

COMPARISON OF DOUBLE-LOW RAPESEED MEAL TO SOYBEAN MEAL IN  
FEEDING EXPERIMENTS ON BROILER CHICKENS

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1. AIM OF THE STUDIES

A series of experiments was conducted to prove the replace-  
ment of soybean meal (SBM) by double-low rapeseed meal (RSM)  
in isocaloric and isonitrogenous diets for broiler chicks.  
This work was done within the bilateral scientific-techni-  
cal co-operative work GDR-- Poland.

2. EXPERIMENTAL PROCEDURE

	<u>Experiment 1</u>	<u>Experiment 2</u>
Strain of chicks	Tetra 82	Tetra 82
Sex	♂	♂ and ♀
Keeping	floor pens <sub>2</sub> 16 birds/m <sup>2</sup> under practical conditions	single wire bottom cages under scientific-ex- perimental conditions
Feeding	ad libitum	ad libitum
Weighings	at fortnight intervals	at fortnight inter- vals
Statistical calculation	variance analysis	variance analysis
Experimental period	1.-42. day of life	1.-49. day of life

3. EXPERIMENTAL DIETS

Table 1

COMPOSITION OF THE EXPERIMENTAL DIETS (EXPERIMENT 1) AND ANALYZED NUTRIENT CONTENT (Percentage)

	Group 1 Control	Group 2 RSM Canola	Group 3 RSM "Jantar"
Maize	23,5	28,0	28,0
Wheat	24,0	35,0	35,0
Barley	20,0	-	-
Soybean meal	18,5	10,0	10,0
Fish meal	2,0	2,0	2,0
Yeast (feed grade)	7,5	7,5	7,5
Maize germ oil	1,0	2,0	2,0
Minerals	2,5	2,5	2,5
Vitamins	1,0	1,0	1,0
RSM Canola	-	12,0	-
Polish RSM "Jantar"	-	-	12,0
DL-methionine	0,07	-	-
Crude protein	19,8	19,6	20,5
Crude fat	3,9	4,8	5,4
Crude fibre	6,4	5,5	6,1
Lysine <sup>1)</sup>	1,1	1,1	1,1
Methionine + Cystine <sup>1)</sup>	0,78	0,78	0,79
EFh/kg <sup>2)1)</sup>	565	567	564

1) Calculated values

2) Net energy fat, poultry

Table 2  
COMPOSITION OF THE FEED MIXTURES (EXPERIMENT 2) AND  
ANALYZED NUTRIENT CONTENT (Percentage)

	Group 1 Control	Group 2 convent. RSM	Group 3 RSM "Jantar"	Group 4 RSM "Jantar"
Maize	65,5	65,5	65,5	65,5
SBM	15,0	7,5	7,5	-
Yeast (feed grade)	15,0	15,0	15,0	15,0
Minerals	3,5	3,5	3,5	3,5
Vitamins	1,0	1,0	1,0	1,0
Convent. RSM	-	7,5	-	-
Polish RSM "Jantar"	-	-	7,5	15,0
Crude protein	20,8	20,0	20,8	20,8
Crude fat	3,9	3,5	3,9	3,7
Crude fibre	4,6	3,7	4,7	3,8
Lysine	1,2	1,2	1,3	1,3
Methionine + Cystine	0,70	0,70	0,71	0,79
EFh/kg <sup>1)</sup>	600	591	591	581

1) Net energy fat, poultry, calculated values

Table 3  
NUTRIENT AND GLUCOSINOLATE CONTENT OF THE USED RAPESEED MEALS  
(RSM) AND SOYBEAN MEAL (SBM)

	RSM Canola	Polish RSM "Jantar"/ '85 (Exp.1)	Polish RSM "Jantar"/ '84 (Exp.2)	convent. RSM	SBM
Dry matter (DM)	90,2	88,4	87,6	88,0	88,0
% of DM					
Crude protein	39,3	40,3	42,6	37,6	49,3
fibre	15,9	16,7	14,6	16,8	9,4
fat	3,2	3,7	3,7	4,2	1,8
ITC <sup>2)</sup>	0,10 <sup>1)</sup>	0,09	0,08	0,44 <sup>1)</sup>	-
VOT <sup>2)</sup>	0,16 <sup>1)</sup>	0,20	0,07	1,15 <sup>1)</sup>	-
Lysine <sup>3)</sup>	6,1	5,8	7,0	6,1	6,4
Methionine + Cystine <sup>3)</sup>	4,8	4,9	4,9	4,9	3,0

1) HPLC - values of glucosinolates see the poster of Bock et al., table 2

2) Modification of the method of Youngs and Wetter (1967)

3) Percentage of the protein content

4. RESULTS

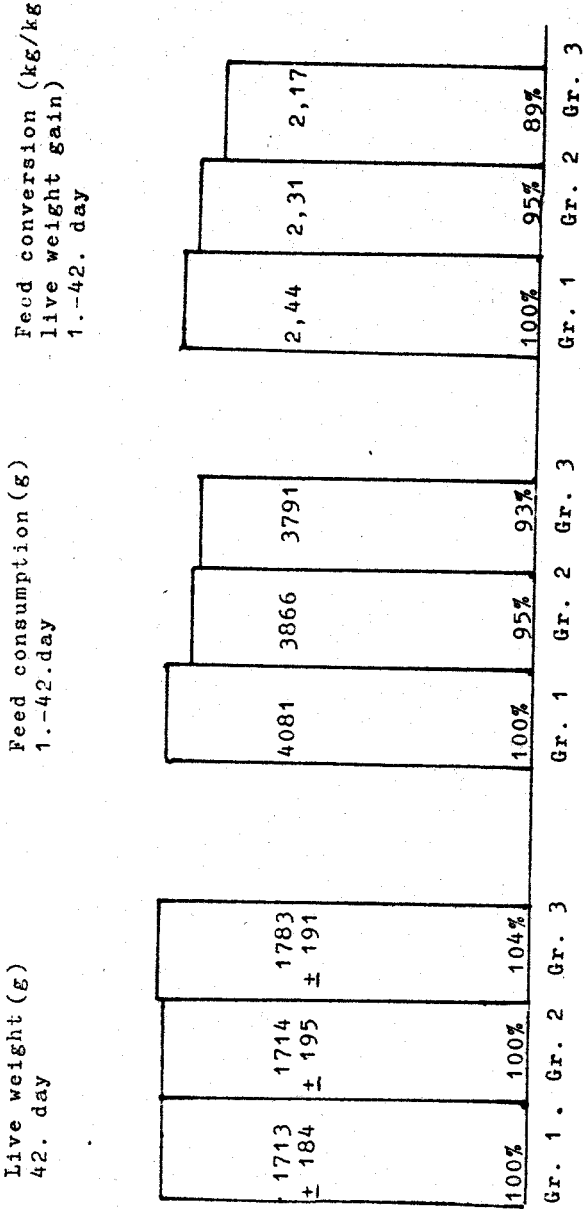


Fig. 1 Performance of broiler chicks fed diets with double-low RSM from 1.-42. day of live. Experiment 1

Live weight (g)  
49. day

Feed consumption (g)  
1.-49. day

Feed conversion (kg/kg live  
weight gain)  
1.-49. day

Gr. 1	Gr. 2	Gr. 3	Gr. 4	Gr. 1	Gr. 2	Gr. 3	Gr. 4	Gr. 1	Gr. 2	Gr. 3	Gr. 4
1940 ± 233	1798 ± 148	1832 ± 170	1841 ± 210	3683 ± 395	3432 ± 259	3471 ± 219	3413 ± 285	1,90 ± 0,11	1,91 ± 0,09	1,90 ± 0,10	1,86 ± 0,10
100%	93%	94%	95%	100%	93%	94%	93%	100%	100%	100%	98%

Fig. 2 Performance of broiler chicks fed with double-low RSM (from 1.-49. day of life)  
Experiment 2  
Mean values and standard deviation

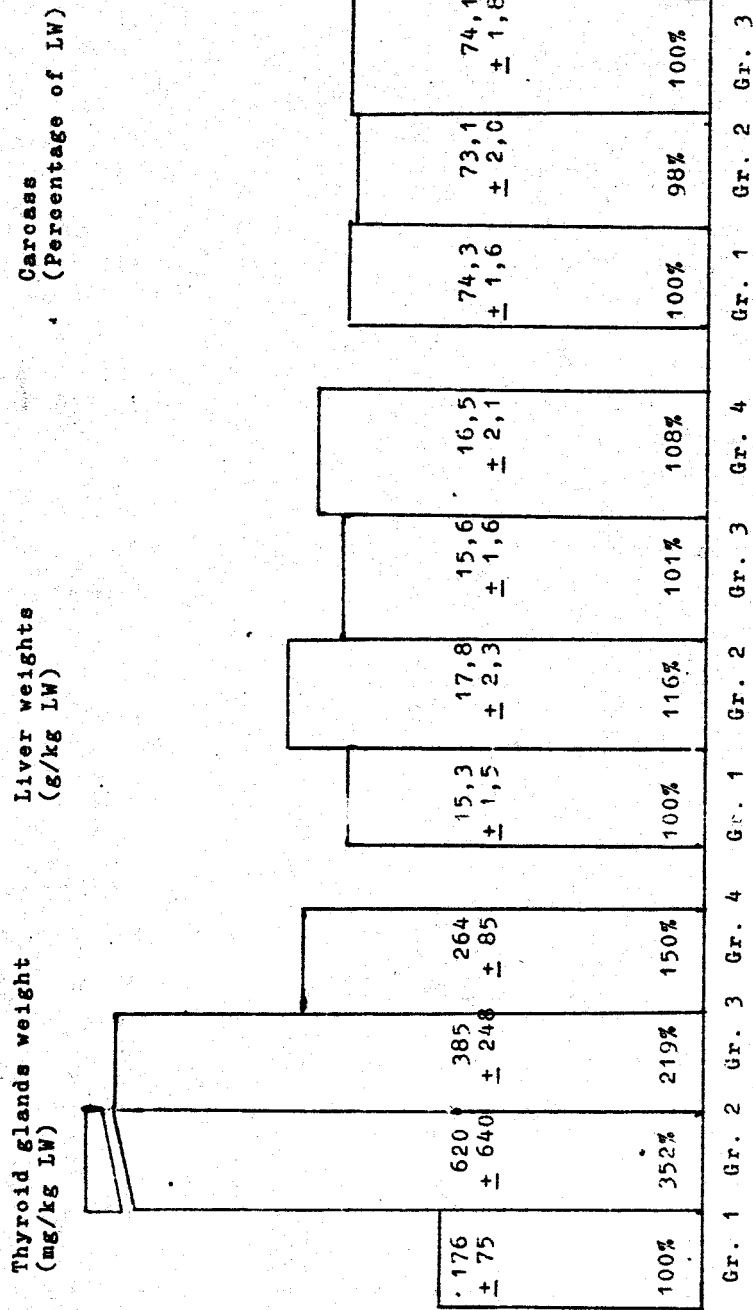


Fig. 2 (continued)

## 5. CONCLUSIONS

- Partial replacement of soybean meal up to 10 % by 12-15 % of double-low rapeseed meal (RSM) had no adverse effect on chick growth performance in well balanced diets.
- Obvious differences - observed after application of 15 % double-low RSM.- are not significant.
- Consequently, the new quality varieties allow remarkable RSM portions in starter and finisher diets for broiler chicks.