RATE OF RETURN ON INVESTMENT IN A DAIRY CATTLE BREEDING FARM IN BULGARIA

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Abstract

The paper analyses the rate of return on investment in a dairy cattle breeding farm in Bulgaria. To achieve the aim, it was investigated a dairy cattle breeding farm in Bulgaria first category with average number of 83 cows in the main herd. Based on information collected from the farm in 2012 and on own calculations it was defined the different types of investments necessary to create a farm. It was calculated also the rate of return of cash inflows, rate of return of cash outflows and investments per cow. It was found that the analyzed farm has implemented 12.5% rate of return on investment in 2012. Investments per cow are 4422 euros. The largest share of investments has the investments in productive animals (43.6%). 64.6% of the revenues are from the sale of milk. The largest share of the cash outflows have the purchase of feed and forage production - 58.3%. Subsidies play an important role for profitable operation of the analyzed farm.

Key words: cash flows, cattle breeding, investments per cow, rate of return on investment

INTRODUCTION

Value of the different cash flows, generated from the main activity, rate of return on investments [4], [7], rate of return of expenses and revenues [4], [8] and investments per cow [5] in dairy cattle breeding sector are extremely important for the motivation of farmers and employees, for the cost of the production and product quality. Each enterprise is interested in optimizing expenses and revenues to achieve positive financial result. Various researches in the sphere of economic effectiveness in dairy cattle breeding were published: some authors [2] examined the competitiveness of dairy cattle farms in terms of their size in Bulgaria; the structure and return on investment in dairy cattle breeding in Bulgaria was investigated [3]; economic models in dairy farms were examined [1].

MATERIALS AND METHODS

The aim of the study is to determine the rate of return on investment in a dairy cattle breeding farm in Bulgaria. To achieve the aim, it was investigated a dairy cattle breeding farm in Bulgaria first category with average number of 83 cows in the main herd.

Based on information collected from the farm in 2012 and on own calculations it was defined the different types of investments necessary to create a farm. Cash flows exclude VAT. Cash inflows and outflows were estimated. The net cash flow was calculated as a difference between cash inflow and cash outflow occurred in 2012. For the purposes of the analyses ROI (%) was calculated as a ratio between net cash flows and investments. It was calculated also the rate of return of cash inflows (ROCi%) as a ratio between net cash flows and cash inflows; rate of return of cash outflows (ROCo %) as a ratio between net cash flows and cash outflows and investments per cow (Ic%) as a ratio between investments and number of cows in the main herd. The reason why in the calculations of ROCi (%), ROI (%) and ROCo (%) are not used the net profit and expenses is because in agriculture we often have unfinished production and production which is not sold at the end of the year, so expenses, incurred during the year are not equal to the cash outflows and the net cash
flow is not equal to the net profit. Some of the cash outflows incurred this year will be pointed as expenses during the next year or years when the farmer sell the production or put it in the next production cycle (feed the animals with forage – own production, which was produced previous year). Revenues are equal to the cash inflows.

RESULTS AND DISCUSSIONS

Table 1 represents investments, cash inflows, cash outflows, ROI (%), ROCo (%), ROCi (%) and Ic (%).

Cash inflows include:
- revenues from the sale of male calves – 35 calves a few weeks after birth;
- revenues from the sale of cull cows and heifers (12 cows and heifers per year);
- revenues from the sale of milk – 280 tons per year;
- revenues from subsidies;
In the analyzed farm 15% of cow are culled annually, average service period is 60 days, dry period - 70 days. The cows are from the Black and White breed and are culled mainly due to aging; artificial insemination is practiced; selection is on a proper level. Approximately 1-2% of cows in the herd have clinical mastitis and endometritis. The average milk yield is 6,100 liters and the farm sells on the market about 280 tons cow milk per year. Animals are kept free - boxing. In the summer they graze on the pastures and a small amount of compound feed was given to them. The cows are milked twice a day with automated milking line. Hygiene in the farm is excellent. Ventilation is a natural with chimneys.

ROI (%) has value of 12.5%, it means that every 100 euros of investments account for 12.5 euros net cash flow.
ROCo (%) shows that on every 100 euros of cash outflows account for 54.8 euros net cash flow.
ROCi (%) represents that on every 100 euros of cash inflows account for 35.4 euros net cash flow.
Investments per cow are 4422 euros.

Figure 1 shows that the largest share of investments has the investments in productive animals (43.6%) followed by the investments in tractors (19.1%).
Investments in land and buildings have values of 8.2%. The share of investments in milk line is 3.5%; investments in bobcat are 6.8%. Total percents of investments in equipment (tractor, bobcat, forage harvester, manure spreader trailer, forage grinder, trailers, hay rake) occupy 32.7%.

Figure 2 represents that 64.6% of the revenues are from the sale of milk, followed by the revenues from subsidies- 30.8%. The smallest share of revenues has the revenues from the sale of cull cows and heifers (3.1%) and male calves (1.5%).

Consequently, subsidies are crucial to good and profitable operation of the farm. If the farm doesn’t receive subsidies, ceteris
paribus, then net cash flow would have the value of 6k euros; ROI (%) - 1.6%; ROCo (%) - 7.1%; ROCi (%) - 6.7%; ROI (%) would be under the interest rate on deposits in Bulgaria (around 5% [6]) and therefore the farmer would not have been interested in investing the money in creating a dairy farm. The analysis of the data in Figure 3 shows that the largest share of the cash outflows has the purchase of feed and forage production - 58.3%, followed by labor costs (17.8%), other materials and services (6%) and rent of pastures (4.7%). The lowest share of cash outflows has veterinary services (1.2%), accounting services (1.2%) and medication (1.2%). Cost of fuel, electricity and disinfectants are respectively 3.6%, 3.6% and 2.4%.

CONCLUSIONS:
- In 2012 the analyzed farm has implemented 12.5% rate of return on investments;
- On every 100 euros of cash outflows account for 54.8 euros net cash flow.
- On every 100 euros of cash inflows account for 35.4 euros net cash flow.
- Investments per cow are 4,422 euros.
- The largest share of investments has the investments in productive animals (43.6%) followed by the investments in tractors (19.1%);
- 64.6% of the revenues are from the sale of milk, followed by the revenues from subsidies - 30.8%;
- The largest share of the cash outflows have the purchase of feed and forage production - 58.3%, followed by labor costs (17.8%);
- Subsidies play an important role for profitable operation of the analyzed farm;

REFERENCES