

PERFORMANCE OF CABBAGE HYBRIDS UNDER THE PEDOCLIMATIC CONDITIONS OF ÎNSURĂȚEI, BRĂILA COUNTY

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ABSTRACT:

This study compares the performance and adaptability of three white cabbage cultivars - Buzău White Cabbage, Victoria F1 and Gloria F1 - grown under the pedoclimatic conditions of Însurăței, Brăila County. Seedlings and mature plants were evaluated for morphological and productive traits. Victoria F1 showed the fastest early growth, while Gloria F1 recorded the best maturity traits and the highest estimated yield (33.9 t/ha), indicating the best adaptability to local conditions. The results emphasize the importance of cultivar choice, irrigation and crop management in autumn cabbage production.

INTRODUCTION:

- White cabbage is an important crop for food security, nutrition and farm profitability.
- Yield depends on cultivar choice, soil fertility, irrigation, fertilization and phytosanitary protection.
- The Însurăței area in Brăila County belongs to the Bărăgan Plain, where fertile soils favor cabbage cultivation, but hot summers and water deficit make irrigation essential.
- Objective: to evaluate the behavior and productive potential of three cabbage cultivars under local pedoclimatic conditions.

MATERIAL AND METHOD:

- Location: Însurăței, Brăila County, Romania.
- Experimental area: 1000 m²; soil type: cambic chernozem, slightly alkaline, pH 8.0.
- Experimental design: 3 variants × 10 rows per variant; total 30 rows.
- Seedlings were manually transplanted at 40 days, at 70 cm between rows and 30 – 35 cm between plants.
- Irrigation was applied every 10 – 12 days, according to the vegetation stage.
- Water rates ranged from 200 – 250 m³/ha in early growth to 300–400 m³/ha during intensive growth and head formation.
- Fertilization included Blackjak, Terra-Sorb Radicular, Terra-Sorb Foliar, Atonik and Calcig Ca-Mg.
- Maintenance works included weed control, soil loosening, irrigation and phytosanitary treatments.
- Determinations: seedling height, stem diameter, number of leaves, plant height at maturity, head circumference, head weight and estimated yield.

Variant	Cultivar	Type	Origin
V1	Buzău White Cabbage	traditional variety	Agrosel
V2	Victoria F1	hybrid	Hektar
V3	Gloria F1	hybrid	Syngenta

Experimental organization:

Location	Însurăței, Brăila County
Experimental area	1000 m ²
Experimental variants	3 (V1, V2, V3)
Rows / variant	10 (30 rows total)
Transplanting and spacing	40 days; 70 cm × 30 – 35 cm
Irrigation interval	10 – 12 days

Main determinations:

Stage	Observed indicators	Method
Seedling stage	Plant height; stem diameter; number of leaves	Ruler; caliper; direct counting
Maturity	Plant height; head circumference; head weight	Ruler; measuring tape; weighing
Harvesting	Estimated yield	kg/ha calculation

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RESULTS AND DISCUSSIONS:

1. Growth rate of cabbage seedlings during the first 40 days

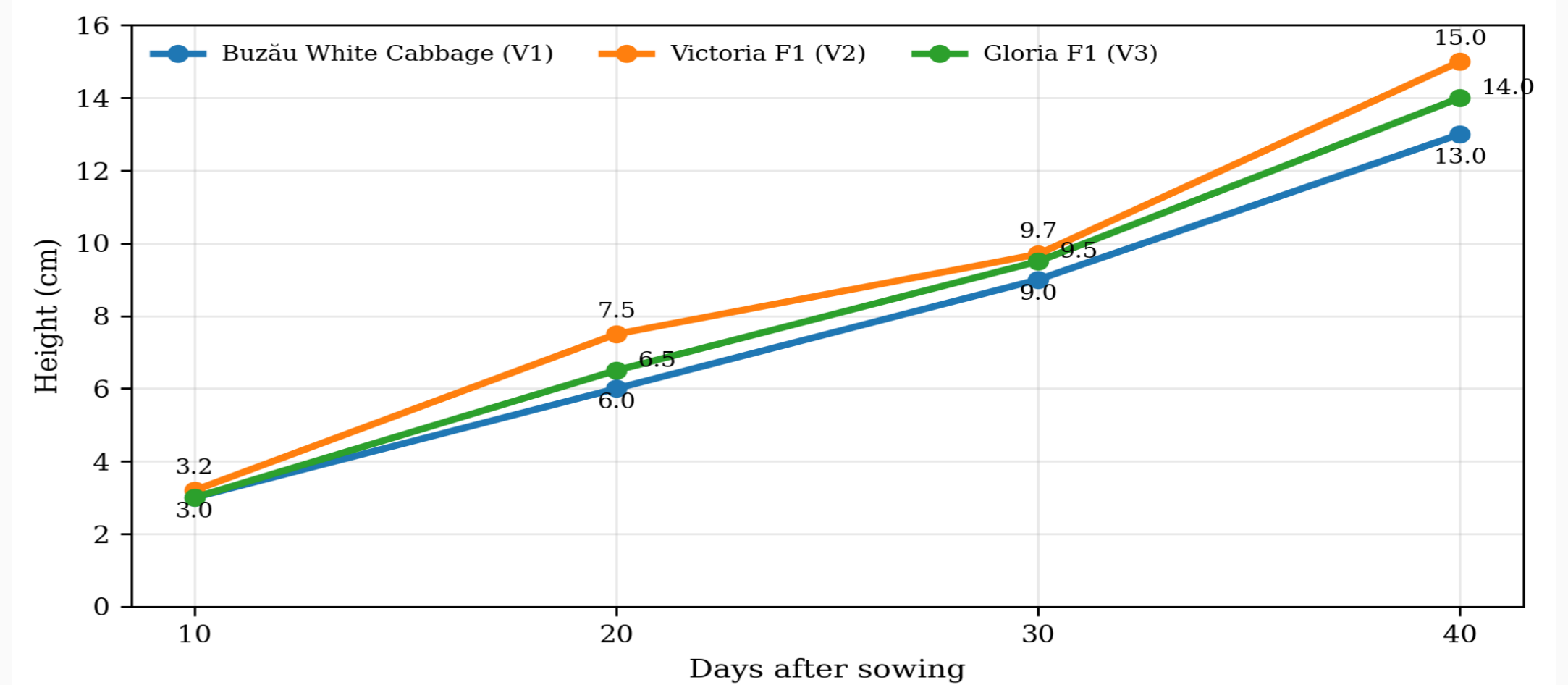


Figure 1. Victoria F1 had the fastest growth at the seedling stage

2. Plant height at maturity

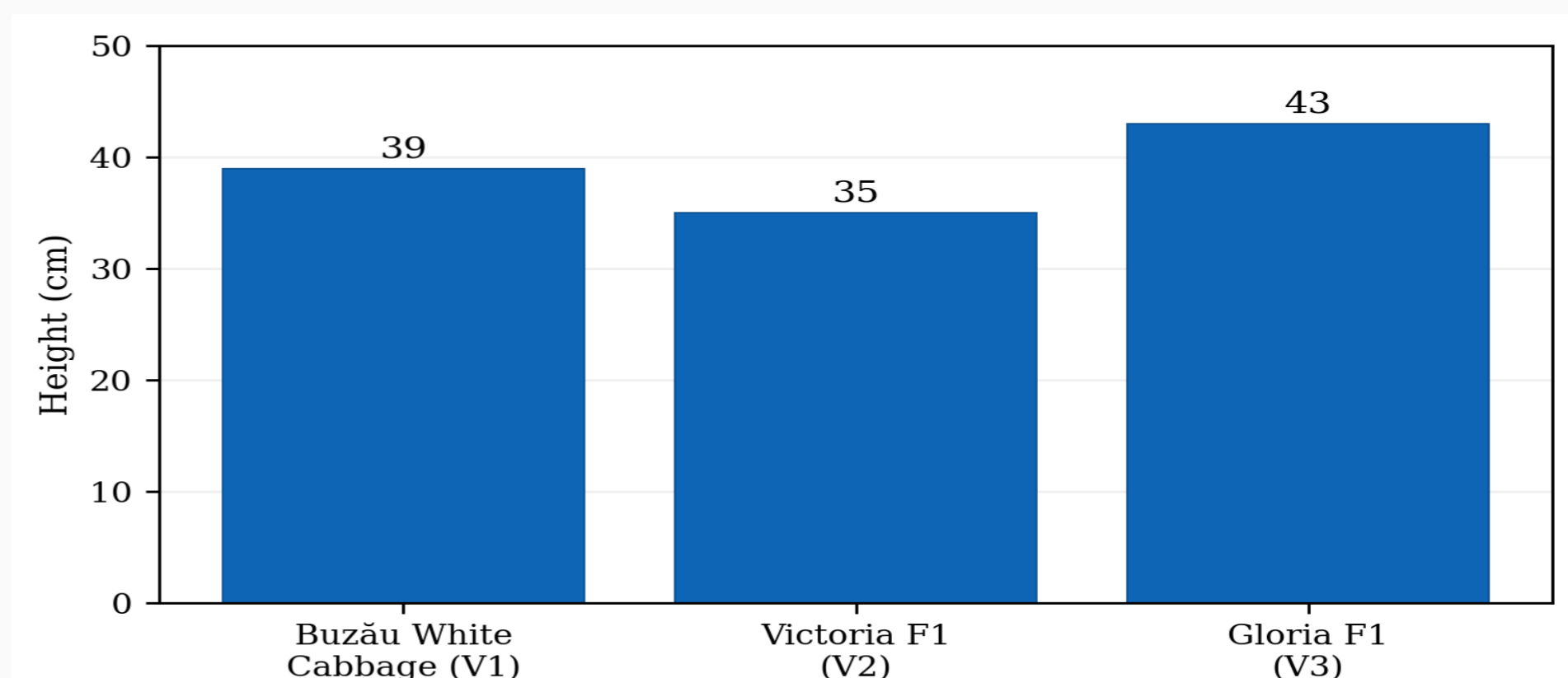


Figure 2. At maturity, Gloria F1 recorded the highest plant height

3. Estimated yield per hectare

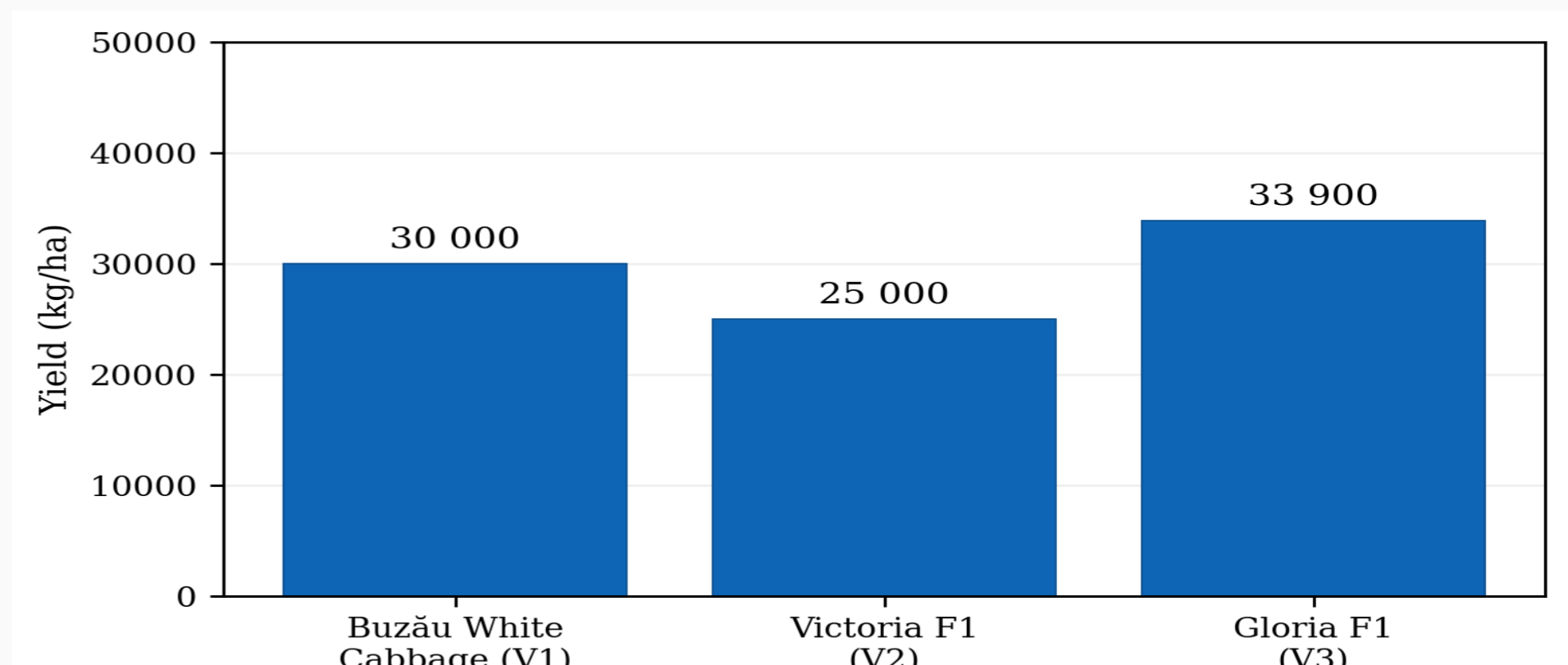


Figure 3. Gloria F1 achieved the highest yield, showing the best adaptability to local conditions.

- Average head circumference at harvest:
V1 = 64.6 cm; V2 = 59.2 cm; V3 = 69.2 cm
- Average head weight at harvest:
V1 = 3.11 kg; V2 = 2.71 kg; V3 = 3.30 kg
- Note: Initial vigor at the seedling stage did not guarantee final productivity.

CONCLUSIONS:

- Clear differences were observed among the three cabbage cultivars under the pedoclimatic conditions of Însurăței, Brăila County.
- Victoria F1 showed the fastest growth at the seedling stage, reaching the highest early plant height.
- The initial vigor of seedlings did not guarantee the highest final productivity.
- Gloria F1 recorded the best performance at maturity, with the highest plant height, head circumference and average head weight.
- The highest estimated yield was obtained by Gloria F1, with 33,900 kg/ha, indicating the best adaptability to local conditions.
- Buzău White Cabbage showed stable intermediate results and good local adaptability.
- The results confirm that cultivar choice, irrigation, fertilization and crop maintenance are essential for maximizing autumn cabbage yield.