Seminar 10

Production function

Exercises

1. Non-linear one-factor production function was estimated based on the data table (see extra file with data set) in the following general form:

 $y = a + bx + cx^2 + dx^3$

This function was employed to describe the relationship between production increase and feed consumption (y = production increase in kg, x = feed consumption in kg/day).



Production function

- 2. Calculate production increase in kg/day in case of the feed consumption 2 kg/day and 2,5 kg/day.
- 3. Write the function of the average production (AP) and explain its meaning.

- 4. Write the function of the marginal production (MP) and explain its meaning.
- 5. Draw AP and MP function into the graph in connection with the production function.



- 6. Calculate feed consumption for:
 - a) maximal marginal production and explain this situation;
 - b) marginal production equal to zero and explain its economic meaning.

7. Propose two ways to calculate feed consumption for maximal average production.

8. Define rational and irrational stages of production function.

9. Calculate point and arc production elasticity for the feed consumption change specified in exercise 2 and explain the difference between these two results.

10. Calculate production elasticity (Ep) for the levels of feed consumption specified in exercise 2 and explain the difference compared to the results calculated in exercise 9.

11. Calculate the feed consumption to reach the maximal profit if the price of the pork meet is 68 CZK/ kg and the price of feed 8900 CZK/t.

12. Calculate the feed costs per day and income in this point.