

## Development of high-yielding and early-maturing Korean hairy vetch

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**Introduction** There are a number of forage cultivars recommended by the government, but only a few winter-spring legumes are available for the farmers in Korea. Hairy vetch has superior winter hardiness and produces high dry matter (DM) yield compared with crimson clover, Persian clover, rose clover, common vetch and Chinese milk vetch in Korea. However, under a double cropping forage production system an early maturing vetch cultivar was more productive than a late maturing one (Shin *et al.*, 2000). The objective of this research was to develop a high yielding and early flowering new hairy vetch cultivar derived from an accession in Korea.

**Materials and methods** Most vigorous early flowering hairy vetch cultivars were selected and crossed by open pollination and their seeds were bulked and plants were reselected (Seedco, 1999). A performance trial was conducted to evaluate agronomic characteristics, forage quality and dry matter (DM) yield of a new Korean hairy vetch (KHV) (*Vicia villosa*), an early maturing introduced cultivar, (Haymaker Plus) (HP) (*Vicia villosa ssp. dasycarpa*) and a late maturing hairy vetch cultivar (Balosa) at Seongju in the Keongbuk inland region and Sacheon in the southern coastal region for one year.

**Results** Seedling vigour and cold tolerance of HP were a little lower than those of Barlosa and KHV at Seongju, but there were no differences at Sacheon (Table 1). Fifty percent-flowering dates of KHV and HP were similar, but Barlosa did not flower until harvest. At harvest, KHV was taller than Balosa and HP. DM yield of KHV was higher than that of Balosa and HP at Seongju, but that of HP was higher than that of Balosa and KHV at Sacheon. Vetch cultivars were high in CP and low in ADF.

**Table 1** Agronomic characteristics, forage quality and forage yield of vetch at Seongju and Sacheon, 2003-2004

Cultivar	Seedling vigour	Cold tolerance	Flowering 9day/month	Plant height (cm)	DM yield (t/ha)	CP %	ADF %	NDF %
Barlosa	8(8)	9(9)	-(-)	21(50)	2.5(9.2)	24(22)	23(30)	32(44)
KHV	8(8)	9(9)	9/4(10/4)	41(69)	2.9(8.8)	22(20)	26(34)	35(47)
HP	7(8)	8(9)	11/4(12/4)	30(59)	2.7(10.4)	23(20)	24(33)	33(46)
Mean	8(8)	9(9)	10/4(11/4)	31(59)	2.7(9.4)	23(21)	24(32)	33(46)
LSD (P<0.05)					0.3(0.8)			

( ) = Sacheon results. Rating (Seedling vigour, Cold tolerance): 9=outstanding, 1=poor.

**Conclusions** DM yield of early maturing KHV was the highest ( $p<0.05$ ) of the cultivars at Seongju, but that of HP was the highest ( $p<0.05$ ) at Sacheon. Growth of HP at Seongju was restricted by low temperatures during winter, more so than hairy vetch cultivars were.

### References

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