Orchard performance of new plum cultivars on two rootstocks in a trial at Holovousy in 1998–2003

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ABSTRACT: Thirteen plum cultivars on two rootstocks (Myrobalan and Wangenheim Prune seedlings) were studied in a trial established in the spring of 1998 at spacings 5 × 1.5 m. Trees were trained as spindles. Čačanska najbolja was the most vigorous in this trial, followed by Čačanska rana, Herman and Domestic Prune. The weakest tree vigour was observed on Wegierka Dabrowicka, followed by Čačanska rodna and Empress. Čačanska najbolja, Wegierka Dabrowicka and Valor had the highest yield per tree, whereas Čačanska rana had the lowest yields. Bluefre was the most precocious cultivar. Wegierka Dabrowicka had the highest yield efficiency followed by Empress and Valor. On the contrary, Čačanska rana, Early Blue and Domestic Prune belonged to the least productive cultivars. Trees on Wangenheim Prune seedlings grew about one third weaker than those on Myrobalan seedlings but their yield efficiency was about 31% higher although their yields per tree were about 12% lower. The largest fruits were recorded with Bluefre. Čačanska rana, Empress, Valor and Oneida were also ranked among large fruit varieties with minimum differences between them. The mean harvest season of evaluated cultivars started by Herman on the 12th July and ended by Oneida on the 9th September. Valor and Empress had the best performance of tree growth, bearing habit and fruit size, which indicates their good suitability for the modern types of plum orchard. Bluefre may also be of some interest for growers because of the best precocity and large fruit size, and Oneida for prolonging the whole harvest season.

Keywords: plum; cultivars; tree vigour; yields, rootstocks; yield efficiency

After a long-time recession of plum and prune production in the Czech Republic that was mainly caused by a disastrous spread of *Plum pox virus*, growers started to apply several measures to successfully renovate orchards of the crop (BLAŽEK, KAREŠOVÁ 2002). One of them is the search for new productive cultivars and rootstocks suitable for domestic climatic conditions bearing high-quality fruits for a longer season (KOSINA 2001; PAPRŠTEIN et al. 2001; PAPRŠTEIN, BLAŽEK 2003). If plum production under new circumstances is to remain economically viable, more intensive planting systems are required. To obtain growth control, precocity, high productivity and superior fruit quality appropriate combinations of cultivar and rootstock are needed (GRZYB et al. 1998; MIKA et al. 1999; ROZPARA, GRZYB 1998).

In the last decades a large number of new plum cultivars have appeared. These new cultivars in combination with a suitable system of training could be the basis for modern intensive orchards. A cultivar used at different sites must be adapted to local environmental conditions that are an important factor of successful growing. Therefore cultivar testing plays an important role in present plum research (KEMP et al. 1994; OGAŠANOVIČ et al. 1994; HODUN et al. 1998, 1999; MICHELS, KIRCHMANN 2002; STEHR 2003).

The present paper reports on the first results from trial orchard with new plum cultivars that was established at Holovousy, the Czech Republic.

MATERIAL AND METHODS

An experimental orchard was established in the spring of 1998 at Holovousy. Thirteen cultivars (Bluefre, Čačanska lepotica, Čačanska najbolja, Čačanska rana, Čačanska rodna, Domestic Prune, Early Blue, Empress, Herman, Oneida, Sanctus Hubertus, Valor and Wegierka Dabrowicka) on two rootstocks (Myrobalan and Wangenheim Prune seedlings) were planted in three blocks (replications) at spacings 5 × 1.5 m using one-year-old nursery trees (mostly whips) obtained after summer budding. For every replication of cultivar and rootstock 3 trees were planted. Climatic conditions of Holovousy are characterised by the average annual temperature of 8.1°C and the average annual rainfall of 650 mm. The soil was medium loam sandy with fairly a deep cultivated layer on gravely substrate. The orchard was located at the altitude of 280 m a.s.l. and it was situated on a very gentle slope facing north.

Experimental trees were trained as spindles using strong wooden stakes as supports. No irrigation was applied in the orchard. Clean strips were kept under trees by contact herbicides whereas the frequently cut sod was kept in alleys between tree rows. Fertilisers were applied according to soil analyses. Spraying treatments against pests and diseases were carried out according to the recommendations for commercial orchards.

The following records were taken annually: trunk girth (for the calculation of trunk cross-section area),

Supported by the Ministry of Agriculture of the Czech Republic, Project QD 1408.

Table 1. Development of mean trunk-cross section area (cm^2) according to cultivars and rootstocks

Cultivar	2000		2001		2002		2003	
	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.
Bluefre	13.0	8.6	19.1	12.6	24.5	17.6	32.1	20.7
Čačanska lepotica	13.3	11.4	23.6	20.1	30.5	24.7	35.5	27.5
Čačanska najbolja	18.5	11.6	28.4	18.3	37.8	26.0	46.8	31.1
Čačanska rana	13.4	7.3	24.1	15.3	35.9	23.9	43.2	28.2
Čačanska rodna		6.9		11.0		14.9		17.4
Domestic Prune	11.9	7.7	22.3	14.6	34.3	21.6	46.1	27.6
Early Blue	12.2		22.6		33.6		43.0	
Empress	11.1	8.3	17.2	11.8	25.5	14.5	29.1	17.7
Herman	12.1	7.8	22.2	14.3	31.6	21.3	38.4	24.7
Oneida		11.3		18.2		23.2		26.6
Sanctus Hubertus	12.6	5.6	24.0	10.6	34.3	16.5	42.6	22.3
Valor	12.1	8.9	21.8	13.8	31.2	22.0	37.4	24.0
Wegierka Dabrowicka	10.5	7.9	20.7	12.4	27.7	15.5	33.6	17.6
Mean	12.8	8.7	22.4	14.7	32.6	21.1	39.3	24.4
LSD ($P = 0.05$)	3.3	2.3	4.6	4.4	6.8	5.7	7.4	6.9

For Tables 1–7: Myr. – Myrobalan; Wang. – Wangenheim

canopy diameter (in two opposite directions), canopy height, yields per tree and mean fruit weight. The mean fruit weight was estimated from samples of 50 fruits taken at random from each replication. All results were statistically evaluated by an analysis of variance.

RESULTS

Tree vigour

Both the observed characteristics of tree vigour – trunk cross-section area (TCA) and canopy volume (CV) differed somewhat from each other according to cultivars and rootstocks (Tables 1 and 2). Regarding the cultivars, the highest values of TCA on both rootstocks were observed in Čačanska najbolja, followed by Domestic Prune and Čačanska rana. On the contrary, the lowest values of TCA were recorded in Čačanska rodna, Empress and Wegierka Dabrowicka. The trees of Bluefre especially on Myrobalan seedlings also had rather restricted vigour. In the mean of all cultivars trees on Wangenheim Prune seedlings grew about 35% weaker than those on Myrobalan seedlings (Fig. 1).

Table 2. Development of the canopy volume (m^3) according to cultivars and rootstocks

Cultivar	2000		2001		2002		2003	
	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.
Bluefre	2.4	1.3	4.0	2.5	6.0	3.7	7.4	4.9
Čačanska lepotica	2.4	1.7	4.0	3.2	5.9	4.4	7.3	5.1
Čačanska najbolja	2.7	1.9	4.3	2.7	6.3	4.0	7.6	5.4
Čačanska rana	2.6	1.5	4.1	3.1	6.5	4.1	8.0	5.7
Čačanska rodna		1.7		2.6		3.1		3.8
Domestic Prune	2.3	1.5	3.7	2.1	5.7	3.9	7.1	5.1
Early Blue	2.2		3.8		6.1		7.6	
Empress	2.1	1.6	3.2	1.9	4.9	2.8	5.7	3.4
Herman	2.8	1.9	4.1	3.0	6.2	4.2	8.2	5.9
Oneida		1.2		1.5		2.5		3.6
Sanctus Hubertus	2.2	1.2	4.2	2.4	6.3	3.9	7.4	5.0
Valor	1.4	1.3	3.7	2.1	5.3	3.5	6.8	4.7
Wegierka Dabrowicka	1.7	1.1	2.1	1.6	3.6	2.6	4.6	3.3
Mean	2.2	1.5	3.7	2.4	5.7	3.6	7.1	4.6
LSD ($P = 0.05$)	0.3	0.2	0.7	0.6	0.6	0.7	1.4	1.2

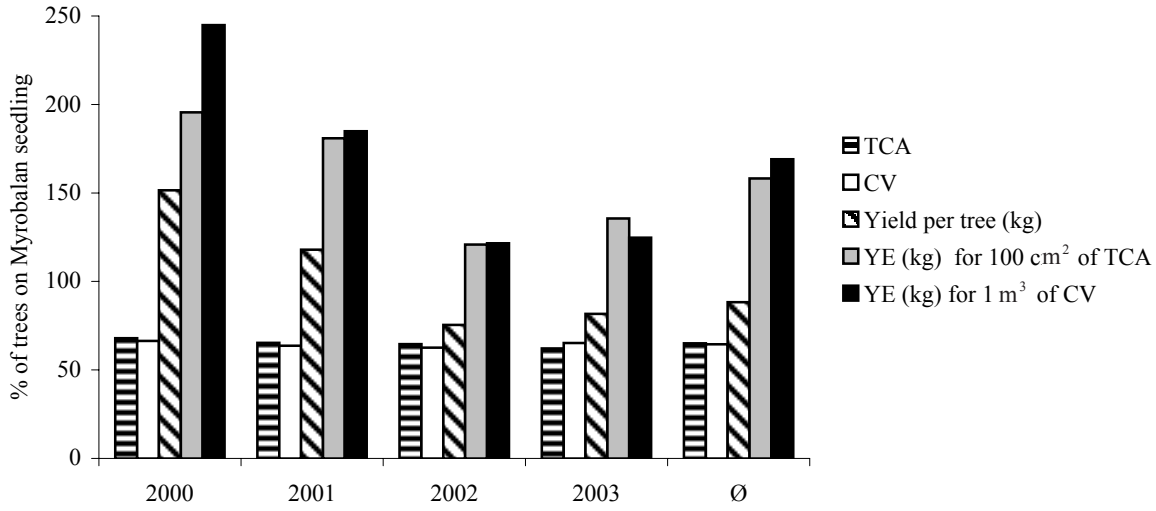

Fig. 1. Growth and yield parameters of trees on Wangenheim Prune rootstock as percentage of those on Myrabalan seedling

When the canopy volume (CV) was taken into account, Herman was ranked as the most vigorous, followed by Čačanska rana and Čačanska najbolja (Table 2). On the contrary, the least vigorous was Wegierka Dabrowicka, followed by Empress, Oneida and Čačanska rodna. In the mean of all cultivars trees on Wangenheim Prune seedlings grew about 36.5% weaker according to the canopy volume than those on Myrobalan seedlings.

Precocity

Bluefre was the most precocious cultivar in this trial followed by Valour and Empress (Table 3). On the contrary, the latest starts of bearing were recorded with Domestic Prune, Čačanska rana and Herman. Trees on Wangenheim Prune seedling rootstocks were generally somewhat more precocious than trees on Myrobalan seedlings.

Yield per tree

Valor was the best cropper of all cultivars evaluated in this trial if the yields per tree on both rootstocks were taken into account (Table 3). The highest cumulative yield per tree (42.3 kg), however, was achieved by Čačanska najbolja on Myrobalan seedling rootstocks. Remarkable were also the yields of Empress on the same rootstock. In the case of Wangenheim Prune seedling rootstocks the highest cumulative yield per tree was recorded in Wegierka Dabrowicka (40.5 kg). The poorest yields on both rootstocks were recorded in Čačanska rana. A low level of bearing was also found out in Domestic Prune, especially on Myrobalan seedlings. The

Table 3. Mean yield (kg/tree) according to cultivars and rootstocks

Cultivar	1999		2000		2001		2002		2003		Σ 1999–2003	
	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.
Bluefre	0	0.2	5.8	4.1	7.7	6.3	8.0	6.1	8.2	6.4	29.7	23.2
Čačanska lepotica	0	0	0.5	0.3	5.3	6.9	8.5	8.5	13.9	14.5	28.2	30.3
Čačanska najbolja	0	0	0.9	2.5	8.2	11.0	8.4	4.7	24.8	17.7	42.3	35.6
Čačanska rana	0	0	0	0	2.2	3.4	3.1	2.3	13.1	9.7	18.4	15.4
Čačanska rodna				2.2		5.3		6.9		17.2		31.7
Domestic Prune	0	0	0	0	2.1	2.4	7.3	4.3	13.0	14.5	22.4	21.3
Early Blue	0		0.3		1.6		5.2		20.2		27.2	
Empress	0	0	1.9	3.2	7.5	6.7	7.6	4.2	23.4	13.6	40.4	27.6
Herman	0	0	0	0.3	1.6	1.5	10.8	8.3	21.2	15.9	33.6	26.0
Oneida	0			2.8		4.2		4.8		11.1		22.7
Sanctus Hubertus	0	0	0.2		4.1	3.3	10.7	6.5	22.2	19.8	37.2	29.6
Valor	0	0	2.2	3.7	4.7	7.3	9.3	6.5	25.8	21.8	42.0	39.2
Wegierka Dabrowicka	0	0	1.5	3.0	6.5	8.2	5.5	6.2	22.1	23.2	35.6	40.5
Mean	0	0	1.2	1.8	4.7	5.5	7.7	5.8	18.9	15.4	32.3	28.6
LSD (P = 0.05)			1.3	2.4	2.7	4.1	3.4	3.8	5.1	3.2	3.9	4.7

Table 4. Yield efficiency calculated as kg/100 cm^2 of TCA according to cultivars and rootstocks

Cultivar	2000		2001		2002		2003		∑ 1999–2003	
	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.
Bluefre	44.7	47.4	40.2	50.2	32.7	34.7	25.7	30.9	35.8	40.8
Čačanska lepotica	3.8	2.9	22.4	34.4	27.7	34.5	39.3	52.7	23.3	31.1
Čačanska najbolja	5.0	22.0	28.9	58.5	22.1	18.0	53.0	56.8	27.3	38.8
Čačanska rana	0	0	9.2	22.3	8.6	9.5	30.0	34.3	16.1	22.0
Čačanska rodna		31.8		48.3		46.5		99.1		56.4
Domestic Prune	0	0	9.4	16.6	21.1	20.0	28.2	52.7	19.6	29.8
Early Blue	2.5		6.9		15.3		46.8		17.9	
Empress	17.0	39.2	43.7	56.6	29.9	28.7	80.4	76.5	42.7	50.2
Herman		3.4	7.1	10.5	34.3	37.2	55.2	64.4	32.2	28.9
Oneida		24.5		22.4		20.7		41.7		27.3
Sanctus Hubertus	1.8	0	17.1	31.0	31.2	39.5	52.1	88.8	25.5	39.8
Valor	17.4	41.1	21.6	52.4	29.6	29.6	69.0	90.7	34.4	53.5
Wegierka Dabrowicka	14.2	37.6	31.4	66.0	19.7	39.9	65.7	118.4	32.8	65.5
Mean	10.6	20.8	21.6	39.1	24.8	29.9	49.6	67.3	28.0	40.3
LSD ($P = 0.05$)	10.0	12.5	11.3	9.0	8.3	6.8	5.6	7.7	8.8	9.0

mean total cumulative yield per tree was about 3.8 kg (11.7%) higher on Myrobalan than on Wangenheim Prune seedling rootstocks.

Yield efficiency

The highest yield efficiency calculated per unit of TCA was recorded in Wegierka Dabrowicka on Wangenheim Prune seedling rootstocks (Table 4). Remarkable levels of the parameter on this rootstock were also found in Čačanska rodna and Valor. In the case of the Myrobalan rootstock the most productive was Empress followed by Bluefre and Valor. On the contrary, Čačanska rana and Early Blue belonged to the least productive cultivars. The mean yield efficiency calculated per unit of TCA for trees on Wangenheim Prune seedling rootstocks was about 30.5% higher than that for trees on the Myrobalan rootstock.

Similarly, by expressing the yield efficiency per unit of CV Wegierka Dabrowicka on Wangenheim Prune seedling rootstocks was also the most productive (Table 5). Valor and Empress followed it in this parameter on the same rootstock. These three cultivars were the most productive also on the Myrobalan rootstock. Poor productivity of Čačanska rana, Early Blue and Domestic Prune was revealed here as well. Trees on Wangenheim

Table 5. Yield efficiency calculated as kg/m^3 of canopy volume according to cultivars and rootstocks

Cultivar	2000		2001		2002		2003		∑ 1999–2003	
	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.
Bluefre	2.4	3.2	1.9	2.6	1.3	1.7	1.1	1.3	1.7	2.2
Čačanska lepotica	0.2	0.2	1.3	2.2	1.4	2.0	1.9	2.8	1.2	1.8
Čačanska najbolja	0.3	1.3	1.9	4.0	1.3	1.2	3.3	3.3	1.8	2.5
Čačanska rana	0	0	0.5	1.1	0.5	0.6	1.6	1.7	0.7	0.9
Čačanska rodna		1.3		2.0		2.2		4.6		2.5
Domestic Prune	0	0	0.6	1.2	1.3	1.1	1.8	2.8	0.9	1.3
Early Blue	0.1		0.4		0.9		2.7		1.0	
Empress	0.9	2.0	2.4	3.4	1.6	1.5	4.1	4.0	2.2	2.7
Herman	0	0.1	0.4	0.5	1.7	2.0	2.6	2.7	1.2	1.3
Oneida	0	2.3		2.7		1.9		3.1		2.5
Sanctus Hubertus	0.1	0	1.0	1.4	1.7	1.7	3.0	4.0	1.4	1.8
Valor	1.6	2.9	1.3	3.5	1.7	1.8	3.8	4.7	2.1	3.2
Wegierka Dabrowicka	0.9	2.8	3.2	5.2	1.5	2.4	4.8	7.0	2.6	4.4
Mean	0.6	1.3	1.3	2.5	1.4	1.7	2.8	3.5	1.5	2.2
LSD ($P = 0.05$)	0.8	1.2	0.9	0.7	0.4	0.5	1.1	1.6	0.8	1.0

Table 6. Yield calculated in tons/ha according to cultivars and rootstocks

Cultivar	2000		2001		2002		2003		Ø 1999–2003	
	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.	Myr.	Wang.
Bluefre	7.7	5.5	10.3	8.4	10.7	8.1	11.0	8.5	9.9	7.6
Čačanska lepotica	0.7	0.4	7.1	9.2	11.3	11.4	18.6	19.3	9.4	10.1
Čačanska najbolja	1.2	3.4	10.9	14.3	11.1	6.2	33.1	23.6	14.1	11.9
Čačanska rana	0	0	3.0	4.6	4.1	3.0	17.5	12.9	6.1	5.1
Čačanska rodna		2.9		7.1		9.2		23.0		10.6
Domestic Prune	0	0	2.8	3.2	9.7	5.8	17.3	19.4	7.5	7.1
Early Blue	0.4		2.1		6.9		26.9		9.1	
Empress	2.5	4.3	10.0	8.9	10.2	5.5	31.2	18.1	13.5	9.2
Herman	0	0.4	2.1	2.1	14.4	11.1	28.2	21.2	11.2	8.7
Oneida		3.7		5.5		6.3		14.8		7.6
Sanctus Hubertus	0.3	0	5.4	4.4	14.2	8.7	29.6	26.4	12.4	9.9
Valor	2.8	4.9	6.3	9.7	12.3	8.7	34.4	29.0	14.0	13.1
Wegierka Dabrowicka	2.0	3.9	8.7	10.9	7.3	8.3	29.5	30.9	11.9	13.5
Mean	1.6	2.5	6.2	7.4	10.2	7.7	25.2	20.6	10.8	9.5
LSD ($P = 0.05$)	1.7	3.2	3.6	5.5	4.5	5.1	6.8	4.3	4.2	4.5

Prune seedling rootstocks were on average about 0.7 kg per 1 m^3 of CV (31.8%) more efficient than trees on the Myrobalan rootstock.

Yield per hectare

The yields calculated in tons per hectare for evaluated cultivars on both rootstocks for the period 2000–2003 are presented in Table 6. The mean yield of all variants for the period fluctuated around 10 tons per hectare. The highest mean yield –14.1 t per hectare was recorded in Čačanska najbolja grown on the Myrobalan rootstock. A maximum yield (7.7 t per hectare) in the third year after planting (2000) was recorded in Bluefre on the Myrobalan rootstock. In the fourth year after planting (2001) such yield amounting to 14.3 t was found in Čačanska najbolja on the Wangenheim Prune seedling rootstock. Practically the same maximum yield (14.4 t) was gathered in Herman on the Myrobalan rootstock in the next year (2002), when fruit sets were generally negatively influenced by late spring frosts and some fungal disease incidence. The highest maximum yield equal to 34.4 t was recorded in the sixth year after planting (2003) in Valor on the Myrobalan rootstock.

Fruit weight

The mean fruit weight for all evaluated cultivars on both rootstocks is presented in Table 7. The largest fruits were recorded in Bluefre, which had the mean fruit weight of 55.2 and 57.2 g, respectively. Besides this cultivar Čačanska rana, Empress, Valor and Oneida could also be classified as large fruit varieties on the basis of summarised results, with minimum differences between them. The next one in the succession – Čačanska najbolja varied from a medium size category to a large fruit one in the observed years. Among the cultivars with the medium fruit size Čačanska lepotica, Sanctus Hubertus and Early Blue could be classified. Čačanska rodna and Herman were proved in this study as rather small fruit ones. Domestic Prune closes the whole range of this comparison, with the smallest mean fruit size of 17.6 and 17.9 g, respectively.

A variation within the cultivars was mostly due to differences in the fruit set that also occurred in particular years. For the same reason the mean fruit size of trees on the Wangenheim Prune seedling rootstock was usually somewhat smaller than that of trees on the Myrobalan rootstock. These differences, however, were not statistically significant because of variability of collected data.

Date of picking maturity

The mean harvest season of evaluated cultivars started by Herman on the 12th July and ended by Oneida on the 9th September (Table 7). Each year the start of picking maturity varied rather largely within the cultivars by one week in both directions according to the climatic conditions of the season. No steady difference between rootstocks was observed.

Effect of the rootstock

A comparison of Wangenheim Prune seedling rootstock with the standard one (Myrobalan rootstock) revealed marked differences between them both in growth vigour and bearing of trees (Fig. 1). Trees on Wangenheim Prune had restricted vigour (about one third) and higher yield efficiency than those on the standard rootstock. Moreover, they started bearing earlier and their yielding seemed to be more regular in the first years. The mean fruit size was a little smaller in several cases

Table 7. Mean fruit weight and date of harvest start

Cultivar	Mean fruit weight (g)		Mean start date of picking maturity
	Myr.	Wang.	
Bluefre	55.2	57.2	1.9.
Čačanska lepotica	34.8	31.9	2.8.
Čačanska najbolja	41.9	39.2	16.8.
Čačanska rana	46.7	48.4	21.7.
Čačanska rodna		22.5	21.8.
Domestic Prune	17.6	17.9	26.8.
Early Blue	27.5		28.7.
Empress	50.9	47.4	30.8.
Herman	24.1	24.9	12.7.
Oneida		44.0	6.9.
Sanctus Hubertus	28.6	26.9	25.7.
Valor	46.5	47.7	27.8.
Wegierka Dabrowicka	25.1	24.5	15.8.
Total	36.3	36.0	
LSD ($P = 0.05$)	3.2	2.8	

but these differences were not statistically significant. According to the results of this study the Wangenheim Prune rootstock proved to be valuable for modern plum orchards planted at higher densities of smaller trees.

Assessment of cultivars

From all 13 cultivars tested in this study Valor and Empress had the best performance of tree growth, bearing habit and fruit size, which indicates their suitability for the modern type of plum orchard. Bluefre could also be of some interest for growers because of the best precocity and large fruit size, and Oneida for prolonging the whole harvest season. On the contrary, poor cropping is the most serious disadvantage of Čačanska rana despite its excellent fruit size. Outstanding productivity was observed in Čačanska rodna and Wegierka Dabrowicka but their fruit size was too small to meet present consumer demands for fresh fruit in the Czech Republic. Domestic Prune is not suitable for this modern type of plum orchard because of late cropping and very small fruit size.

DISCUSSION

The results obtained in this study are generally more or less in agreement with previous findings in Poland (GRZYB et al. 1998; HODUN et al. 1998; ROZPARA, GRZYB 1998). The dwarfing effect of Wangenheim Prune seedling rootstock was however stronger in Poland (a growth reduction was about more than 50% in comparison with Myrobalan seedling rootstock) than in this study. This difference could partly be explained by different soil conditions as the experiment in Poland was established on a poor sandy soil. For the same reasons the effect of the rootstock on yield efficiency was higher at Holovousy. Another reason for the difference might be a high density of planting used in this study. It is known that increased planting density reduces tree vigour (MIKA et al. 1999) and therefore the vigour of standard trees on Myrobalan was more limited in this way.

Another greater discrepancy between the results was in the size of fruits in Wegierka Dabrowicka. In Poland fruits of this cultivar were recorded as medium size (ROZPARA, GRZYB 1998) whereas they were rather small here. This could be connected with greater tendency of Wegierka Dabrowicka to over-cropping at Holovousy.

The large fruit size of Valor was confirmed by the results of another study at Holovousy (PAPRŠTEIN et al. 2001). Similarly, the strong vigour of Čačanska najbolja was already reported here as well as positive effects of some rootstocks on an increase in yield efficiency (KOSINA 2001).

Some adverse relationships between yield and mean fruit size were determined in some cultivars of prunes recently (STEHR 2003). For this reason a certain undesirable diminishing of fruit size could be expected with aging in the very productive cultivars Empress and Valor. Therefore chemical flower or fruit thinning was applied in both cultivars (PIETRANEK et al. 2003) that positively affected mean fruit mass and soluble solids content in each cultivar. In the case of Čačanska rodna, which has a very strong tendency to over-cropping, regular severe pruning was recommended (OGAŠANOVIČ et al. 1994). Probably the same treatment should be useful also in Wegierka Dabrowicka.

The tree spacing 5 × 1.5 m that was used in this study could be even smaller for some cultivars but a much longer period of evaluation should be used for a final recommendation in this respect.

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Received for publication January 23, 2004
Accepted after corrections March 4, 2004

Hodnocení nových odrůd slivoní na dvou podnožích v pokusné výsadbě v Holovousích v letech 1998–2003

ABSTRAKT: V pokusu, který byl založen na jaře 1998 ve sponu 5 × 1,5 m, bylo na dvou podnožích (semenáče myrobalánu a Wangenheimovy švestky) hodnoceno 13 odrůd slivoní. Stromy byly tvarovány jako vřetena. Nejvzrůstnější odrůdou byla Čačanská najbolja, za kterou následovaly Čačanská raná, Herman a Domácí švestka. Naopak nejslabším růstem stromů se vyznačovala polská odrůda Wegierka Dabrowická, za níž ve vzestupném pořadí následovaly Čačanská rodná a Empress. Odrůdy Čačanská najbolja, Wegierka Dabrowická a Valor přinesly nejvyšší výnosy z jednoho stromu, zatímco odrůda Čačanská raná měla výnosy zcela nejnižší. Odrůda Bluefre se vyznačovala nejranějším nástupem do období plodnosti. Nejvyšší specifickou plodnost měla Wegierka Dabrowická, za níž se v dalším pořadí umístily Empress a Valor. Naproti tomu odrůdy Čačanská raná, Early Blue a Domácí švestka měly specifickou plodnost nejnižší. Stromy na podnoži Wangenheimova švestka rostly asi o třetinu slaběji než stromy na semenáčích myrobalánu, avšak jejich specifická plodnost byla o 31 % vyšší, přestože výnosy z jednoho stromu byly o 12 % nižší. Největší plody v průměru měla odrůda Bluefre. Rovněž odrůdy Čačanská raná, Empress, Valor a Oneida byly zařazeny mezi velkoplodé, přičemž průměrné velikostní rozdíly mezi nimi byly minimální. Průměrná doba sklizňového období hodnocených odrůd začínala odrůdou Herman 12. července a končila 9. září odrůdou Oneida. Odrůdy Valor a Empress dosáhly v celém pokusu nejlepšího hodnocení pokud jde o růst stromů, výnosy a velikost plodů, což ukazuje na jejich vhodnost pro moderní husté výsadby slivoní na nízkých tvarech. Určitý význam pro pěstitele dále může mít odrůda Bluefre pro svůj raný nástup do plodnosti a značnou velikost plodů a dále Oneida z důvodu možnosti prodloužení sklizňového období slivoní.

Klíčová slova: slivoň; odrůdy; vzrůstnost stromů; výnosy; podnože, specifická plodnost

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