



Preliminary researches regarding the optimization of doses of chemical fertilizer applied in potato seeds culture

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Abstract: For potato the quality of planted material is an essential factor that determines the tuber quality and the production level obtained. The biological quality depreciation of potato is the consequence of two major causes: infection with viruses and the decrease of growth vigor due to physiological age. Development of cultivation technologies for seed potato by using some fertilization reports specific to species and climate conditions are timely and represent a permanent research subject. Potato species react differently to fertilization level and climate and soil conditions of potato plants and implicitly to the level of production.

INTRODUCTION

In this period when chemical fertilizers are one of the main resources for production increase and control of technological quality of agricultural products, when from the technical point of view, they may be achieved in many potential ecological situations for most of cultivated plants, the fertilization system becomes one of the main links of the technology for plant growing. Potato being an intensive culture responding in the most ecological conditions by high growth of fertilization, according to concrete conditions of climate, soil and purpose of culture use, in our case being the potato for seed.

MATERIAL AND METHOD

Experimental factors and their graduations

A Factor – soil B

a_1 – *Gared*

a_2 – *Albioana*

a_3 – *Redsec*

B. Factor – culture year

b_1 – 2019

b_2 – 2020

b_3 – 2021

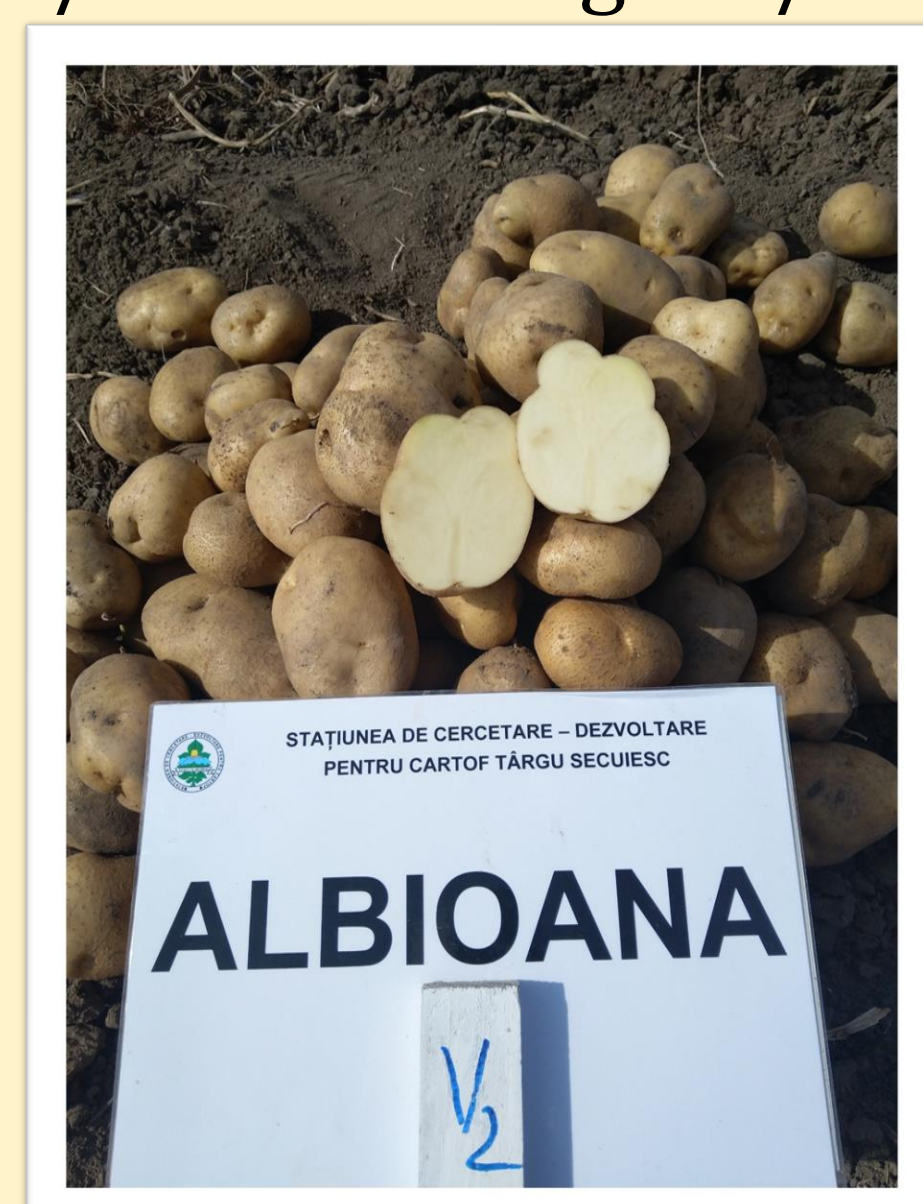
C Factor – fertilization level at planting

c_1 – N 120 kg s.a./ha : P 90 kg s.a./ha : K 180 kg s.a./ha

c_2 – N 150 kg s.a./ha : P 120 kg s.a./ha : K 180 kg s.a./ha

c_3 – N 180 kg s.a./ha : P 150 kg s.a./ha : K 180 kg s.a./ha

c_4 – N 210 kg s.a./ha : P 180 kg s.a./ha : K 180 kg s.a./ha



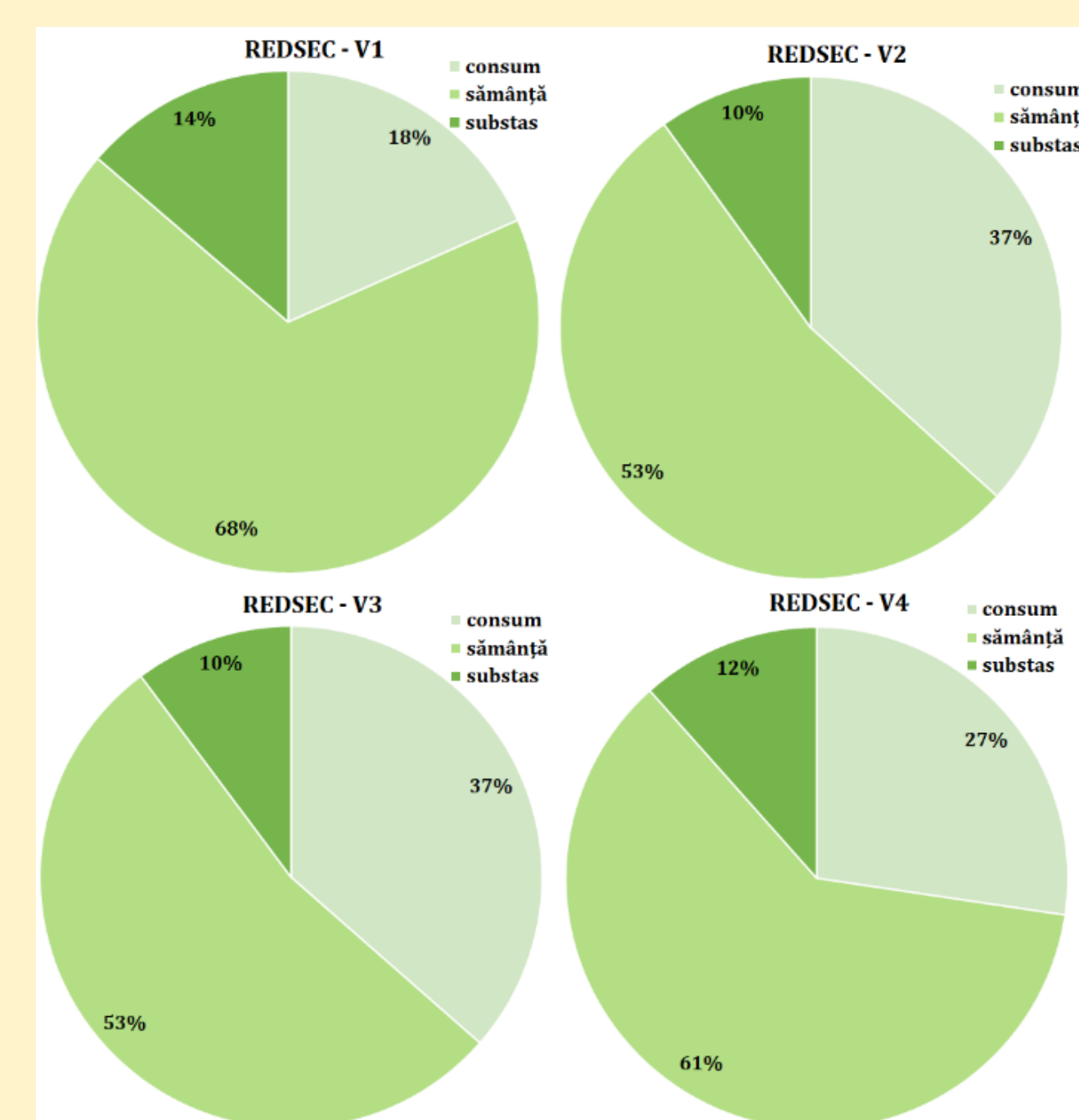
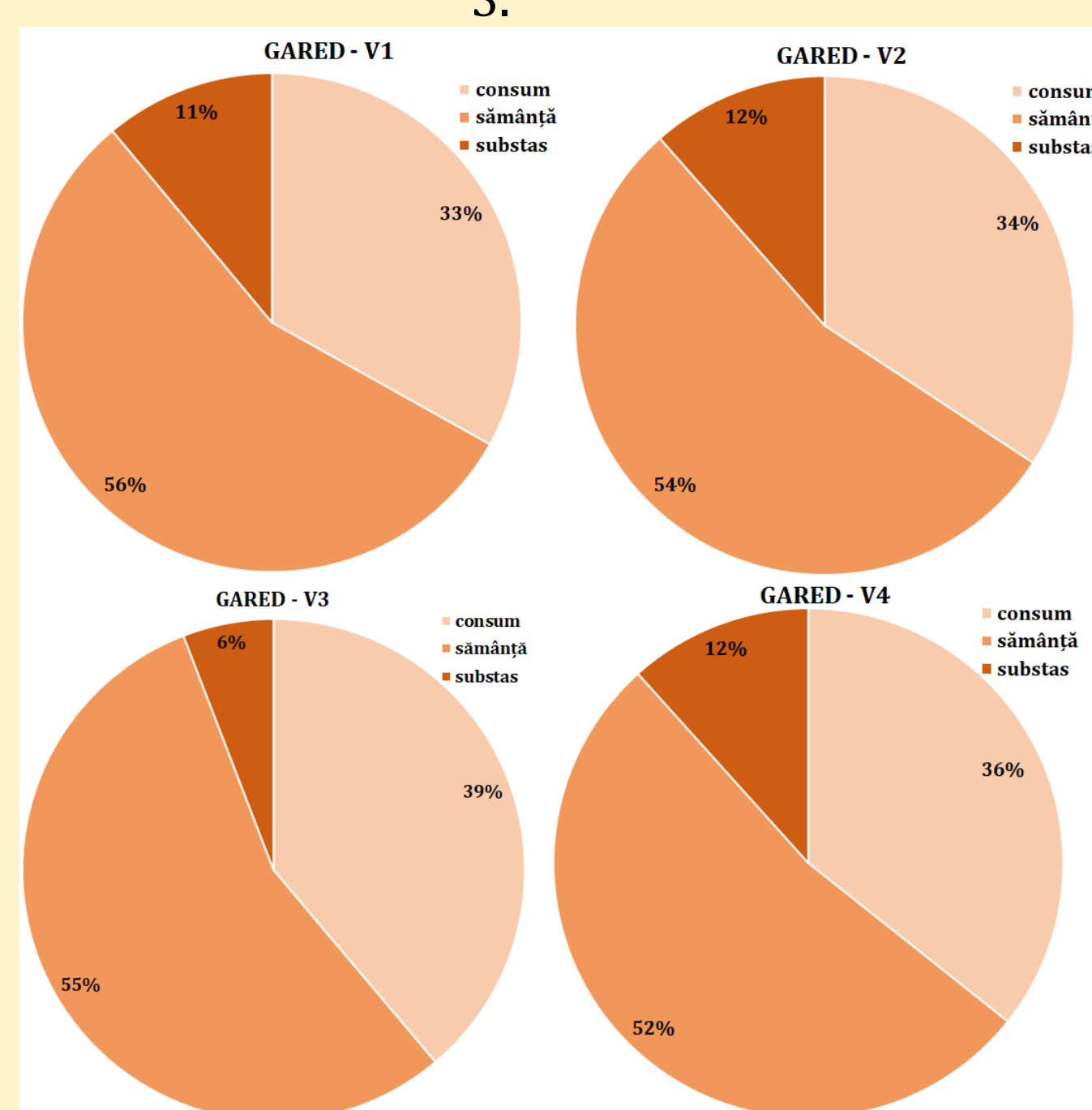
CONCLUSIONS AND RECOMMENDATIONS

• Through the geographical position, space isolation and altitude (578 m) and the cool and wet climate conditions, the micro-area Targu Secuiesc fulfills all the necessary conditions for a very favorable area for growing and reproduction of potato for seeds;

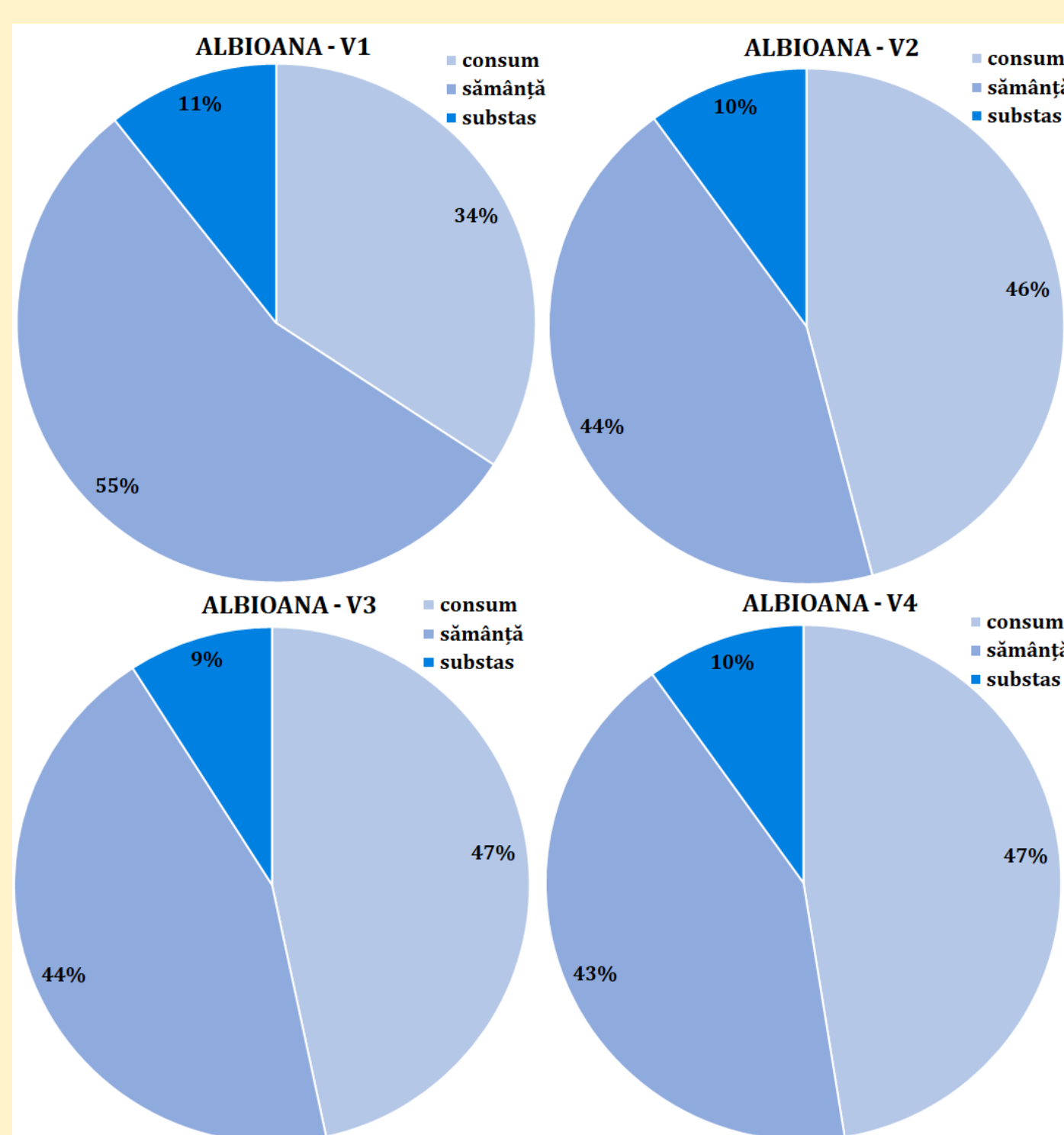
• *Redsec* variety reacted the best of all to the increase of fertilizer doses with an increment of 10.29 t/ha for V_4 in comparison to V_1 followed by *Gared* variety with an increment of 7.38 t/ha.

RESULTS AND DISCUSSIONS

Regarding the production structure at *Gared* variety in 2019, the highest quantity of tubers > 55 mm (20.94 t / ha) and the lowest quantity of tubers < 35 mm (3.15 t / ha) was registered within the variant V_3 .



Regarding the production structure for *Redsec* variety in 2019, the highest quantity of tubers > 55 mm (24,14 t / ha) was registered for variants V_3 (24.14 t / ha) and V_2 (21.67 t / ha). The lowest production of tubers of the caliber 35 – 55 mm was registered at variant 3 with 11.42 t / ha, the highest production being registered at variant 4 with 14.30 t / ha.



Regarding the influence of fertilization variant on the production for *Albioana* variety it is noticed that the highest total average production was registered for variant V_4 with 56.62 t/ha, difference of $d = +6.86$ t/ha in comparison to variant 1 being distinctively significant and statistically insured, followed by the productions from variant V_3 cu 55.00 t/ha, the difference from the variant 1 being distinctively significant ($d = +5.24$ t/ha)