Agronomic Characteristics of Novi Sad Winter Vetch Cultivars

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Introduction Genus *Vicia*. contains important annual food and forage species such as field bean, *V. faba*., narbon vetch, *V. narbonensis*, and common vetch, *V. sativa* (Maxted, 1995), while Hungarian *V. pannonica* Crantz and hairy vetch *V. villosa* also play an important role in the Balkans. Winter vetches are excellent forage catch crops useful for sustainable agriculture and organic farming (Ćupina *et al.*, 2004). Our study was aimed at determining the agronomic characteristics of the winter vetch cultivars developed in Novi Sad, assessing thus their ability for successful growing in the prevailing conditions of Serbia and Montenegro.

Materials and methods A three-year small-plot trial (2002-2004) was established at the Experiment Field Institute at Rimski Šančevi. It included all Novi Sad winter vetch cultivars, NS Sirmium (*V. sativa*), NS Violeta (*V. villosa*), NS Panonika (*V. pannonica*) and an unreleased cultivar L-92 (*V. sativa*). They were sown during early October, at a crop density of 150 viable seeds/m^2, and were cut when the first pods began to appear (Mihailović *et al.*, 2004). Yield of fresh weight and hay crude protein (CP) in the dry matter of the plants that survived until cutting, were determined.

Results The cultivar NS Violeta had the greatest plant height as well as the greatest number of internodes, the greatest number of stems per plant and the largest mass/plant. The smallest plant height and the smallest plant mass were found in NS Panonika. The smallest number of internodes was found in NS Sirmium and L-92, while NS Sirmium also had the smallest number of stems per plant. On the basis of number of plants that survived until cutting, NS Sirmium and L-92 proved the most winter hardy, with 123 and 125 plants per m^2. Apart from an excellent winter hardiness, NS Violeta had the smallest number of plants per m^2, mainly due to severe competition within the stand. Thanks to an optimal relationship between yield components, L-92 had the highest yield of both fresh weight and hay. CP varied from 1.96 g/kg DM in NS Panonika to 2.14 g/kg DM in NS Violeta, which was in accord with Mišković (1986).

Table 1 Agronomic characteristics of Novi Sad winter vetches cultivars during 2002-2004

Cultivar name	No. of plants per m^2 before cutting	Plant height (cm)	No. of stems per plant	No. of inter-nodes	Plant mass (g/plant)	Yield of fresh weight (t/ha)	Yield of hay (t/ha)	Level of CP (g/kg DM)
NS Sirmium	123	89	2.4	17.0	31.61	32.0	6.29	2.03
NS Violeta	88	169	3.3	30.8	42.59	30.7	6.16	2.14
NS Panonika	113	71	2.8	20.9	25.41	30.0	5.17	1.96
L-92	125	89	2.8	17.3	36.70	32.7	6.53	2.07
LSD 0.05	11	35	1.7	4.5	9.78	2.5	0.6	0.11
0.01	15	47	2.4	5.9	14.22	4.1	1.0	0.17

Conclusions All winter vetch cultivars that were developed at the Institute of Field and Vegetable Crops in Novi Sad are winter hardy and well adapted to the environmental conditions of Serbia and Montenegro. Being able to take a significant part in diverse farming systems, winter vetches can supply animal husbandry with high yields and high quality feed in one of the easiest and least expensive possible ways.

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