



EXTRACTED SHREDDED MEAL OF OENOTHERA BIENNIS AS AN ALTERNATIVE PROTEIN SOURCE IN PIG NUTRITION.

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INTRODUCTION

Extracted shredded meal of **Oenothera Biennis (EOBM)** is a waste from the production of the physiologic effective oil for cosmetic or pharmaceutical industry. EOBM has relatively high content of crude protein and amino acids (lysine, threonine), therefore it is possible to utilize it as an alternative protein source in animal nutrition. **The aim of our work was to find out the effect of the addition of EOBM into complete feeding mixtures for fattening pigs on digestibility of nutrients and body weight gain.**



MATERIAL AND METHODS

There were 30 fattening pigs (LW x L) divided into 3 groups in the experiment. Pigs were fed with a complete feeding mixture A1 in the first stage of fattening (live weight 40 – 60 kg) and mixture CDP in the second stage (live weight 60 – 90 kg). EOBM was added to the basic mixture in amount of 3 % (group E1) and 6 % (group E2). The experimental groups was compared with standard group (S). The average nutritional composition of EOBM is shown in Table 1, nutritional composition of the feeding mixtures is in Table 2.

Pig growth was followed up by means of individual weighing in the periods of a week, also feeding mixture consumption. Digestibility coefficients of nutrients were determined in a balance experiment on basis of indicator method, sand insoluble in 4 M HCl was used as indicator.

Table 1 The average nutritional composition of EOBM

Dry matter	g/kg	924,32	Lysine	g/kg	9,65
Crude protein	g/kg	230,06	Threonine	g/kg	10,87
Digest.crude protein	g/kg	129,81	Potassium	g/kg	6,93
Fat	g/kg	14,79	Sodium	g/kg	0,41
Fibre	g/kg	197,99	Phosphorus	g/kg	7,49
Ash	g/kg	86,61	Calcium	g/kg	22,55
Metab. Energy	MJ/kg	6,66	Magnesium	g/kg	2,79
Starch	g/kg	17,71	Sand	g/kg	5,10

Table 2 The average nutritional composition of feeding mixtures

Nutrient		mixture A1 (1.stage)			mixture CDP (2.stage)		
		standard	+3%EOBM	+6%EOBM	standard	+3%EOBM	+6%EOBM
Dry matter	g/kg	869,74	868,35	876,47	871,27	870,22	870,90
Cr. protein	g/kg	191,94	192,63	196,88	153,09	155,50	157,60
Fat	g/kg	33,60	33,45	30,74	38,14	36,39	35,89
Fibre	g/kg	38,60	45,17	52,13	37,65	44,55	53,05
Ash	g/kg	48,33	49,19	52,17	39,92	41,14	44,27
Sand	g/kg	2,93	3,00	3,06	2,72	2,99	3,11
ME	MJ/kg	13,24	13,10	13,02	12,77	12,92	12,77
Lysine	g/kg	8,61	8,58	8,74	8,04	7,93	7,96
Threonine	g/kg	5,63	5,21	5,39	4,73	4,78	4,62

RESULTS

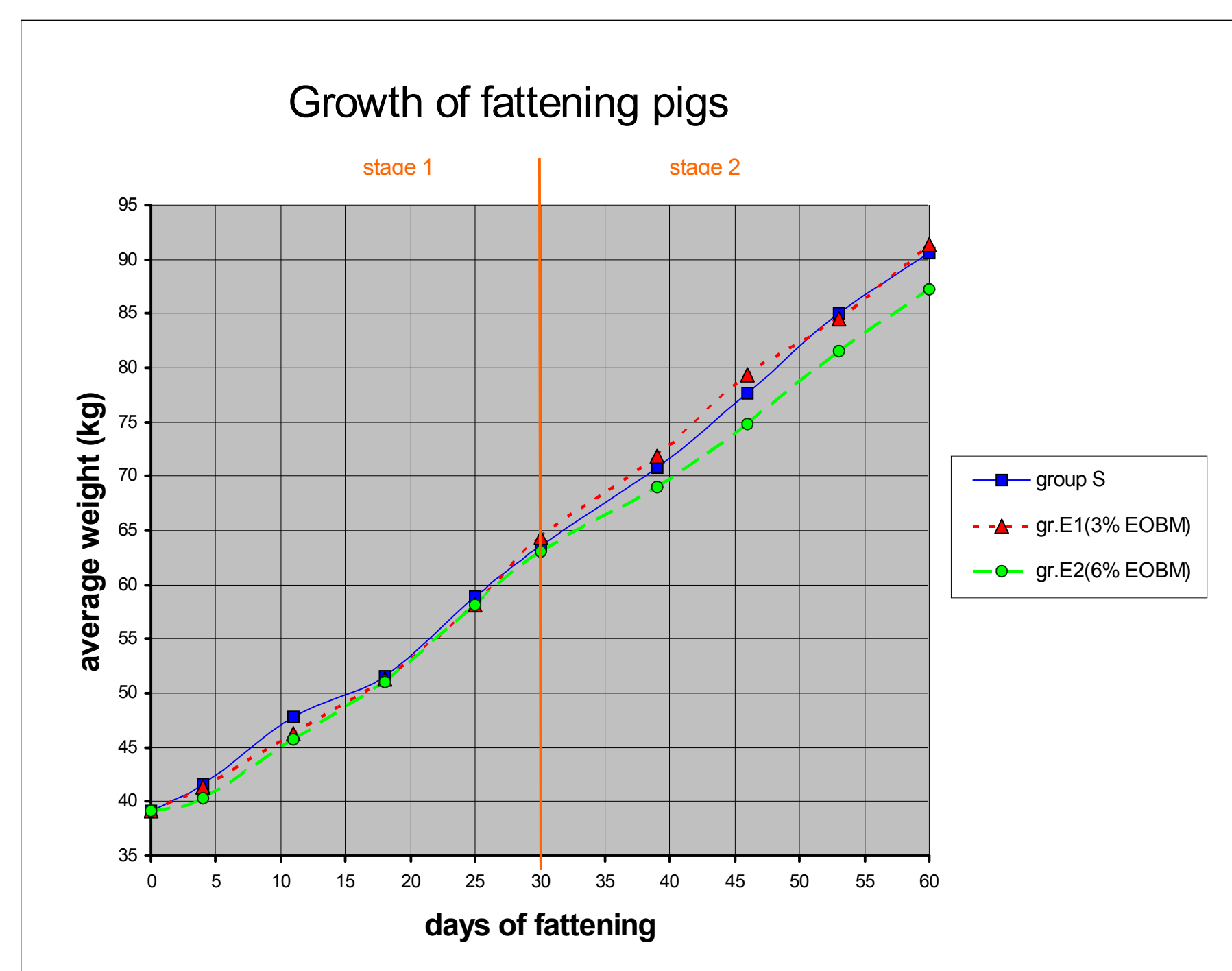
Table 3 Coefficients of digestibility

Stage	Group		Crude protein	Fat	Fibre	Starch	Metab. Energy
1	S	x	74,47	56,92	18,32	98,19	86,10
		±S _x	2,19	6,13	8,47	0,33	0,82
	E1	x	73,90	63,84	27,73	97,85	85,90
		±S _x	1,06	3,20	8,00	0,47	1,06
	E2	x	69,26 +	59,97	29,14 +	97,31	83,55 +
		±S _x	1,85	6,17	4,04	0,56	0,92
2	S	x	85,09	77,38	44,32	96,28	92,70
		±S _x	1,57	2,12	2,20	3,03	0,71
	E1	x	76,38 +	68,77 +	34,88 +	96,87	89,03 +
		±S _x	2,91	4,27	4,12	3,41	1,29
	E2	x	68,67 +	61,24 +	26,77 +	98,42	85,71 +
		±S _x	4,94	4,86	5,81	0,37	2,07

+ P < 0,05

Table 4 Effect of EOBM on weight gain and feed consumption

Indicator		Group		
		S	E1	E2
number of animals		10	10	10
average initial body weight	kg	39,2	39,1	39,1
	±S _x	5,06	4,93	5,05
Stage 1				
average final body weight	kg	63,6	64,4	63,1
	±S _x	6,48	8,15	7,62
average weight gain/day	g	813	843	800
average feed consumption/day	kg	2,02	2,1	2,09
aver.feed consump./1kg of w.gain	kg	2,49	2,49	2,61
Stage 2				
average final body weight	kg	90,6	91,4	87,2
	±S _x	8,52	11,29	8,13
average weight gain/day	g	900	900	839
average feed consumption/day	kg	2,62	2,61	2,72
aver.feed consump./1kg of w.gain	kg	2,91	2,90	3,24
Total fattening				
average final body weight	kg	90,6	91,4	87,2
	±S _x	8,52	11,29	8,13
average weight gain/day	g	857	872	819
average feed consumption/day	kg	2,32	2,36	2,39
aver.feed consump./1kg of w.gain	kg	2,71	2,70	2,92



CONCLUSION

The EOBM addition of 3% did not evidently influence the coefficient of digestibility of crude protein and metabolized energy in the first stage of fattening. The significant decrease of the digestible nutrients occurred after the addition of 6%. We noted also the decrease of weight gain in this group without statistically significant difference. **So the addition of 3% of EOBM did not influence parameters of fattening, therefore it is possible to recommend EOBM in this amount as an alternative protein source for finishing pigs.**

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