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Economic efficiency of a carrot crop in irrigation-non-irrigation conditions

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Abstract

The experiments were performed in Aiton, Cluj County. This study aims to analyze the economic efficiency in case of carrot culture experiments performed in different technologies used for culture: three cultivars, two irrigation regimes and three fertilization methods. In study were used carrot varieties Royal Chantennay, Atomic Red and Purple Haze F1. Indicators of economic efficiency (unit cost of production, unit gross profit, profit rate, labor productivity, production costs on equivalent product) were calculated for each variant separately. It was found that the highest profit obtained from the cultivation of carrots was achieved by cultivating the variety Purple Haze F1, the variant irrigated and fertilized with zeolites and this is not due to production but to the higher price for this variety. At the same time, it is found that in all irrigated variants, the profit obtained is significantly higher than the profit obtained in non-irrigation conditions.^[1,3]

Material and Methods

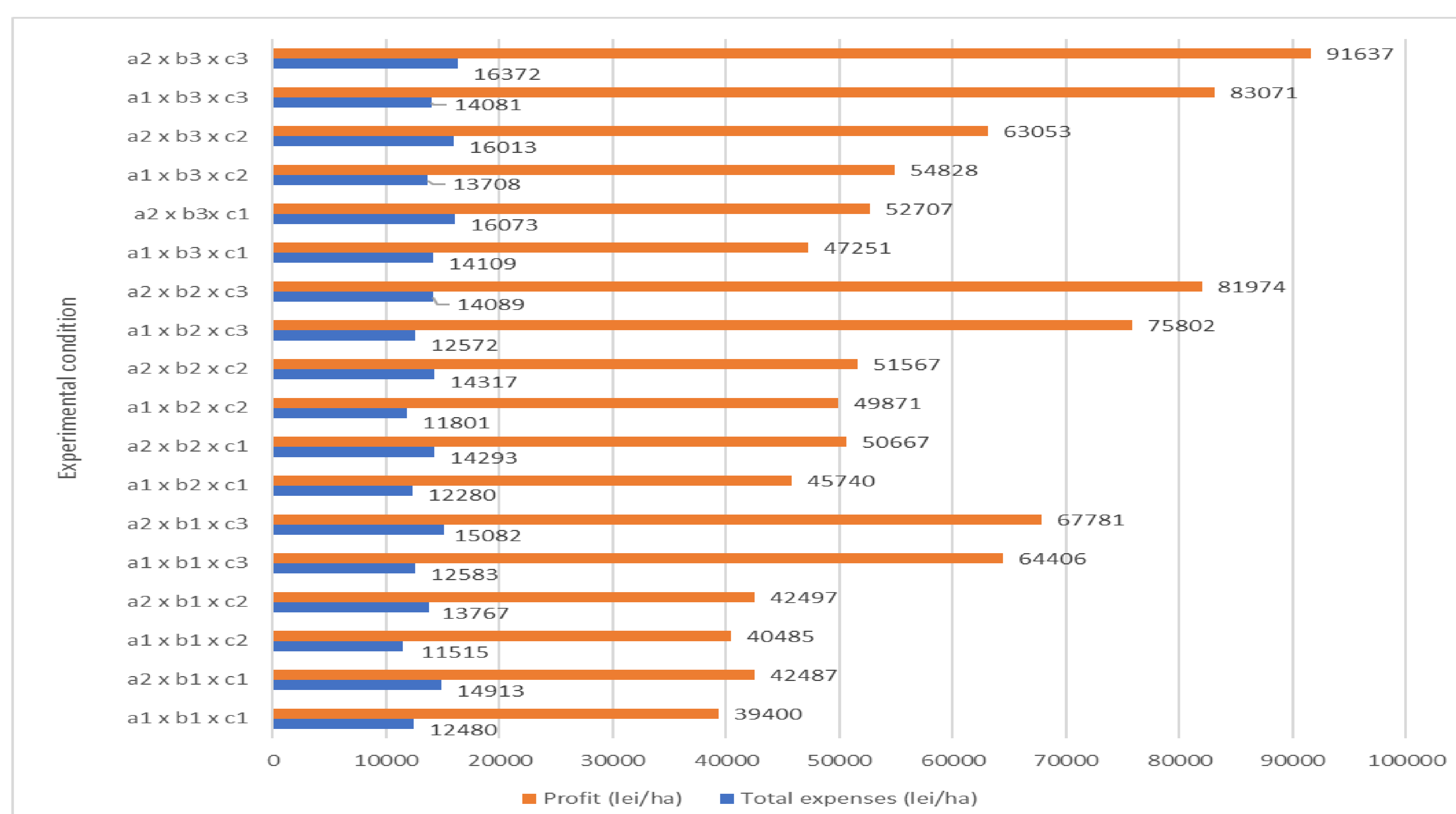
The experimental factors studied were: irrigation regime - with two graduations (non-irrigated (a_1) / irrigated (a_2)) fertilization regime, with three graduations (basic fertilization (b_1) / chemical fertilization (b_2) / zeolite fertilization (b_3)) and the biological material, with three graduations (Royal Chantennay (c_1), Atomic Red (c_2) and Purple Haze F₁ (c_3)). The experiments contained a number of 3 repetitions ($n = 3$), the number of variants analyzed in the experiment is 9 ($v = 3 \times 3$), the total number of experimental plots was 27 (9×3). The comparative cultures were ordered in a multifactorial system, completely randomized, with subdivided plots.

The analysis of the economic efficiency of the carrot culture was carried out by establishing the production costs and the incomes realized from the sale of the obtained production, for each variant studied separately. In order to establish the production costs, it was taken into account that there are general costs (identical for each variant) and specific costs, which differ from one variant to another, depending on the variety studied, the fertilization method applied, the irrigation regime and the production obtained.

Irrigation of carrot culture was done using local water source, water costs being calculated according to the number of waterings (6 waterings, 2 hours each) the cost of seeds depending on the price / kg of each variety (purchases from SC XTREME ANG MARKETING SRL, Bucharest), and for fertilization depending on the cost of fertilizers (acquisitions from SC AZOMURES SA and ENVIRO NATURALS AGRO SRL) and the cost of works.

Results

Chart 1. Total crops (lei / ha) and profit (lei / ha) for carrot culture under the conditions of Aiton area, Cluj



Conclusions

- In all irrigated variants, the profit obtained is significantly higher than the profit obtained in non-irrigation conditions.
- In the non-irrigated variants, the highest profit is obtained by capitalizing the Purple Haze F₁ variety and fertilizing with zeolites.
- From a strictly economic point of view, it is found that the highest profit obtained from cultivating carrots in Aiton, Cluj county is achieved by cultivating the variety Purple Haze F₁, irrigated and fertilizing with zeolites and this is not due to production but higher price for this variety.

References

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