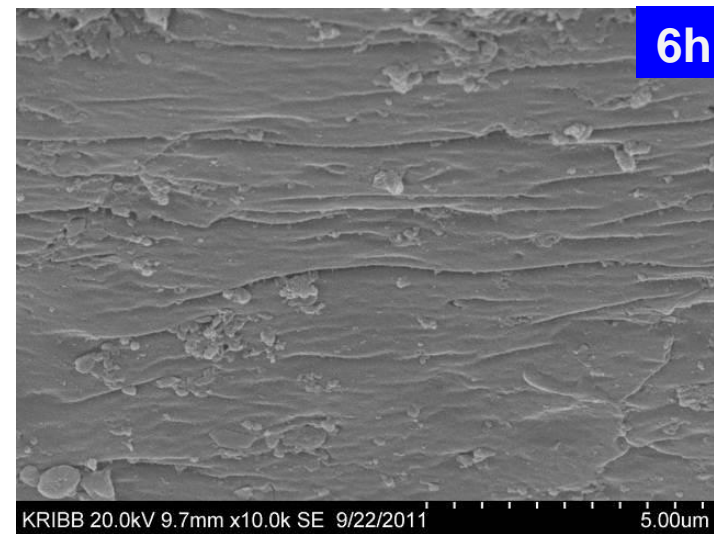
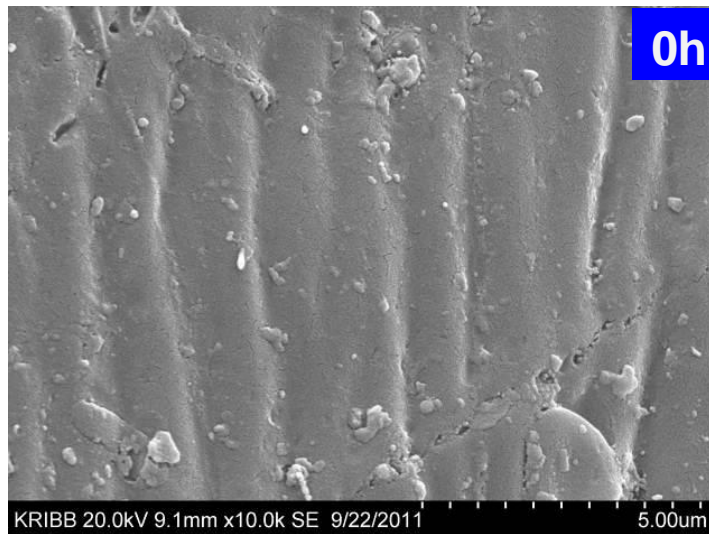
M	Con	Test	Test	Con	Test	Test	Con	Test	Test	Con	Test	Test
	0h			1h			3h			6h		



M	Con	Test	Test	Con	Test	Test	Con	Test	Test	Con	Test	Test
	0h			1h			3h			6h		

Surface of Feather meal by electron microscope (SEM)



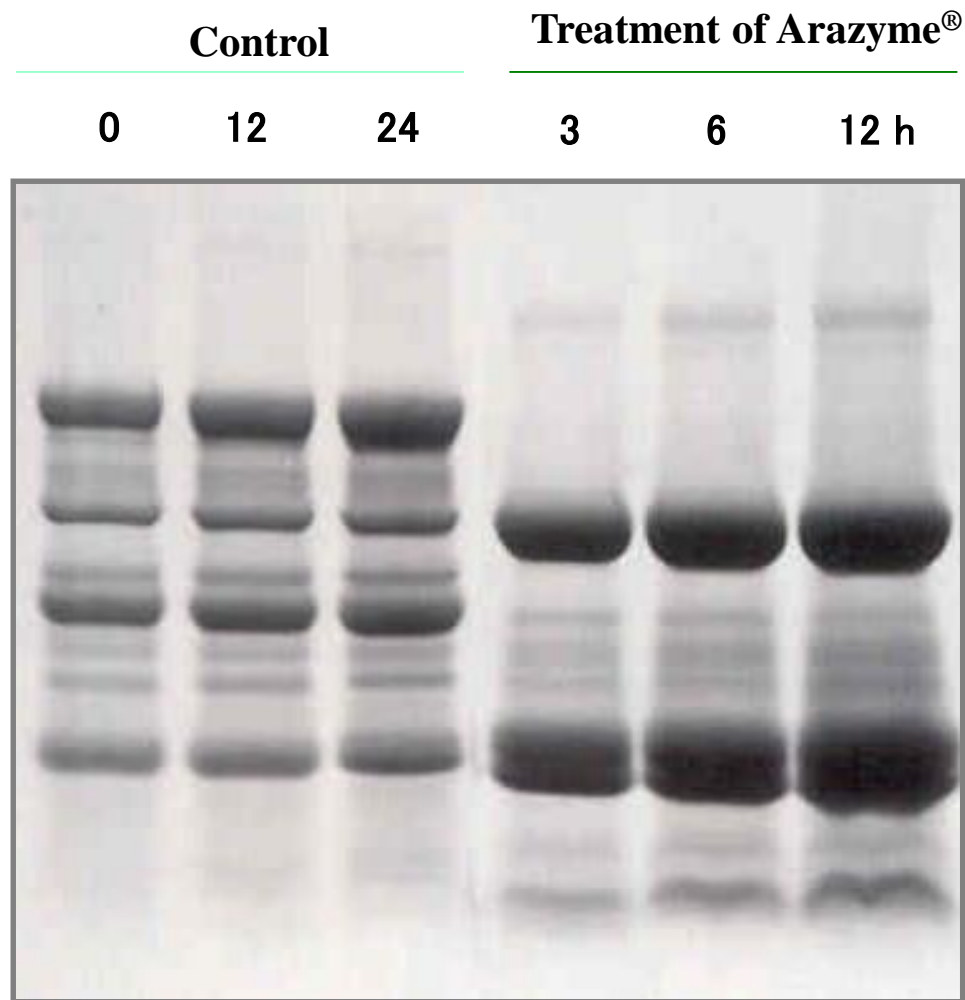




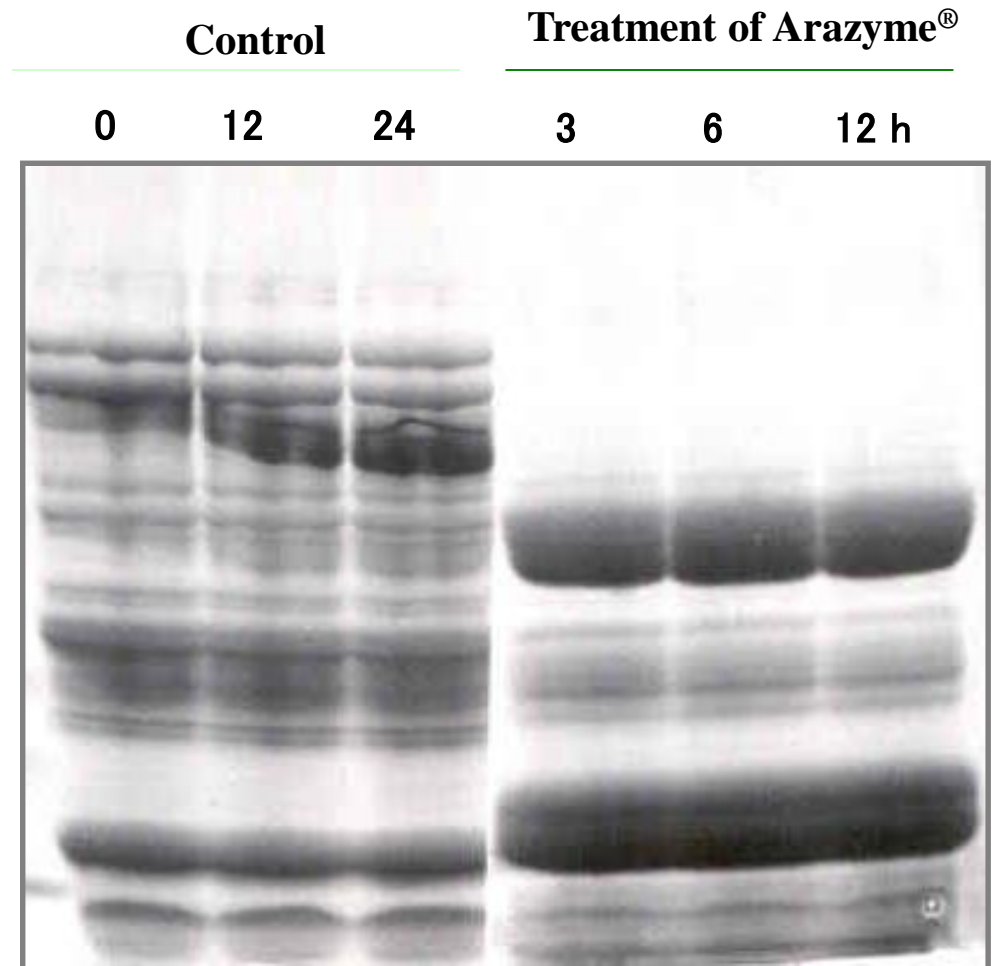
Arazyme®



Hydrolysis of soybean meal



Hydrolysis of Fish meal



Degree of hydrolysis from vegetable diets with treatment of Arazyme.

Diets	Arazyme contents (w/v)	Degree of hydrolysis (mmol/g-protein) of various reaction time (h)				
		0.5	6	12	24	48
Soybean meal	0	0.13	0.23	0.23	0.23	0.23
	0.1	0.19	0.57	0.57	0.57	0.57
Cotton seed meal	0	0.15	0.15	0.18	0.18	0.18
	0.1	0.21	0.53	0.53	0.58	0.64
Rapeseed meal	0	0.24	0.32	0.41	0.41	0.41
	0.1	0.32	0.60	0.60	0.60	0.60
Maize powder	0	0.13	0.13	0.13	0.60	0.60
	0.1	0.60	1.15	1.15	1.15	1.15
Maize gluten meal	0	0.06	0.06	0.06	0.06	0.06
	0.1	0.10	0.43	0.43	0.43	0.43



Troubles?

Let's solve them with One-Q!



Great improvement
of
feed efficiency

Prevention
of
diarrhea

Prevention
of
respiratory disease

Improvement
of
shrunk pigs growth



One-Q® swine

**Prevention
of respiratory disease**

**Great improvement of
feed efficiency**

**Prevention
of diarrhea**

**Improvement
of shrunken pigs growth**





Efficacy & Benefits of One-Q[®] swine

- Great improvement of feed efficiency
- Prevention of diarrhea
- Prevention of respiratory disease
- Improvement of shrunken pigs growth
- Metabolism improvement
- Easy evacuation
- Increased milk quality & quantity of sow





Information of Farm and Test method

Test 1

- Location : **WJ farm in KeomSan** (Scale : 630 head of sow, 7,000 head breeding & fattening pig)
- Test period : August. 5. 2003 (25 days) ~ September. 19. 2003 (70 days)
- Test method : Feed intake and weight per head for test period

Item	Control	One-Q Swine	Difference	% change
Number of Pigs	30	30		
Number of Days	46	46		
Initial weight, Kg	7.3	7.1	0.2	
Final weight gain, Kg	32.3 ^b	34.5 ^a	2.2	
Total weight gain, Kg	25.0 ^b	27.4 ^a	2.4	+9.6
Daily gain, g	543.3 ^b	595.9 ^a	52.6	+9.7
Total feed, Kg/pig	39.5	39.1	0.4	
Daily feed, g	859.0	849.3	9.7	
Feed gain	1.58 ^b	1.43 ^a	0.15	9.5

^{ab} $P < 0.05$



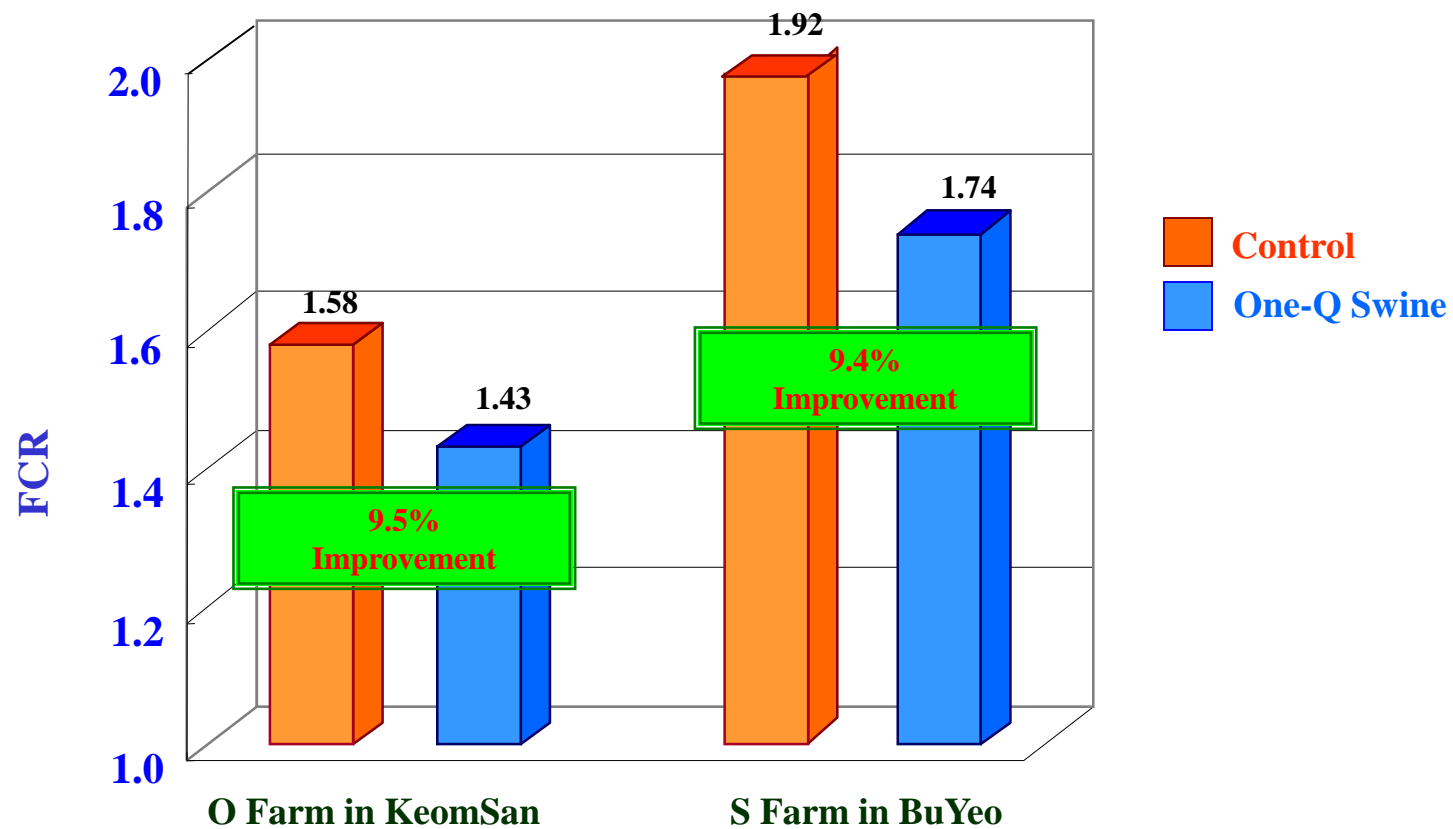
Test 2

- Location : **SY farm in Buyeo** (Scale : 50 head of sow, 1,000 head growing & fattening pig)
- Test period : August. 5. 2003 (36 days) ~ September. 8. 2003 (70 days)
- Test method : Feed intake and weight per head for test period

Item	Control	One-Q Swine	Difference	% change
Number of Pigs	30	30		
Number of Days	46	46		
Initial weight, Kg	7.3	6.5 ¹	0.8	
Final weight gain, Kg	27.3	27.4	0.1	
Total weight gain, Kg	20.0	20.9	0.9	+4.5
Daily gain, g	435.4	454.8	19.4	+4.5
Total feed, Kg/pig	38.4	36.9	1.5	
Daily feed, g	835.2	802.1	33.1	
Feed gain	1.92 ^b	1.74 ^a	0.18	-9.4

¹ note the lower initial weight of this treatment

^{ab} P<0.05



Test 3

Name of test farms	S Farm in BuYeo		
	Control	One-Q Swine	Improved effect
Test Start number of piglets	60	60	—
Test Final number of piglets	57	60	Δ 5 %
Total start weight per head (Kg; 18 days)	330	330	—
Average start weight per head (Kg; 18 days)	5.5	5.5	—
Average finish weight per head (Kg; 40 days)	690	816	Δ 126 kg
Total weight gain (kg ; A)	360	486	Δ 126 kg
Average daily weight gain per head (kg)	6.3	8.1	Δ 1.5 kg
Total feed intake (kg ; B)	460	560	Δ 100 kg
FCR (feed conversion rate) (B/A)	1.278	1.152	▽ 0.126
Relative percent of improved FCR compared with control (%)	100	90.14	Δ 9.86 %

Test 4

Trial conducted by large Korea pig cooperative

Item	Control	One-Q Swine	Difference	% change
Number of Pigs	30	30		
Number of Days	26	26		
Initial weight, Kg	28.63	28.75	0.12	
Final weight gain, Kg	45.64	48.50	2.86	
Total weight gain, Kg	17.01	19.75	2.74	+16.1
Daily gain, g	654	760	106	+16.2
Total feed, Kg/pig	43.08	44.79	1.71	
Daily feed, g	1.66	1.72	0.06	
Feed gain	2.53	2.28	0.25	-9.9

Field test result in USA

California State Polytechnic University

Place : California in USA

Test Period : September. 2005 ~ November. 2005



Test Period	35 Days			49 Days		
Test groups	Control	One-Q Swine	Improved effect	Control	One-Q Swine	Improved effect
Test number of Tested piglets	20	20		20	20	
Average start weight per head (Lbs.)	52.25	50.65	↓ 1.60	52.25	50.65	↓ 1.60
Average finish weight per head (Lbs.)	97.23	99.18	↑ 1.95	117.70	120.10	↑ 2.40
Average Weight Gain per Head for test period (Lbs.) A	44.98	48.53	↑ 3.55	58.18	61.00	↑ 2.82
Average Daily Weight Gain per Head (Lbs/day)	1.29	1.39	↑ 0.10	1.33	1.42	↑ 0.09
Average feed intake per head for test period (Lbs.) B	108.76	103.44	↓ 5.32	150.88	143.70	↓ 7.18
Average daily feed intake per head (Lbs/day)	3.11	2.96	↓ 0.15	3.08	2.93	↓ 0.15
FCR (feed conversion rate) (B/A)	2.42	2.13	↓ 0.29	2.59	2.36	↓ 0.24
Relative percent of improved FCR compared with control (%)	100.00	88.15	↑ 11.85	100.00	90.84	↑ 9.16

Field test results in Philippine 1

Test Period	Test 1		Test 2	
Test groups	Control	One-Q Swine	Control	One-Q Swine
Initial No. of Pigs On Test	50	50	50	50
Final No. of Pigs On Test	48	49	46	49
Starting Wt at 31 days, Kg	5.97	5.78	5.75	5.92
Final Wt at 60 days, Kg	18.20	18.30	18.10	19.40
Final Wt at 90 days, Kg	31.60	33.40	On going	On going
Ave. Wt Gain to Date, Kg	25.63	27.62	12.35 (age 60)	13.48 (age 60)
Feeds Consumed, Kg	3,197	3,228	773	785
Days On test Completed	60	60	30	30
Daily Feed intake, Kg	1.11	1.10	0.560	0.534
Ave. Daily Gain (ADG), Kg	0.427	0.460	0.411	0.449
Feed Conversion Ratio (FCR)	2.60	2.39	1.36	1.19

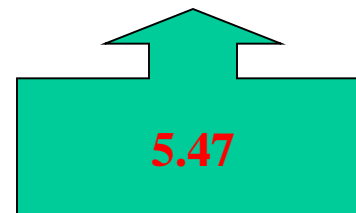
Period study : Nov. 16, 2004 until Feb. 14, 2005

↑ 8.07

↑ 12.5

Field test result in Philippine 2

Test Period	Test 3	
Test groups	Control	One-Q Swine
Initial No. of Undersized Pigs On Test	30	30
Final No. Of Same Pigs On The Test	22	25
Starting Wt at 31 days, Kg	4.22	4.16
Final Wt at 90 days, Kg	14.60	15.75
Day On Test	90	90
Average Wt Gain To Date, Kg	10.38	11.59
Ave. Daily Gain (ADG), Kg	0.115	0.129
Ave. Daily Feed Intake Recorded	0.820	0.870
Feed Conversion rate (FCR)	7.130	6.740



Period study : Nov. 16, 2004 until Feb. 14, 2005

Field test result in China

National Feed Engineering Technology Research Center
Beijing Ruture Autumn Science & Technology Co., Ltd.

Jin XianXu (manager)

Place : ShangHai on China



Note	control	One-Q swine	Improved effect
Test number of piglets	75	75	—
Average start weight per head (kg)	7.7	7.6	▽ 0.1 kg
Average finish weight per head (kg)	26.2	26.7	△ 0.5 kg
Average weight gain per head for test period (kg)	18.5	19.1	△ 0.6 kg
Average daily weight gain per head (g/day); A	440.0	454.8	△ 14.8 g
Average daily feed intake per head (g/day); B	834.8	780.6	▽ 54.2 g
FCR (feed conversion rate) (B/A)	1.90	1.72	▽ 0.18

- Test period : 42 days

FCR : 9.47 %

Note	control	One-Q swine	Improved effect
Test number of piglets	60	60	—
Average start weight per head (kg)	6.9	6.9	
Average finish weight per head (kg)	16.4	17.3	△ 0.9 kg
Average weight gain per head for test period (kg)	9.5	10.4	△ 0.9 kg
Average daily weight gain per head (g/day); A	339.3	371.4	△ 32.1 g
Average daily feed intake per head (g/day); B	620.0	650.0	▽ 30.0 g
FCR (feed conversion rate) (B/A)	1.83	1.75	▽ 0.08

- Test period : 42 days

FCR : 4.37 %

Note	control	One-Q swine	Improved effect
Test number of piglets	75	75	—
Average start weight per head (kg)	26.5	26.7	▽ 0.2 kg
Average finish weight per head (kg)	38.9	39.9	△ 1.0 kg
Average weight gain per head for test period (kg)	12.4	13.2	△ 0.8 kg
Average daily weight gain per head (g/day); A	620.0	660.0	△ 40.0 g
Average daily feed intake per head (g/day); B	1,463.2	1,412.4	▽ 50.8 g
FCR (feed conversion rate) (B/A)	2.36	2.14	▽ 0.22

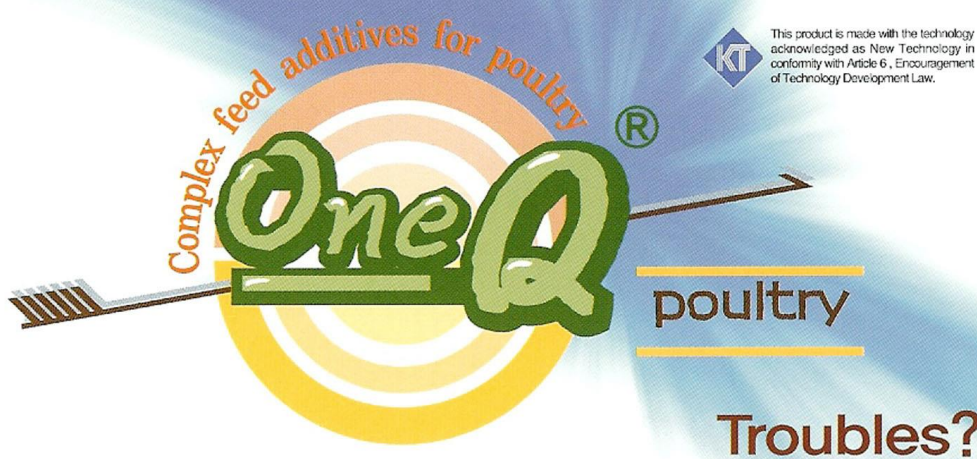
- Test period : 30 days

FCR : 9.32 %

Note	control	One-Q swine	Improved effect
Test number of piglets	40	40	—
Average start weight per head (kg)	33.1	33.3	△ 0.1 kg
Average finish weight per head (kg)	50.7	56.0	△ 0.9 kg
Average weight gain per head for test period (kg)	17.6	22.7	△ 5.1 kg
Average daily weight gain per head (g/day); A	586.7	756.7	△ 170 g
Average daily feed intake per head (g/day); B	1,390.0	1,680.0	▽ 290 g
FCR (feed conversion rate) (B/A)	2.37	2.22	▽ 0.15

- Test period : 30 days

FCR : 6.33 %



Troubles?

Let's solve them with One-Q !



Increase of
laying rate
&
Maintenance of
laying peak

Improvement
of
egg quality
[weight · color · shell]

Improvement
of
feed efficiency

Decrease
of
death rate



One-Q® Poultry

Your Brilliant Choice~!

**Increase of laying rate
&
Maintenance of laying peak**

**Improvement
of
egg quality
[weight·color·shell]**

**Improvement
of
feed efficiency**

**Decrease
of
death rate**



Broiler chicks

Item	Control	One-Q poultry	Note
Broilers (Number)	19,000	19,000	-
Dead broilers (Number)	220	125	↓ 95 Broiler
Dead rate (%)	1.16	0.66	↓ 0.5
Rearing rate (%)	98.84	99.34	↑ 0.5
Average weight gain per broiler (Kg)	1.53	1.58	↑ 0.05
Average feed gain per broiler (Kg)	2.62	2.63	↑ 0.01
FCR (feed conversion rate)	1.72	1.67	2.9% improvement

Test Place : P Farm of YoungDong in Korea

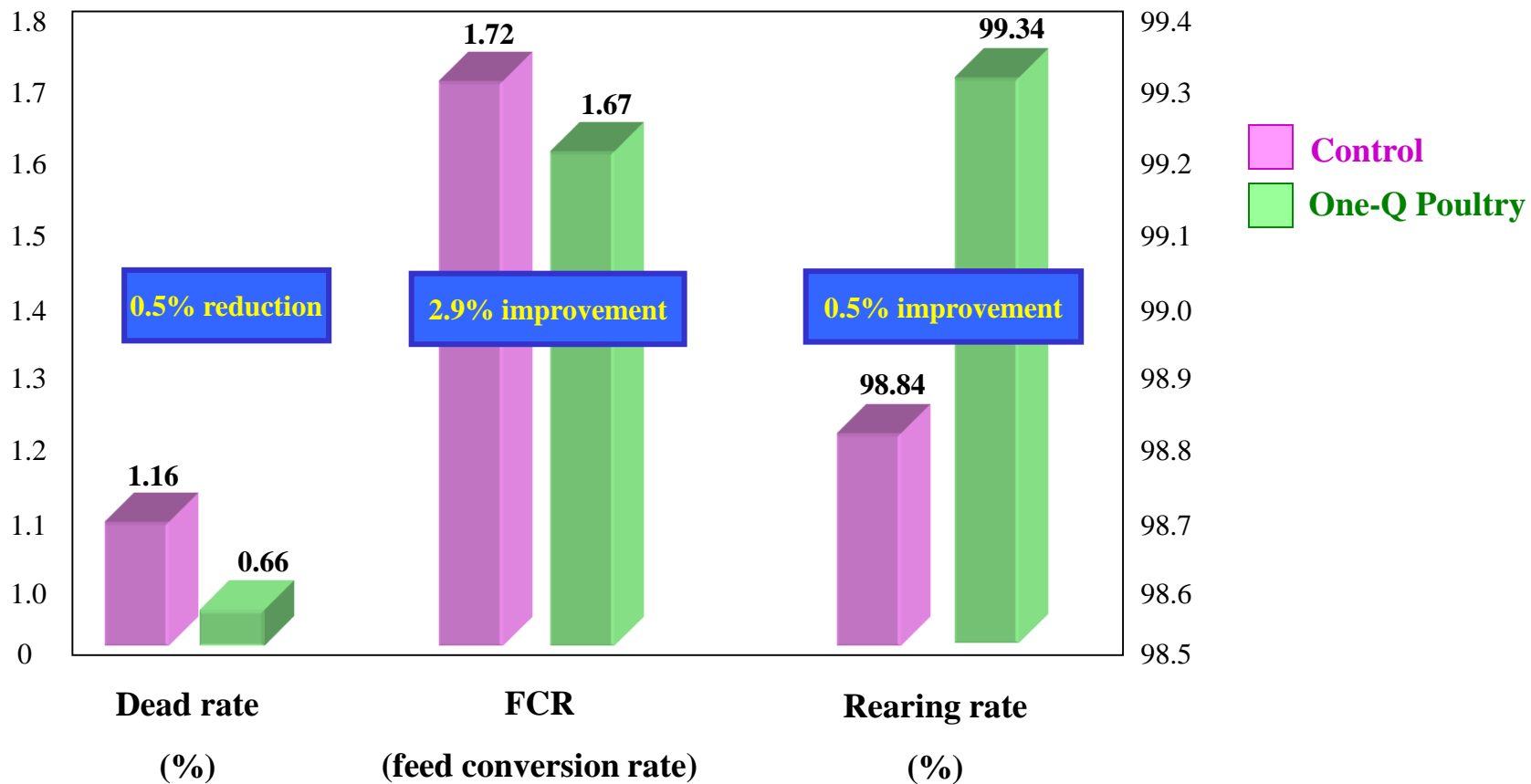
Test Period : 2003. 7. 15 ~2003. 8. 19 (35days)

Test Laying hen No. : 38,000

Species : a hybride between Ross and Hubbard



Broiler chicks



Description	Control	Treatment	Remarks
Birds start number	26,000	28,000	-
Dead birds	1,725	1,523	11.71% increase
Raising rate (%)	93.36	94.56	1.2 % increase
Start weight (g)	40	36.5	
Average finish weight (g)	1,805	1,788	- 0.94 %
Average feed intake (g)	2,967	2,818	- 5.02 %
FCR	1.64	1.57	4.27% increase

Test Place : Samang Farm located Yecheon kungbuk province Korea

Test Period : 2007. 5. 1 ~2007. 6. 4 (34days)

Test Poultry number : Control [26,000 bird] ; Treatment [28,000 bird]

Breeder chicks

Item	Control	One-Q poultry	Note
Breeders (Number)	6,000	6,000	-
Average egg weight (g)	58.91	64.38	↑ 5.47
Average egg shell thickness (mm)	0.34	0.41	↑ 0.07
Fertility rate (%)	95.2	99.4	↑ 4.2
Hatching rate (%)	77.39	83.62	↑ 6.23

Test Place : C Farm of Kwang Chun in Korea

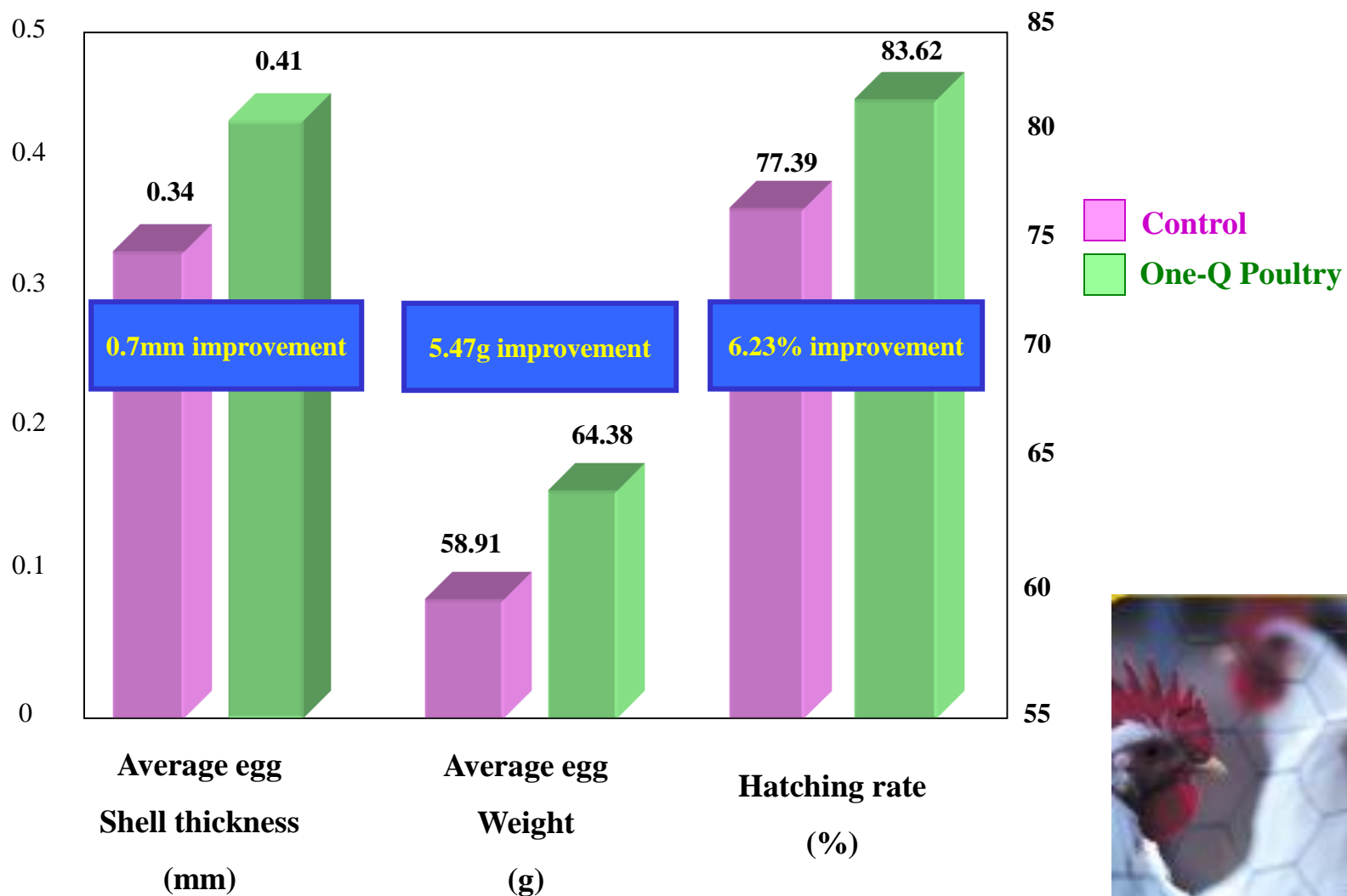
Test Period : 2003. 7. 17 ~2003. 10. 17 (40 weeks – 57 weeks)

Test Laying hen No. : 12,000

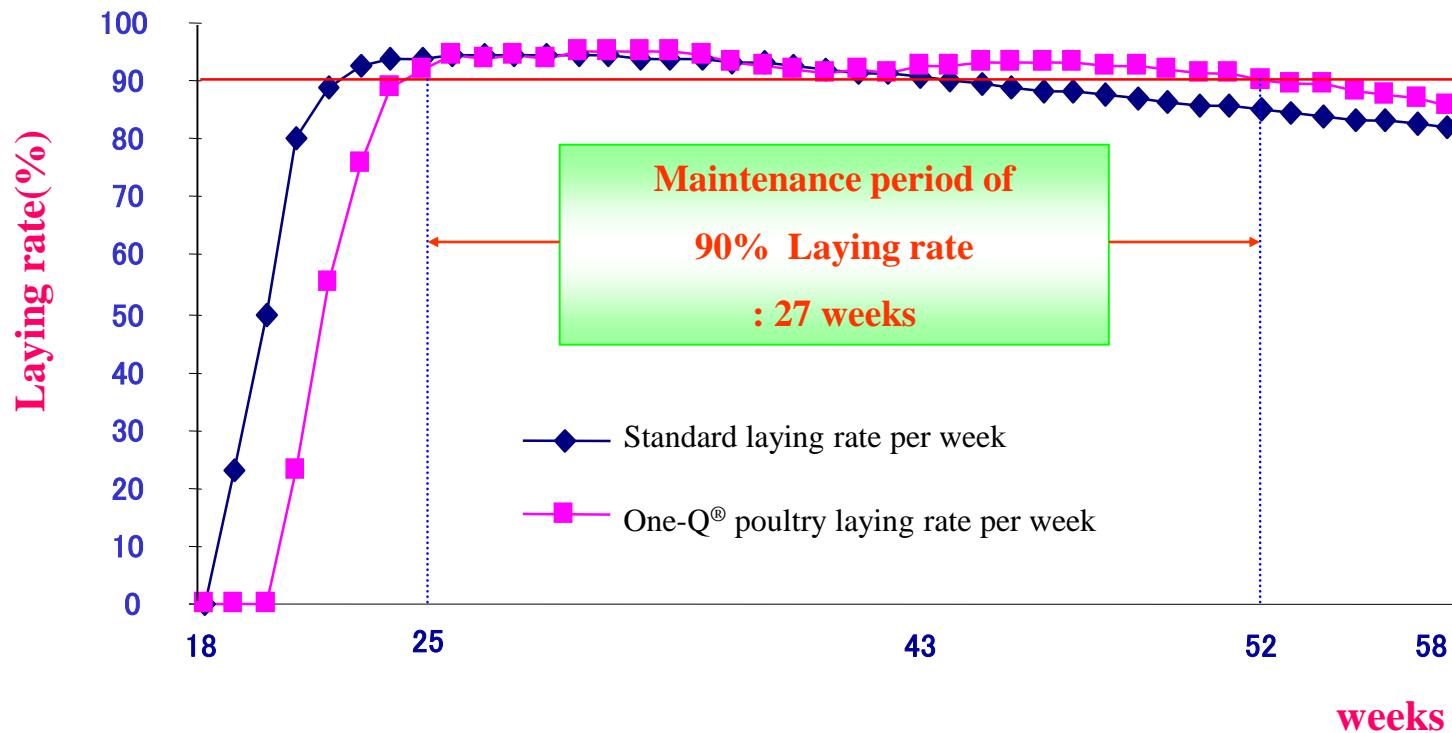
Species : White Hubbard



Breeder chicks



Laying hen



Test Place : B Farm of KongJu in Korea

Test Period : 2002. 11. 20 ~ 2003. 8. 26 (18 week ~ 58 week)

Test Laying hen No. : 27,000

Species : RomanBrown



Egg quality



1. Test Farm : Ham il Farm

2. Test Breeder No. : 64,300

3. Species : Hy – Line Brown

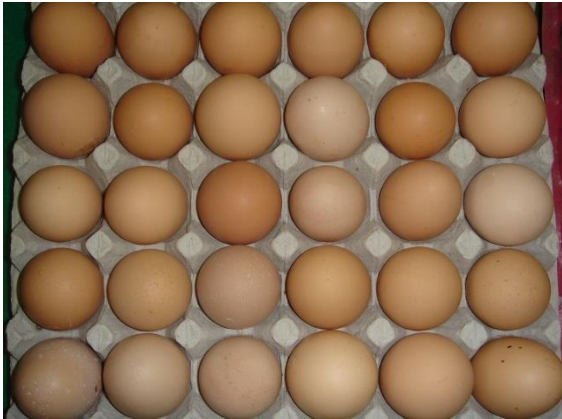
4. Test Period : August 15, 2005 ~ September 15, 2005 (1 month)

5. Test Object : Egg quality

6. Feed additive : One-Q Poultry



Before Test



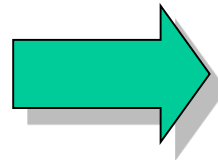
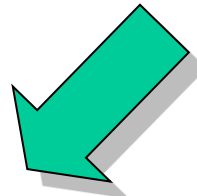
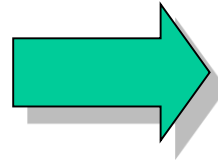
After 2 week



After 3 week



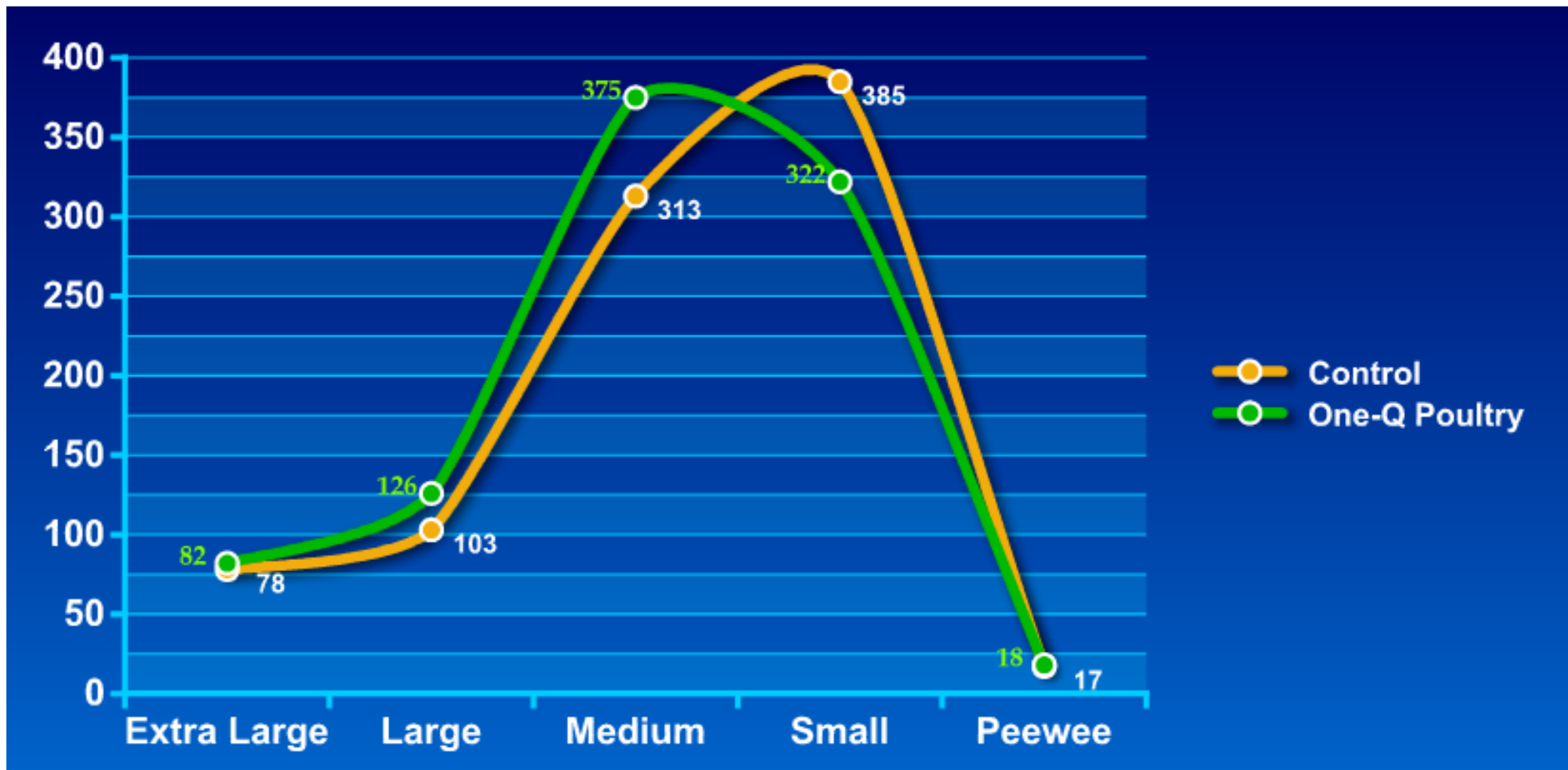
After 4 week



Field test result in Philippine



	Control	Treatment
Initial No. Laying Chicken	1,200	1,200
Final No. of Laying Chicken	1,138	1,164
Days On Test	62	62
Mortalities Recorded (%)	23 (1.92 %)	16 (1.33 %)
Early Culling	39 (3.25 %)	20 (1.67 %)
Total Fall-Outs	62 (5.17 %)	36 (3.00 %)
Ave. Daily Egg Production (%)	896 (78.73 %)	923 (79.30 %)
Relative Egg Sizes Recorded/Day		
Extra Large	78 (8.70 %)	82 (8.88 %)
Large	103 (11.50 %)	126 (13.65 %)
Medium	313 (34.93 %)	375 (40.63 %)
Small	385 (42.97 %)	322 (34.89 %)
Peewee	17 (1.90 %)	18 (1.95 %)





Effect of dietary One-Q on the Productivity, Utilization of Energy and Amino acid in Poultry

Test : College of Animal Bioscience and Technology, Kunkuk University

Species : Hy – Line Brown layers, 59-weeks-old

Test Object : Energy nergy values of diet, Feed efficiency
Egg production, egg quality,
Cecal microflora and viscosity of intestinal in laying hen

6. Feed additive : One-Q Poultry

Experimental design



	Gluten meal	Fish meal	Soybean meal	DDGS	One-Q®
Gluten meal	30 g	-	-	-	-
Gluten meal+ One-Q®	30 g	-	-	-	0.1%
Fish meal	-	30 g	-	-	-
Fish meal+ One-Q®	-	30 g	-	-	0.1%
Soybean meal	-	-	30 g	-	-
Soybean meal+ One-Q®	-	-	30 g	-	0.1%
DDGS	-	-	-	30 g	-
DDGS+ One-Q®	-	-	-	30 g	0.1%

Energy values of dietary One-Q

	Gluten meal		Gluten meal+ One-Q		Fish meal		Fish meal+ One-Q	
TME	5172.30	±47.92	5443.62	±133.86	4259.18	±201.94	4809.21	±186.48
TME_n	5120.93	±45.39	5383.72	±126.37	4200.45	±193.33	4732.36	±180.21

	Soybean meal		Soybean meal+ One-Q		DDGS		DDGS+ One-Q	
TME	3364.54	±83.02	3672.54	±17.94	3468.08	±52.10	3504.58	±215.46
TME_n	3321.20	±81.79	3622.45	±13.71	3445.72	±49.866	3505.86	±205.19

TME : true metabolizable energy

TME_n : nitrogen corrected true metabolizable energy

The effect of One-Q on TAAA

	Gluten meal	Gluten meal+ One-Q 0.1%	Fish meal	Fish meal+ One-Q 0.1%
Aspartic acid	96.68 ±1.10	97.70 ±0.86	91.91 ±3.77	96.41 ±3.03
Threonine	96.69 ±0.71	97.55 ±0.95	96.04 ±1.02	98.08 ±1.76
Serine	97.99 ±0.75	98.07 ±0.81	96.14 ±1.03	97.68 ±2.13
Glutamic acid	98.32 ±0.35	98.84 ±0.44	91.69 ±3.85	96.65 ±2.71
Proline	98.01 ±0.38	98.06 ±0.69	95.41 ±0.64	95.61 ±2.30
Alanine	98.21 ±0.46	98.77 ±0.46	91.70 ±3.91	96.64 ±2.71
Cysteine	92.19 ±3.02	93.61 ±2.59	73.80 ±5.41 ^b	93.53 ±4.96 ^a
Valine	96.48 ±0.85	97.41 ±0.94	91.10 ±4.61	96.59 ±2.43
Methionine	98.57 ±0.65	99.13 ±0.35	96.69 ±0.75	98.24 ±1.11
Isoleucine	97.20 ±0.55	98.00 ±0.68	92.63 ±3.58	96.94 ±2.31
Leucine	98.50 ±0.15 ^b	98.96 ±0.34 ^a	92.92 ±3.63	97.07 ±2.04
Tyrosine	98.03 ±0.76	98.74 ±0.47	94.00 ±3.15	97.43 ±1.49
Phenylalanine	98.11 ±0.77	98.64 ±0.54	92.98 ±2.82	96.92 ±2.33
Histidine	95.30 ±0.83	96.99 ±1.57	92.19 ±3.32	96.63 ±3.23
Lysine	96.79 ±2.33	98.64 ±1.04	97.44 ±1.09	98.74 ±1.14
Arginine	98.42 ±0.65	98.64 ±0.55	82.36 ±5.97	84.51 ±1.36
Total average	97.22 ±0.41	97.98 ±0.39	91.96 ±1.36	96.12 ±1.14

The effect of One-Q on TAAA

	Soybean meal	Soybean meal+ One-Q 0.1%	DDGS	DDGS+ One-Q 0.1%
Aspartic acid	95.52 ±1.16	96.48 ±1.03	80.62 ±6.02	86.11 ±3.62
Threonine	94.94 ±1.12	96.13 ±1.34	90.55 ±3.18	91.80 ±1.85
Serine	95.62 ±1.17	96.28 ±1.11	88.17 ±3.10	92.35 ±3.30
Glutamic acid	96.38 ±0.92	97.15 ±0.87	88.86 ±3.27	92.18 ±2.66
Proline	96.65 ±3.38	97.38 ±2.47	93.61 ±3.92	95.81 ±0.87
Alanine	92.78 ±1.79	94.76 ±1.43	88.31 ±3.31	93.15 ±2.83
Cysteine	85.31 ±6.60	86.83 ±6.74	62.63 ±0.61 ^b	85.24 ±5.47 ^a
Valine	94.30 ±0.65 ^b	96.06 ±0.78 ^a	78.62 ±4.00 ^b	88.67 ±4.72 ^a
Methionine	94.68 ±0.85	96.05 ±2.32	94.32 ±1.78	94.24 ±2.28
Isoleucine	95.02 ±0.84 ^b	96.76 ±1.12 ^a	86.85 ±3.48 ^b	92.21 ±2.17 ^a
Leucine	94.51 ±0.74 ^b	96.55 ±1.15 ^a	93.91 ±1.60	96.03 ±1.27
Tyrosine	94.58 ±1.08	96.43 ±1.43	91.81 ±2.14	95.10 ±2.19
Phenylalanine	95.11 ±0.65 ^b	96.65 ±1.02 ^a	91.38 ±2.38	95.10 ±3.58
Histidine	91.07 ±4.21	92.28 ±1.78	83.85 ±6.45	77.39 ±4.77
Lysine	97.49 ±0.25	97.93 ±0.93	81.58 ±0.14	85.14 ±5.84
Arginine	87.83 ±1.54	88.50 ±0.90	93.68 ±1.69	91.89 ±1.41
Total average	93.86 ±0.72	95.14 ±0.64	87.32 ±0.89 ^b	91.12 ±1.24 ^a

The effect of dietary One-Q on **feed intake and laying performance** of laying hens at the late production.

Items	Control	One-Q
Feed intake (g/day/bird)	130.65±0.30	135.45±1.80
Egg Production (%)	77.78±1.47	78.92±1.44
Egg weight (g/egg)	67.65±0.30	68.00±0.30
Egg mass	52.61±1.01	53.66±0.99

The effect of dietary One-Q on **egg interiors and eggshell qualities** of laying hens at the late performance.

Items	Control	One-Q
Eggshell strength (kg/cm ²)	3.11±0.10	3.14±0.11
Eggshell thickness (mm/100)	35.21±0.50	36.20±0.45
Egg Shell color	26.80±0.84	28.28±0.66
Egg yolk color, R.C.F	6.98±0.88	7.00±0.05
High unit	86.73±0.92	88.26±1.07

The effect of dietary One-Q on **biochemical parameters of blood** of laying hens at the late production

Items	Control	One-Q
Total-C (mg/100 mL)	31.20±2.59	34.28±4.14
GOT (U/L)	98.13±3.79	92.04±4.47
GPT (U/L)	10.11±0.62	11.00±0.49

Abbreviations : Total-c, total cholesterol; GOT, glutamic oxaloacetic transminase;
GPT, glutamic pyruvic transminase.
Data are presented as means ± SE.

The effect of dietary One-Q on **initial viscosity** of laying hens at the late production.

Items	Control	One-Q
Viscosity (Pas)	5.01±0.35	2.36±0.25

The effect of dietary One-Q on **cecal ammonia concentration** of laying hens at the late production.

Items	Control	One-Q
Viscosity (Pas)	1.74±0.13	1.20±0.06

**Bio-Feed
Additive**



Enzyme Activation System Applied
Products With Biological Enzyme
Approved by Korean Government As
New & Excellent Korean Technology

OneQ[®]

Fish

Troubles?
Let's solve them with One-Q!

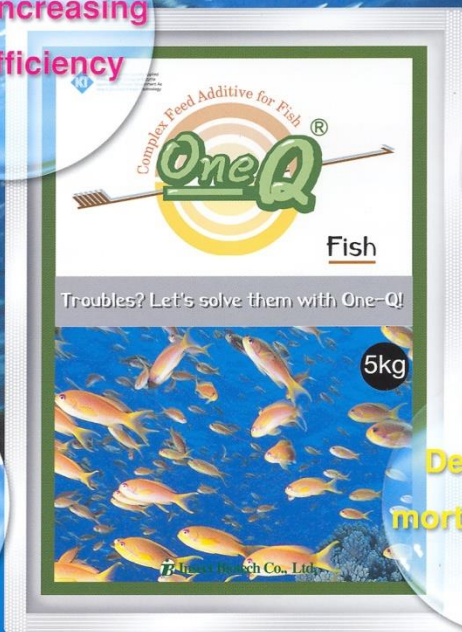


**Greatly increasing
Feed efficiency**

**Prominent
control effect on
allimentary
disease**

**Strengthening
the level of
immunity**

**Decreasing
mortality for fry**



B Insect Biotech Co., Ltd.

One-Q[®] Fish

Experimental Location : Pearl River Fisheries Research Institute (Guangzhou),
Chinese Academy of Fishery Science

Experimental Period : Jun. 30th 2006 ~ Aug. 25th 2006 (56 days)

Experimental Fish : The tilapia *Oreochromis niloticus* x *O. ureus*

Experimental Feed :

Composition of Ingredient : CP⌚30.0%, CF⌚15.0%, CA ⌚ 5.0%, Ca 0.5~1.2, TP ⌚0.6, Lysine ⌚1.0

Salt 0.2~0.8, Moisture ⌚ 12.9%

Used of pellet-treatment of the feed : 75° C, 5kg/cm², Diameter of pellet-feed 0.18mm



The effect of One-Q Fish on the growth of tilapia.

	Control	One-Q Fish
Ave. Start Weight (g)	8.17 \pm 0.95	8.55 \pm 0.41
Ave. Final Weight (g)	44.18 \pm 1.54	49.16 \pm 8.97
Gained Weight Rate (%)	445.61 \pm 60.97	478.93 \pm 133.98
FCR	1.45 \pm 0.10	1.38 \pm 0.11

The effect of One-Q Fish on the apparent digestibility of tilapia.

	Apparent digestibility of protein	Apparent digestibility of dry material
Control	81.09 \pm 0.78	47.21 \pm 2.04
0.1% One-Q Fish	83.20 \pm 3.71	54.37 \pm 9.17

Apparent digestibility of dry materials of feed(%) = $(1 - \text{Cr}_2\text{O}_3 \text{ in feed} / \text{Cr}_2\text{O}_3 \text{ in dejecta}) \times 100$

Apparent digestibility of protein (%) = $(1 - \text{Cr}_2\text{O}_3 \text{ in feed} \times \text{protein in dejecta} / \text{Cr}_2\text{O}_3 \text{ in dejecta} \times \text{protein in feed}) \times 100$

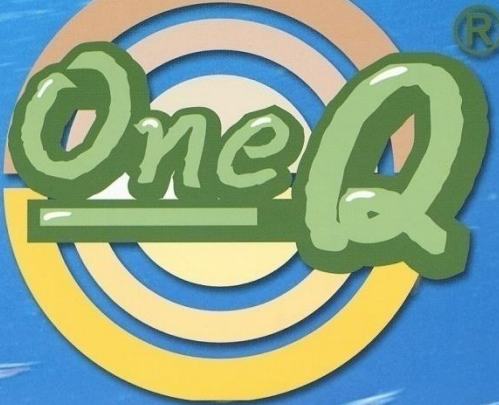
The effect of One-Q Fish on the immunological of tilapia.

Immunity	Control	One-Q Fish
LZM (Lysozyme)	8.60 ± 0.29^a	8.82 ± 2.37^b
SOD (Superoxide Dismutase)	49.81 ± 1.46^a	59.33 ± 0.63^a

**Bio-Feed
Additive**



Enzyme Activation System Applied
Products With Biological Enzyme
Approved by Korean Government As
New & Excellent Korean Technology



Shrimp

Troubles?
Let's solve them with One-Q!



**Increasing Feed
quality and
efficiency**

**Preventing
massive death
and increasing
survival rate**

**Controlling
the activity of
gut microbial
flora**

**Greatly
improving the
digestibility
of feed**



Insect Biotech Co., Ltd.

One-Q[®] Shrimp

Help to inhibit growth of pathogenic microbe.

Decrease death rate

Improve feed efficiency and weight

Strengthen the level of immunity

Promote the shrimp growth



Experimental Location : Pearl River Fisheries Research Institute (Guangzhou),
Chinese Academy of Fishery Science

Experimental Period : Jul. 27th 2006 ~ Sep. 25th 2006 (60 days)

Experimental Shrimp : *Litopenaeus vannamei* (3cm –length- shrimp)

Experimental Feed :

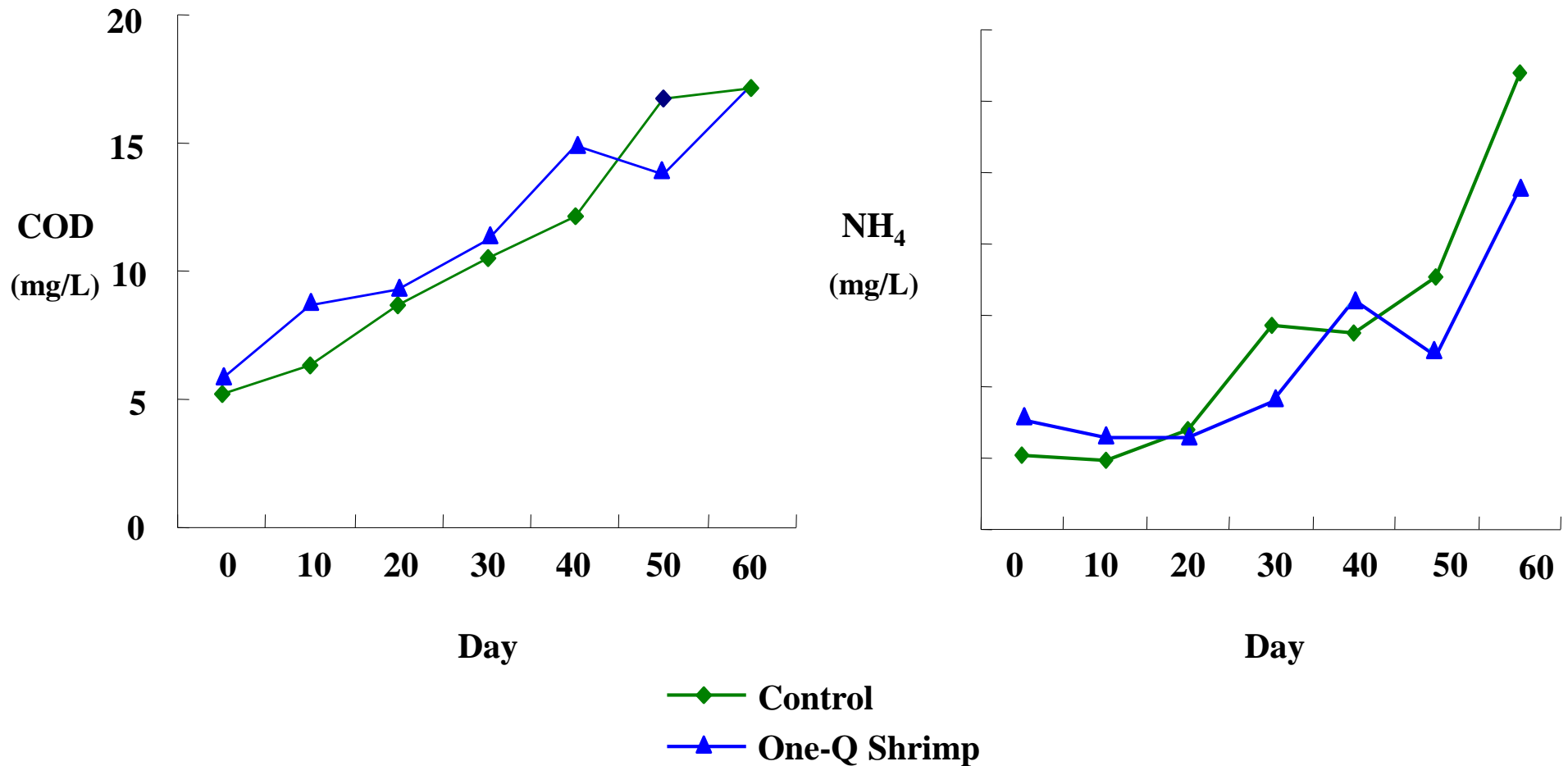
Composition of Ingredient : CP40.0%, CF4.0%, CA15.0%, Moisture12.0%, CL5.0%, TP1.0%, Ca4.0%

Used of pellet-treatment of the feed : 98~105° C, 1h, Diameter of pellet-feed 0.18mm

The effect of One-Q Shrimp on the total weight and FCR after 60 days.

		Initial Total Weight (g)	Final Total Weight (g)	Weight gain (g)	Ave. Total Weight (g)	Survival Rate (%)	Ave. Survival rate (%)	FCR	Ave. FCR
Cont.	1	27.53	342.96	315.43	413.27 ±61.1^a	74	82.33 ±7.23^a	1.50	1.52 ±0.10^a
	2	31.02	443.28	412.26		86		1.63	
	3	33.41	453.57	420.16		87		1.44	
One- Q	1	32.46	491.34	458.88	486.03 ±6.88^b	90	90.67 ±1.15^b	1.40	1.47 ±0.15^a
	2	27.55	488.48	460.93		92		1.61	
	3	35.45	478.26	442.81		90		1.33	

The effect of One-Q Shrimp on the cultured environment.



The effect of One-Q Shrimp on the immunological of shrimp.

Immunity	Control	One-Q Shrimp
ACP (Acid Phosphatase)	4.12 ± 0.63^a	7.54 ± 0.32^b
LZM (Lysozyme)	10.26 ± 3.11^a	15.13 ± 5.63^b
SOD (Superoxide Dismutase)	114.36 ± 7.08^a	115.63 ± 5.68^a

▶ 붙는 곳

1kg

어류의 소화기능 개선 및 촉진

큐라자임™

• Q-razyme™ •



판매원

유한양행

1kg

어류의 소화기능 개선 및 촉진

Q-razyme™

【성분 등록번호】 제 24-23호

【사료의 명칭 및 사료의 형태】 효소제(큐라자임), 가루

【사료성분량】 본제 1kg당

성분명	성분량
프로티아제 (Protease)	100,000 I.U.
리파제 (Lipase)	300,000 I.U.
알파 아밀라제 (α -amylase)	200,000 I.U.
바실러스 서브틸리스 (Bacillus subtilis)	1,000 MCFU

【사료의 용도】 수산용사료 첨가제, 배합사료원료

【실 중 량】 1kg

【주의 사항】 개봉시 되도록 빠른 시간내에 사용하시고 장기 보관시는 밀봉하여 통풍이 잘되고 서늘한 곳에 보관하십시오.

【사용 기 간】 제조일로부터 2년

【권장 사용량】 어류 : 사료 톤당 2~5kg

※본 제품은 재정경제부고시 "소비자피해보상규정"에 의거 소비자의 정당한 피해는 보상하여 드립니다.

※빈 포장 및 용기는 분리수거하여 주십시오.

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