

# THE ANIMAL PROTEIN-REPLACE ON ECONOMY PRODUCTION IN PIGS

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## OBJECTIVE

Analysis of replacement impact of meat-bone meal for vegetable protein (soybean) on production potential was the major objective of this work.

## MATERIALS AND METHODS

The 72 hybrid pigs [(LWs x PN)x(LWd x L)] at the age of 68 days from birth of an average total live weight 24.15 kg were fattened. The testing fattening period took 91 days. The half of pigs (group I) were fed with a CFM where the animal protein was replaced by vegetable one (soybean), the others (group II) by using the meat-bone meal.

## CONCLUSIONS

As regards the achieved live weight, feed conversion ratio and average daily gain in the end of the test it was assessed, that identical values were achieved in both groups (106.0 kg resp. 106.2 kg; 2.6 kg resp. 2.66 kg; 921 g resp. 917 g). Despite of practically identical weight achieved in regular intervals during the tests in both evaluated groups, a higher meat-formation in pigs was found out in comparison group II, while the difference between both of the groups is equal to approximately 1.5 % of lean meat share during the fattening. Since no difference between the monitored groups was found out in profitability (34.03 % resp. 34.04 %) it can be stated, that meat-bone meal replacement by soyabean has no impact on the pig production potential as well as on economy.

Composition of experimental diets

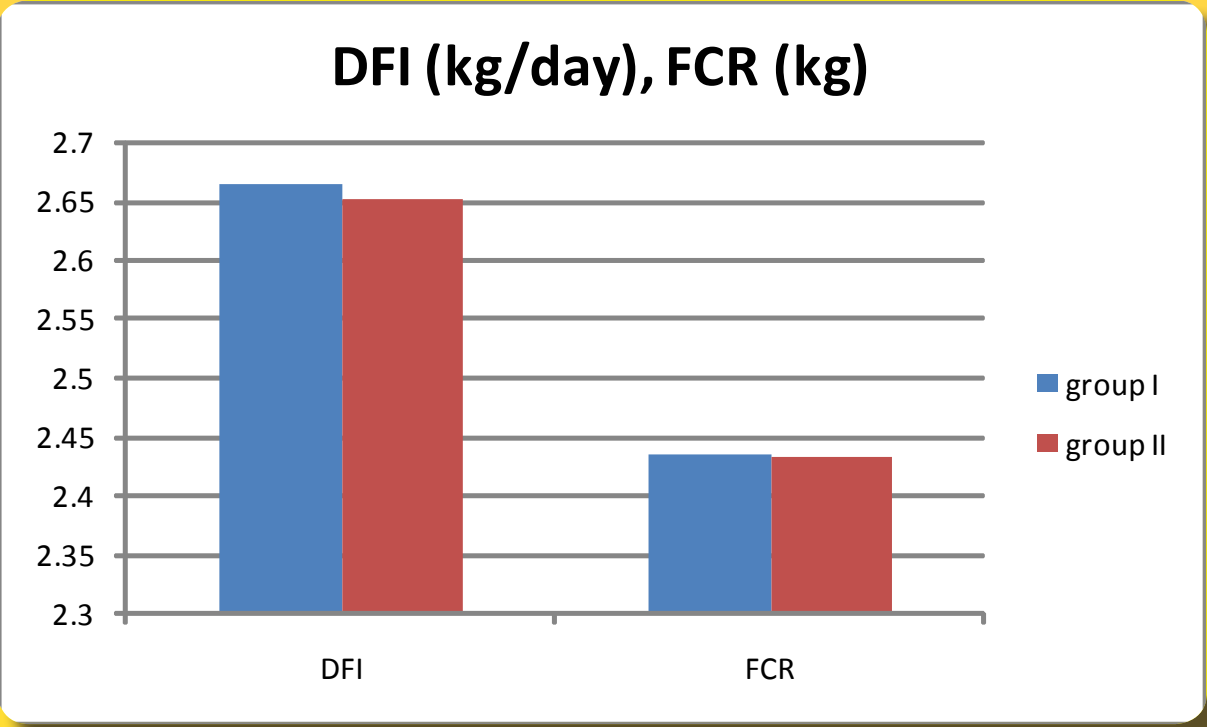
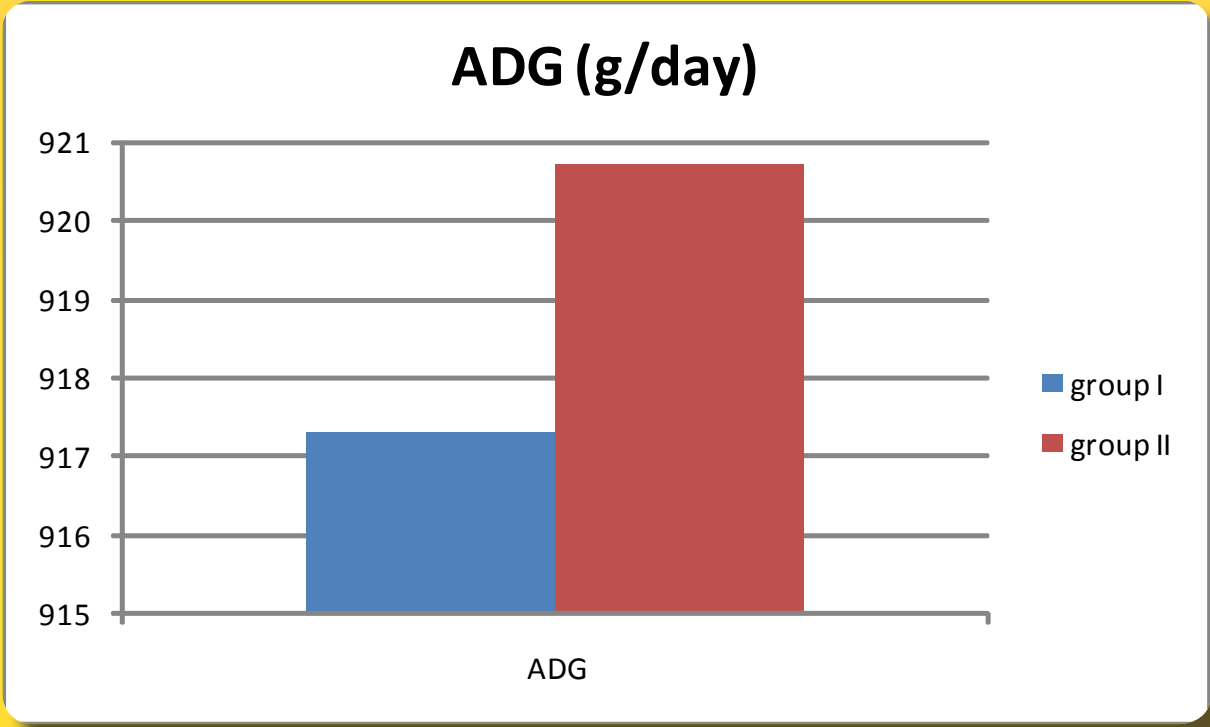
|                |       | CFM group I     |                 |                 | CFM group II    |                 |                 |
|----------------|-------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
|                |       | up to 40 kg LW  | 40 - 60 kg LW   | over 60 kg LW   | up to 40 kg LW  | 40 - 60 kg LW   | over 60 kg LW   |
|                |       | Feeding phase 1 | Feeding phase 2 | Feeding phase 3 | Feeding phase 1 | Feeding phase 2 | Feeding phase 3 |
| meat bone meal | g/kg  | 0               | 0               | 0               | 40              | 40              | 40              |
| Crude Protein  | g/kg  | 176             | 164             | 138             | 176             | 164             | 138             |
| ME             | MJ/kg | 13.1            | 13.1            | 13.1            | 13.1            | 13.1            | 13.1            |
| Lysine         | g/kg  | 10.5            | 9.6             | 7.5             | 10.5            | 9.6             | 7.5             |
| Theronine      | g/kg  | 6.9             | 5.8             | 4.5             | 6.9             | 5.8             | 4.5             |
| Methionine     | g/kg  | 3.2             | 2.9             | 2.2             | 3.2             | 2.9             | 2.2             |



## RESULTS

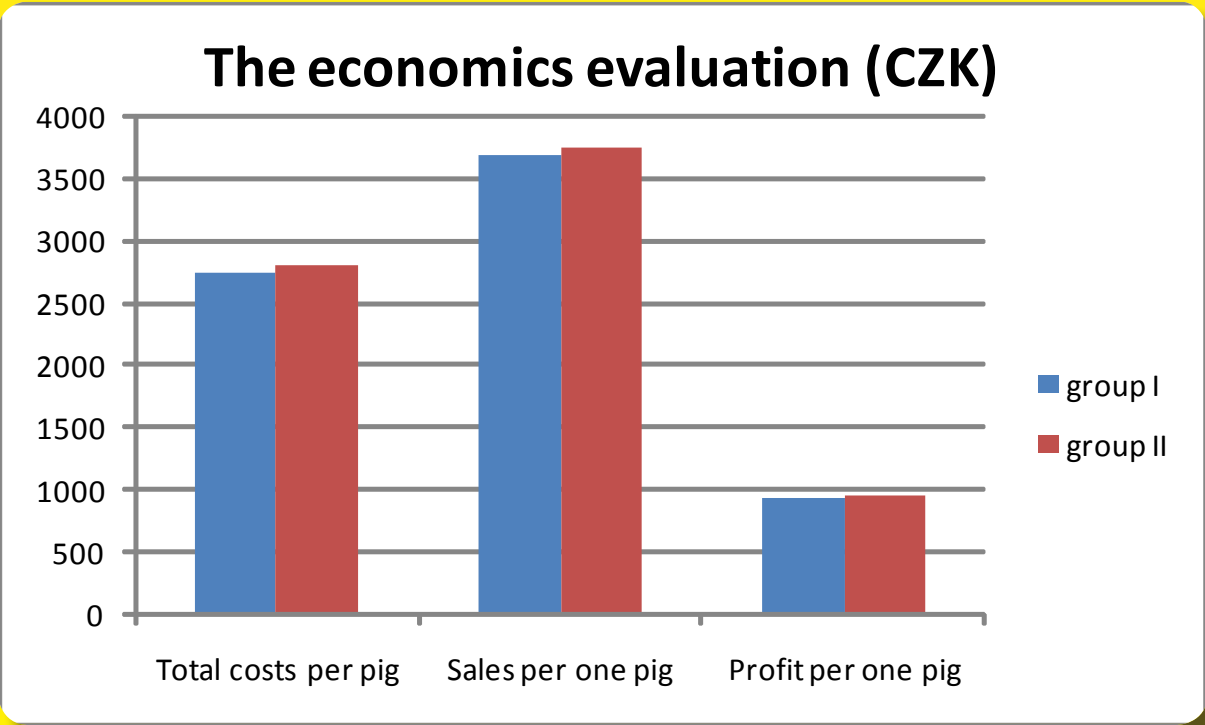
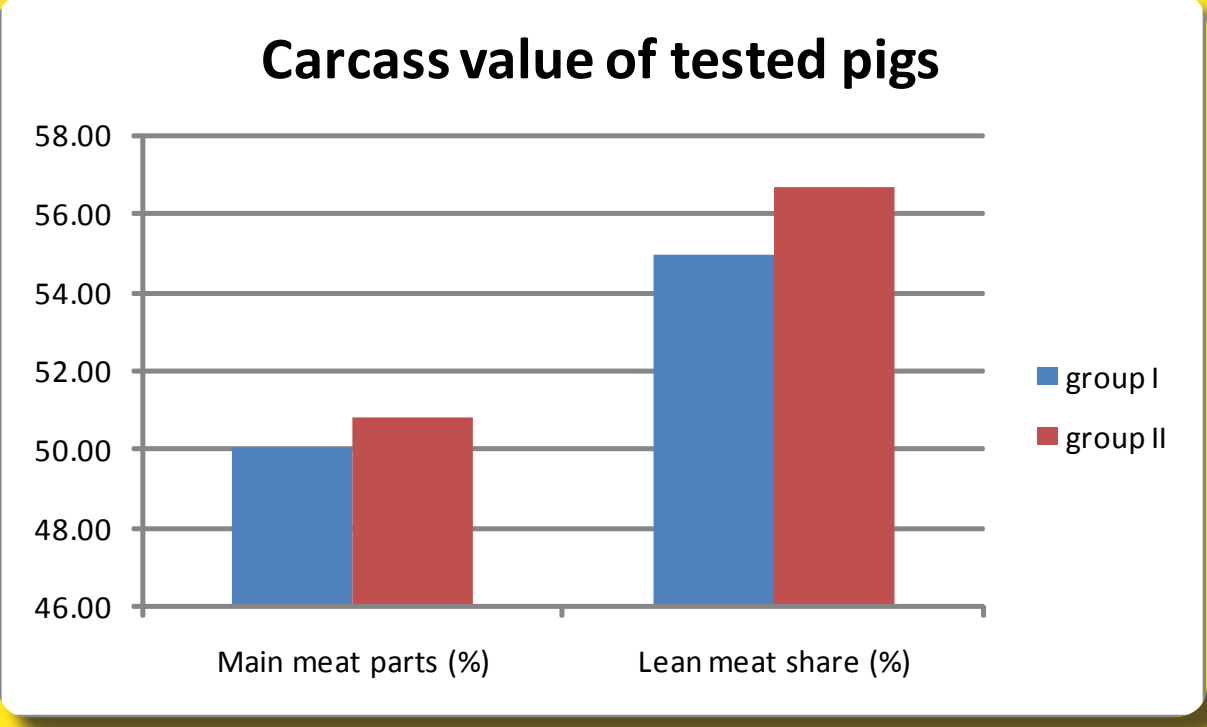
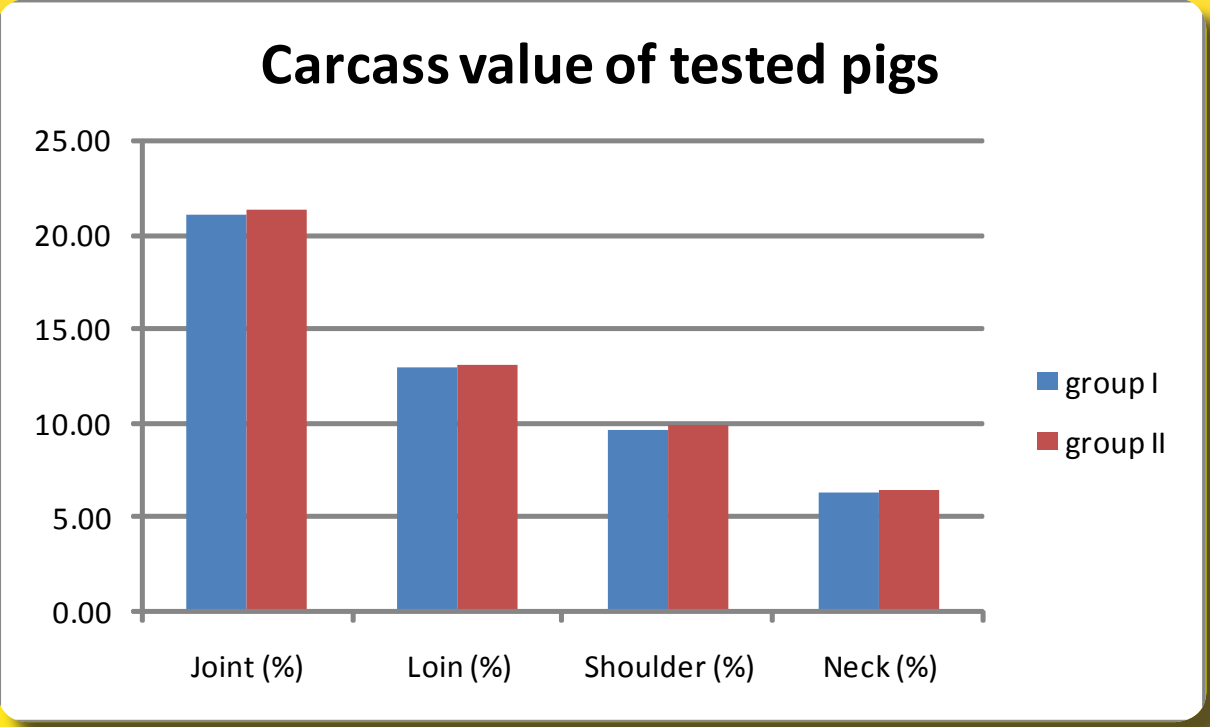
Overall selected indicators of feed efficiency in test

|     |        | group I<br>(n=36) | group II<br>(n=35) |
|-----|--------|-------------------|--------------------|
| ADG | g/day  | 917               | 920                |
| DFI | kg/day | 2.66              | 2.65               |
| FCR | kg     | 2.43              | 2.43               |



Overall selected indicators of carcass value

| Item                | group I |      | group II |      |
|---------------------|---------|------|----------|------|
|                     | mean    | sd   | mean     | sd   |
| Carcas weight (kg)  | 86.89   | 3.60 | 87.58    | 3.98 |
| Main meat parts (%) | 50.07   | 2.89 | 50.81    | 2.17 |
| Loin area (mm²)     | 4697    | 746  | 4470     | 553  |
| Ham (%)             | 21.03   | 1.38 | 21.30    | 1.35 |
| Joint (%)           | 12.91   | 1.06 | 13.03    | 0.92 |
| Shoulder (%)        | 9.72    | 0.80 | 9.98     | 0.55 |
| Neck (%)            | 6.41    | 0.56 | 6.49     | 0.52 |
| Lean meat share (%) | 54.97   | 3.50 | 56.67    | 4.54 |



The economics evaluation with respect to feeding type

| Item                               | group I | group II |
|------------------------------------|---------|----------|
| Number of pigs in group            | 36      | 35       |
| Costs (CZK)                        |         |          |
| Costs per one weaner               | 1752    | 1728     |
| Feed costs per one fattened pig    | 993     | 1068     |
| Total costs per one fattened pig   | 2745    | 2796     |
| Cost per one feed-day in test      | 32.68   | 33.28    |
| Cost per one kg of live gain       | 35.63   | 36.15    |
| Sales (CZK)                        |         |          |
| Sales per one pig                  | 3680    | 3748     |
| Selling price per 1 kg of carcass  | 42.20   | 42.98    |
| Profit per one pig                 | 934     | 951      |
| Rate of return - profitability (%) | 34.04   | 34.03    |