

## Comparative Study on Productivity, Chemical Composition and Yield Quality of Some Alternative Crops in Romanian Organic Farming

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**Abstract :** Crops diversity and maintaining and enhancing the fertility of agricultural lands are basic principles of organic farming. With a wider range of crops in agroecosystem can improve the ability to control weeds, pests and diseases, and the performance of crops rotation and food safety. In this sense, the main objective of the research was to study the productivity and chemical composition of some alternative crops and their adaptability to soil and climatic conditions of the agricultural area in Southern Romania and to cultivation in the organic farming system. The alternative crops were: lentil (7 genotypes); five species of grain legumes (5 genotypes); four species of oil crops (5 genotypes). The seed production was, on average: 1343 kg/ha of lentil; 2500 kg/ha of field beans; 2400 kg/ha of chick peas and blackeyed peas; more than 2000 kg/ha of atzuki beans, over 1250 kg/ha of fenugreek; 2200 kg/ha of safflower; 570 kg/ha of oil pumpkin; 2150 kg/ha of oil flax; 1518 kg/ha of camelina. Regarding chemical composition, lentil seeds contained: 22.18% proteins, 3.03% lipids, 33.29% glucides, 4.00% minerals, and 259.97 kcal energy values. For field beans: 21.50% proteins, 4.40% lipids, 63.90% glucides, 5.85% minerals, 395.36 kcal energetic value. For chick peas: 21.23% proteins, 4.55% lipids, 53.00% glucides, 3.67% minerals, 348.22 kcal energetic value. For blackeyed peas: 23.30% proteins, 2.10% lipids, 68.10% glucides, 3.93% minerals, 350.14 kcal energetic value. For adzuki beans: 21.90% proteins, 2.60% lipids, 69.30% glucides, 4.10% minerals, 402.48 kcal energetic value. For fenugreek: 21.30% proteins, 4.65% lipids, 63.83% glucides, 5.69% minerals, 396.54 kcal energetic value. For safflower: 12.60% proteins, 28.37% lipids, 46.41% glucides, 3.60% minerals, 505.78 kcal energetic value. For camelina: 20.29% proteins, 31.68% lipids, 36.28% glucides, 4.29% minerals, 526.63 kcal energetic value. For oil pumpkin: 29.50% proteins, 36.92% lipids, 18.50% glucides, 5.41% minerals, 540.15 kcal energetic value. For oil flax: 22.56% proteins, 34.10% lipids, 27.73% glucides, 5.25% minerals, 558.45 kcal energetic value.

**Keywords :** adaptability, alternative crops, chemical composition, organic farming productivity

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