

## Short Communication

# ***Saag Sarson*: A new variety of Chinese cabbage (*Brassica rapa* subsp. *chinensis*)**

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Received: June 2017 / Accepted: November 2017

Chinese cabbage (*Brassica rapa* subsp. *chinensis*) is a winter season crop. It thrives best at temperature ranging from 15-21°C. In Punjab, it is sown on the raised nursery beds in mid September and seedlings are transplanted in the second fortnight of October. Its first cutting is ready by the middle of November. Punjab Agricultural University, Ludhiana has recommended a new variety of Chinese cabbage '*Saag Sarson*' for commercial cultivation in Punjab in 2015. It is developed by mass selection. The salient features of the new variety are mentioned below:

**Salient characteristics:** It is a non-heading type variety of Chinese Cabbage which makes a high quality 'saag' due to its tender and succulent leaves. The plants are medium tall (47 cm) with light green serrated leaves, leaf surface smooth and glabrous (non hairy), petiole thick and light green. The leaves have erect bearing habit which escapes them touching the soil. The leaves are low in oxalates (0.04 g/100g dry weight basis) and rich in vitamin C (346 mg/100g fresh weight basis). The first cutting can be taken in 30 days after transplanting. Average green leaf yield is 206 q/acre (516 q/ha).

**Agronomic characters:** The leaf length of '*Saag Sarson*' is 39.7 cm, which is 53.28 per cent more than the check variety 'Chinese *Sarson*' (25.9 cm) (Table 1). Similarly the leaf width of '*Saag Sarson*' is 15.5 cm, which is 15.67 per cent more than the check variety 'Chinese *Sarson*' (13.4 cm) (Table 1). The leaf colour of '*Saag Sarson*' is light green which is same as that of check 'Chinese *Sarson*'. The number of leaves per plant of '*Saag Sarson*' (26.2) is 26.69 per cent more than that of check 'Chinese *Sarson*' (30.7).

**Yield performance:** Yield performance of new Chinese cabbage variety '*Saag Sarson*' and the check variety

'Chinese *Sarson*' is given in Table 1. The average yield of '*Saag Sarson*' is 516.1 q/ha at PAU, Ludhiana which is 33.9 percent higher than check 'Chinese *Sarson*'. In adaptive research trials, the total yield of *saag Sarson* is 428.6 q/ha which is 18.77 percent higher than the check variety 'Chinese *Sarson*'.

**Quality characters:** This new variety "*Saag Sarson*" is low in oxalate content i.e. 0.04 g/100g on dry weight basis (Table 2) which is significantly at par with the check variety 'Chinese *Sarson*' but lower than rest of the genotypes used in the study. The total chlorophyll content of '*Saag Sarson*' is 9.05 mg/g which is significantly at par with the check variety. The ascorbic acid content of '*Saag Sarson*' is 346.0 g/100g on fresh weight basis which is non-significantly different from the check. The dry weight and mineral content of '*Saag Sarson*' is 5.39 and 0.17 per cent, respectively which is non-significantly different from the check 'Chinese *Sarson*'.

**Processing for canned curried saag:** Six Brassica varieties i.e. *Saag Sarson*, Palam Dark Green (PDG), Durgapur Chini *Sarson* (DCS-1), RLM-1359, GSL-1 and Chinese *Sarson* were processed in to canned curried *Sarson ka saag* for three years (2008-10). Among the six varieties *Saag Sarson* was found to have the best



**Table 1:** Yield and yield attributing characters of *Saag Sarson*

Variety	Leaf length (cm)	Leaf width (cm)	Number of leaves/plant	Yield (q/ha)
<i>Saag Sarson</i>	39.7	15.5	35.6	516.1
PDG	29.3	17.0	33.1	504.4
DCS-1	22.4	10.4	25.4	237.0
Chinese <i>Sarson</i> (Check)	25.9	13.4	28.1	385.4
C. D. (P=0.05)	8.88	2.12	4.44	29.58

**Table 3:** Field screening of Chinese Cabbage against *Alternaria* leaf spot

Variety	Disease Severity (%)			Mean Disease Severity (%)
	2010	2011	2012	
<i>Saag Sarson</i>	0	0	5.5	1.8
PDG	25.0	25.0	35.0	28.3
DCS-1	25.0	25.0	32.0	27.3
Chinese <i>Sarson</i> (Check)	0	0	7.0	2.3

**Table 2:** Quality attributes and acceptability scoring of *Saag Sarson*

Variety	Dry weight (%)	Ascorbic acid (mg/100g fresh weight basis)	Minerals (%)	Total Chlorophyll (mg/g)	Oxalate Content (g/100g dry weight basis)	Appearance	Flavour	Consistency	Overall acceptability
<i>Saag Sarson</i>	5.39	346.0	0.17	9.05	0.04	8.75	8.88	8.50	8.75
PDG	6.27	325.0	0.13	28.31	0.04	8.25	8.13	8.25	8.25
DCS-1	6.03	312.0	0.11	12.54	0.05	7.50	8.00	8.00	8.00
RLM 1359	6.32	361.0	0.08	28.53	0.40	8.50	8.25	8.38	8.38
GSL-1	5.94	224.0	0.08	24.90	0.39	8.13	8.00	8.25	8.00
Chinese <i>Sarson</i> (Check)	5.46	322.0	0.13	10.06	0.06	8.22	8.09	8.32	8.32
Markfed sample	-	-	-	-	-	7.25	7.75	7.50	7.50
C. D. (P=0.05)	0.4	28.4	0.03	2.50	0.02	-	-	-	-

acceptability scores 8.75 by a panel of semi-trained judges on a nine point hedonic scale (Table 2). Samples were also compared with Markfed sample of *saag* and were rated better in its taste, appearance and texture than Markfed sample. The product prepared from this variety has satisfactory flavour, taste and consistency and confirms the FPO specifications.

**Reaction against diseases and insect-pests:** Upon screening against natural inoculation conditions, *Saag Sarson* gave disease severity percent of 1.8 against *alternaria* leaf spot (Table 3) which is less than the check variety 'Chinese *Sarson*'. There were no major insect-pests observed on this variety.