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Performance of oat (*Avena sativa*) genotypes in relation to cutting management under late-sown conditions

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A field experiment was conducted during winter season of 1991–92 and 1992–93 to find out production potential of different oat (*Avena sativa* L.) genotypes under 2 levels of cutting, sown under late condition on silty-clay loam soil of Shalimar.

The treatment combinations of 7 oat genotypes ('Kent', 'Blacknip', 'Collabar', 'Cobar', 'OX_T 261-27-1-2-2', OX 391-16-1-4-7' and 'OGP 7605') and 2 levels of cutting (single cut at heading stage and 2 cuts, first cut at maximum tillering stage and second a month after the first cut) were tried in randomized block design with 3 replications. The soil was neutral in reaction with medium available nitrogen and phosphorus but with high potassium. The sowing was done in rows 25 cm apart, with a seed rate of 100 kg/ha in the first week of November during both the years. A basal dose of 50 kg P_2O_5/ha and 20 kg K_2O/ha along with 50 kg N/ha was banded in rows before sowing. The rest of N was applied in 2 splits, at 120 and 130 days after sowing. Fresh weight of forage

Table 1. Effect of different genotypes and cutting management on green- and dry-fodder and crude protein content of oat

Treatment	Green-fodder yield (q/ha)		Dry-fodder yield (q/ha)		Crude protein (%)	
	1991	1992	1991	1992	1991	1992
Genotype						
'Kent'	490.0	461.8	97.5	96.2	9.7	9.9
'Blacknip'	536.0	538.0	108.6	112.0	10.0	9.8
'Collabar'	547.0	516.3	112.0	107.5	9.5	9.5
'Cobar'	501.0	450.6	102.8	89.6	9.3	9.6
'OX 261-27-1-2-2'	451.0	414.6	90.2	82.0	9.8	10.2
'OX 391-16-1-4-7'	423.0	440.2	88.4	90.0	10.1	9.8
'OGP 7605'	426.0	418.5	90.3	85.2	9.7	10.0
CD (P = 0.05)	84.2	48.2	16.1	9.5	NS	NS
Cutting management						
Single cut	480.0	472.2	96.0	100.0	9.2	9.4
Double cut	485.0	451.5	93.0	95.0	11.3	11.6
CD (P = 0.05)	NS	NS	NS	NS	1.2	1.4

from each plot was recorded after each cut and samples of 500 g were taken and dried at 80°C for 24 hr for dry-fodder estimation. The nitrogen content was estimated by Kjeldahl's method and crude protein (%) was worked out on dry-weight basis.

The difference due to genotypes for green- and dry-fodder production was significant during both the years (Table 1). During 1991, 'Collabar' gave significantly 21.2, 28.4 and 29.3% higher green-fodder yields than 'OX 261-27-1-2-2', 'OGP 7605' and 'OX 391-16-1-4-7' respectively, but was on a par with 'Blacknip', 'Cobar' and 'Kent' genotypes. However, during 1992 'Collabar' was only at par with 'Blacknip' and outyielded 'Kent', 'Cobar', 'OX 391-16-1-4-7', 'OGP 7605' and 'OX 261-27-1-2-2' by 11.8, 14.5, 17.2, 23.3 and 24.5% respectively. Crude protein content did not show significant variation due to different oat genotypes. Rana *et al.* (1990) also recorded similar crude protein content in different oat genotypes.

Different cutting managements gave similar green- and dry-fodder yields during both the years (Table 1). Two cuttings showed higher crude protein (%) than single cutting. Similar observations were also made by Joon (1984).

Thus 'Collabar' and 'Blacknip' oat can be grown for higher green-fodder yield and if harvested for 2 cuts, can provide green fodder during lean periods under Kashmir conditions.

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Effect of planting date, irrigation and phosphorus on chickpea (*Cicer arietinum*) grown on clay-loam soil

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An introduction of gram or chickpea (*Cicer arietinum* L.) in rice fallows of eastern Madhya Pradesh is a good practice to increase the per unit area productivity of prevailing monocropped system. The crop growth and development and its nutrient and irrigation needs are greatly governed by the planting time of the crop. Keeping this