

Identification of oat (*Avena sativa* L.) varieties for prolonged green fodder production under central India conditions**Shweta**

C S Azad University of University Agriculture & Technology, Kanpur, India

Corresponding author e-mail: shweta1805@gmail.com

Keywords: Oats, Green fodder, Extended harvesting**Introduction**

India is now highest milk producer in the world and state of Uttar Pradesh is largest milk producer in the country. The state is also home to highest number of cattle population in the country. Besides all these facts, state is facing acute shortage of green fodder especially during lean period (March-June). During these periods milk production is substantially reduced and cost of feeding increases. Thus the biggest challenge for cattle keeping and fodder management is to provide cheaper source of nutritious feeding during the period. The challenge can be met with combination of extending period of green fodder from winter crops and growing early summer fodder crops. Among the winter crops Egyptian clover and oats are the important crops which grown on the large area. The total oat cultivation in the country is about 500 000 ha, out of which area under cultivation in Uttar Pradesh is about 34% (Choubey and Roy, 2005) followed by Punjab (20%), Bihar (16%), Haryana (9%) and Madhya Pradesh (6%). Having wide adaptability and suitability to different growing conditions, oats provides an opportunity to supply green fodder for extended period. Thus the present investigation was conducted with objective to select varieties suitable for extended green fodder supply under Kanpur conditions.

Materials and Methods

A field experiment was conducted during Rabi season 2014-15 at the experimental block of Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, Uttar Pradesh located at latitude and longitude of 26.4912° N, 80.3070° E, respectively and at an altitude of 130 m above mean sea level. The experimental material consists of 15 oat varieties (Kent, OL 125, OS 7, JO-3-93, RO 19, JO-3-91, OS 61, HFO 114, OS 346, OL 9, PLP 1, NDO-1, OS-611, HJ-8 and Sabazar) developed and released for different agro-ecological conditions. (Table1.) these were sown on three different dates i.e. October 15, November 15 and December 15 for the identification of best variety for each situation. At the each date of sowing experiment was conducted in Randomized Complete Block Design in three replication where each variety was sown in plot of 3 x 2 m with row to row distance of 25 cm. Recommended package of practices were followed to raise the crop. The observations were recorded for the GFY and other yield contributing traits on each variety across all three date of sowing.

Table 1: Details of varieties and their yield

S. No.	Variety	I st date sowing (October)		II nd date of sowing (November)		3 rd date of sowing (December)	
		GFY (q/ha)	DMY (q/ha)	GFY (q/ha)	DMY (q/ha)	GFY (q/ha)	DMY (q/ha)
1	Kent	353.0	62.1	388.2	55.7	244.3	38.1
2	OL 125	364.0	58.2	385.2	64.1	234.5	36.2
3	OS 7	398.1	58.1	402.1	68.1	288.1	39.3
4	JO-3-93	350.2	62.3	321.6	51.1	241.2	31.2
5	RO 19	425.5	88.2	444.1	91.2	335.8	52.1
6	JO-3-91	252.0	41.1	362.0	52.3	212.3	33.2
7	OS 61	398.4	62.1	368.4	42.1	263.3	36.5
8	HFO 114	310.0	45.1	265.0	38.5	220.2	37.3
9	OS 346	333.1	39.2	363.5	49.3	244.4	35.4
10	PLP 1	325.0	42.1	333.0	45.1	229.2	38.8
11	NDO 1	298.5	52.1	258.5	39.3	210.6	32.2
12	OS 611	311.0	55.1	341.0	42.5	245.1	35.2
13	HJ 8	298.8	36.2	396.6	64.1	222.5	31.1
14	Sabzar	355.0	68.2	303.0	37.1	219.4	36.2

15	OL 9	398.8	88.7	366.5	56.2	266.9	41.2
	Mean	344.8	57.3	353.4	53.1	245.2	36.9
	CD (p=0.5)	13.33	2.61	11.22	2.30	16.33	3.33

Results and Discussion

Table 1 present the Green Fodder Yield (GFY) and Dry Matter yield (DMY) for different varieties of oats at the different dates of sowing. Across all the dates of sowing, variety RO 19 produced highest biomass and showed its suitability for all sowing conditions. For early sowing other varieties which showed better performance were OS 7, OS 61 and OL 9. The varieties shown in the October were continuously harvested for 4 times at interval of 45 days till February and provided green fodder from December to February. However for the timely sown conditions RO 19 showed highest GFY and DMY which followed by OS-7 and HJ 8 for GFY and for DMY also RO 19 was best variety followed by OS 7, OL 125 and HJ 8. The green fodder availability from timely sown crop ranged from January last week to March third week. Late sown crop produced harvestable green fodder upto 15 April and the variety OL 9 was last to be harvested, while RO 19 was to produce highest GFY and DMY. Other who performed better under late sown conditions were OS 7 and OL 9 for both GFY and DMY.

Conclusion

Based on the experiment it was concluded that variety RO-19 is best variety for Kanpur conditions in terms of higher GFY and DMY for varied sowing conditions, while varieties which can be cultivated under sowing conditions include OS 7 and OL 9.

References

Choubey, R. N. and A. K. Roy, 2005. Forage oat breeding in India –achievements and prospects. <http://www.fao.org/ag/agp/AGPC/doc/Proceedings/nepal2005/chapter5.pdf> down loaded on 20/06/2015