

Ekofish Meal in swine feeding

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Purpose of the study

Purpose of this study was to evaluate possibilities of herbal protein feed **EKOFISH MEAL** used as feed component at sows in lactation, suckling pigs, growing piglets and swine at the beginning of fattening period.

Scheme experiment

Group	1	2	3
Sows in lactation			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Feed /head /day, kg	ad libitum	ad libitum	ad libitum
Suckling pigs - creep feeding			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Feed /head /day, kg	ad libitum	ad libitum	ad libitum
Growing pigs			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Feed /head /day, kg	ad libitum	ad libitum	ad libitum
Swine at the the beginning of fattening period			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Feed /head /day, kg	ad libitum	ad libitum	ad libitum

Following feeds was used in feed : corn, hominy feed, soybean meal, fish meal, sunflower meal, Ekofish meal, **milk replacement for pigs - Ekolak**, soybean grit, limestone, mono-calcium sulfate, salt, vitamin-mineral premix, synthetic lysine.

Production results of sows in experment

Group	1 kontrola	2	3
Pregnant sows			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Weight before farrowing, kg	234,2	228,8	227,2
Weight on weaning, kg	194,8	192,7	192,7
Sows at lactation period			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Average daily consumption of food, kg	3,84a**	3,66a	3,76
Weight loss of sows, % before farrowing* - on weaning	9,0	7,4	9,8
Service period, days	9,0	7,4	9,8

* - Control group was measured for 9.9 days, second experimental group for 10.3 days and the third for 9.3 days before farrowing.

***. These signs upon average values shows a difference of $P < 0.05$.

Production results of suckling piglets in experiment

Group	1 control group	2	3
Piglets			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Duration of lactation, days	28,1	28,4	28,4
Number of live piglets /farrow	11,10	11,55	11,20
Number of stillborn piglets/farrow	0,50	0,30	0,20
Number of weaned piglets/farrow	9,70	9,00	9,00
Loss piglets in lactation, %	12,61	22,08	19,64
Average weight on farrowing, kg	1,417	1,473	1,428
Average weight at weaning, kg	7,29	7,27	6,99
Average daily weight gain, g	210	208	197
Compared to control group, %	-	-0,95	-6,19
Compared to first experimental group, %	-	-	-5,29

Production results of weaned pigs at the beginning of experiment

Group	1 kontrola	2	3
Growing piglets 8,3-15 kg			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Body weight of pigs at the beginning of experiment, kg	8,21	8,21	8,20
Body weight of pigs at the end of experiment, kg	14,64a*	14,31	13,61a
Duration of experiment, number of days	29	29	29
Average daily weight gain, g	222b	210	186b
Compared to control group, %	-	-5,40	-16,22
Compared to first experimental group, %	-	-	-11,43
Average daily food consumption, kg	0,417	0,433	0,397
Compared to control group, %	-	+3,84	-4,80
Compared to first experimental group, %	-	-	-8,31
Food conversion, kg	1,92	2,05	2,37
Compared to control group, %	-	-6,77	-23,44
Compared to first experimental group, %	-	-	-15,61

* These signs upon average values shows a difference of $P < 0.05$.

Production results of weaned pigs at the end of experiment

Group	1 kontrola	2	3
Growing piglets 8 - 24 kg			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Body weight of pigs at the beginning of experiment, kg	8,21	8,21	8,20
Body weight of pigs at the end of experiment, kg	23,99	23,90a	21,94a
Duration of experiment, number of days	51	51	51
Average daily weight gain, g	309	307b	269b
Compared to control group, %	-	-0,65	-12,94
Compared to first experimental group, %	-	-	-12,38
Average daily food consumption, kg	0,682	0,674	0,675
Compared to control group, %	-	-1,17	-1,03

Compared to first experimental group, %	-	-	+0,14
Food conversion, kg	2,20	2,19	2,56
Compared to control group, %	-	+0,45	-16,36
Compared to first experimental group, %	-	-	-16,89

*.These signs upon average values shows a difference of P<0.05.

Production results in pre-fattening period

Group	1 control	2	3
Fattening pigs, 25-60 kg			
Fish meal in mixture	✓	✗	✗
Ekofish Meal in mixture	✗	✓	✗
Body weight of pigs at the beginning of experiment, kg	25,16	26,30	24,50
Body weight of pigs at the end of experiment, kg	57,74	57,60	54,80
Duration of experiment, number of days	55	55	55
Average daily weight gain, g	592	569	551
Compared to control group, %	-	-3,88	-6,92
Average daily food consumption, kg	1,84	1,76	1,79
Compared to control group, %	-	-4,35	-2,72
Food conversion, kg	3,10	3,10	3,26
Compared to control group, %	-	0	105,16

Summary

The aim of the experiment was to explain effects of herbal protein feed **Ekofish Meal** used in feed of lactating sows, suckling pigs, growing piglets and pigs at the beginning of fattening. Results of study showed the use of Ecofish meal in feed had great effects:

- Reduced weight loss at sows in lactation for 6,2% compared to feed composed of fish meal and bigger weight loss during lactation for 3,5% without use of fish meal or Ecofish meal
- Shorter service period for 1,6 days compared to group where it was used mixture with fish meal and 2,4 days compared to group where it wasn't used mixture with Ecofish meal.
- Less food consumption at sows for 2,7% compared to mixture without Ekofish meal, 4,7% compared to mixture with fish meal
- Bigger consumption of prestarter diet for about 1 kg/farrow at mixtures without Ekofish Meal and 1,08 kg/farrow for mixture with fish meal
- The same number of weaning pig, 9.0 pigs/farrow like at group without Ekofish meal and 0,7% pigs/farrow less compared to group with Ekofish meal in feed
- Better weight gain for 5,3% at suckling pigs than at group without Ekofish meal in feed and with almost the same growth as at the group fed with fish meal in feed
- At the beginning of breeding with better weight gain for 11.4% and better food conversion for 15.6% compared to mixture without Ecofish meal
- At the same period, worse growth for about 5,4% and worse food conversion for 6.8% compared to feed with fish meal
- At the ending period of breeding better weight gain for 2.3% and better food conversion for 3.0% compared to feed with fish meal or better weight gain for 12.94% and better food conversion for 11.8% compared to mixture without Ecofish meal
- In whole breeding period with similar production like at mixture with fish meal but much better, for 12.4% weight gain and better food conversion for 16.9% compared to mixture where it wasn't used Ecofish meal in feed
- Analyzing price of growth of weaning pigs showed that use of **Ekofish Meal-a makes weight gain cheaper for 4,7%** compared to use of fish meal, or 4% compared to mixture without Ekofish meal.
- Use of fish meal created a increment in growth for 3.9% with the same food conversion at pigs in period before fattening.
- Including Ekofish Meal in mixture increased weight gain for 3,2% and food conversion for 5,2% compared to mixtures without use of Ekofish Meal
- Using Ekofish meal in mixtures for feeding pigs you have a cheaper weight gain for 2.9% than it is at mixtures with fish meal or for 2.5% cheaper compared with mixture without Ekofish meal.

Results of study showed that it is recommended to use **Ekofish meal** in sow feeding, suckling pig, growing piglets and pigs at the beginning

of fattening.