Late Spring Culture of Headed Chinese Cabbage (*Brassica campestris* var. *pekinensis*)

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ABSTRACT

The main purpose of the present research was the study of the behaviour of some headed Chinese cabbage varieties in the Transylvanian Tableland late spring specific conditions. The present research took place in the experimental field which belongs to the Vegetable Growing Department from the University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, in the spring of 2011. The results showed that Chinese cabbage can be cultivated with success in Transylvanian Tableland specific conditions even in late autumn, even if previous studies have shown that very good results can be obtained in spring and summer, but it is necessary to choose the right variety or hybrid, because of the high bolting tendency of this vegetable.

Keywords: *Chinese cabbage, leafy vegetable, open field culture.*

INTRODUCTION

Heading Chinese cabbage (*Brassica campestris* var. *pekinensis*) is a cold season, annual vegetable. It grows best under temperatures of 15–20°C degrees (Kalband Chang, 2005). This vegetable is among the fastest growing of all leafy vegetables, in favourable conditions heads being cut ten weeks after sowing (Larkcom, 2003). Earlier studies of the authors demonstrated that Chinese cabbage may be grown with success in Transylvanian Tableland, but more studies are necessary to obtain a better cultivation technology (Laczi *et al.*, 2012; Laczi *et al.*, 2013)

AIMS AND OBJECTIVES

The present research had as main purpose the study of the behaviour of some headed Chinese cabbage varieties in the Transylvanian Tableland late spring specific conditions. During the experiment plants growth and development

was studied, while after harvest plants quality and quantity was determined.

MATERIALS AND METHODS

The present research took place in the experimental field belonging to the Vegetable Growing Department from the University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, in the spring of 2011. To achieve the objectives of this experiment a collection of 5 varieties and hybrids (Michihli, Kingdom 80, Granat (control variant), Nepa F₁, Vitimo F₁) was organized. Each variety and hybrid was placed into three repetitions, the size of the experimental plots being 3 m². The seeding was made in 22nd of March; the planting was performed in the second part of April in open field. During the vegetation period, there were not necessary any treatments or fertilizations. Harvest was realized beginning from the end of May at Granat variety, Nepa F₁,

Tab. 1. – The parameters of Chinese cabbage growth and development (a – at planting, b – one month after planting, c – at harvest)

Variaty / Hybrid	Height(cm)			Diameter (cm)			Number of leaves			Bolting ratio (%)
	a	b	c	a	b	c	a	b	c	
Michihli	13,67	34,17	37,83	19,33	52,50	57,67	6,00	17,17	22,33	25
Kingdom 80	14,33	21,00	28,83	19,67	44,17	56,67	7,67	21,17	42,33	12.5
Granat	17,00	24,17	35,83	20,00	41,17	48,33	7,33	18,17	28,5	29.17
Nepa F ₁	11,33	28,50	37,5	19,00	45,17	54,67	7,67	15,33	32,67	12.5
Vitimo F ₁	13,67	18,83	31	18,33	42,67	51,17	7,67	18,67	49,17	0
Average	14,00	25,33	39,83	19,27	45,13	37,47	7,27	18,10	35	15.83

Table 2. The influence of cultivar on the yield of Chinese cabbage

Variant Variaty / Hybrid	Average yield (t/ha)	Relative yield (%)	Difference (t/ha)	Significance
Granat	33.33	100	0	Ct.
Kingdom 80	49.87	149.62	16.54	***
Michihli	29.87	89.62	-3.46	-
Nepa F1	46.67	140	13.34	**
Vitimo F1	87.47	262.44	54.14	***

LSD (p 5%)=7.11; LSD (p 1%)=10.35, LSD (p 0,1%)=15.52

Michihliand Kingdom 80hybrids, to the end of June at VitimoF₁hybrid. During growing season observations were made regarding plants growth and development, while at harvest measurements were focused on production quality and quantity.

RESULTS AND DISCUSSIONS

Highest seedlings (17 cm), with highest diameter (20 cm), were those which belonged to Granat variety, while the highest plant weight was registered at Nepa F₁hybrid (11.50 cm). One month after plantingand at harvest Michihli hybrid registered higher values from plants height (34.17 cm; 37.83 cm) and diameter (52.50 cm; 57.67 cm) point of view, while Kingdom 80 hybrid had the most leaves one month after planting (18.67) and VitimoF₁hybridat harvest (49.17) (tab. 1). Regarding the bolting ratio it was observed that only at VitimoF₁hybrid there were not bolted plants at harvest, the average bolting ratio having a value of 15.83%. The lowest yield (29.87 t/ha) was registered at Michihli hybrid, while the highest one (87.47 t/ha) at VitimoF₁ hybrid (tab. 1). Very significant positive differences were registered at Kingdom 80 and Vitimo F1 hybrids and a different significant positive one at Nepa F1 hybrid compared to Granat, the control variety. No statistically assured difference was between control variant and Michihli hybrid (tab. 2).

CONCLUSIONS

To grow Chinese cabbage in late spring in Transylvanian Tableland conditions is necessary to choose the right variety or hybrid, because of the high bolting tendency. Taking into consideration the results of this study, VitimoF₁hybrid is recommended for cultivation in this area, so that a high yield of good quality could be obtain.

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