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Original Article**Yellow sarson (*Brassica rapa* var. *yellow sarson*): Uses and Improved Varieties****Hariom Kumar Sharma*, VV Singh, HS Meena and NR Bhardwaj**

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INTRODUCTION

Yellow sarson (*Brassica rapa* var. *yellow sarson*) is a self-pollinated Brassica species in family Brassicaceae. It is diploid crop Brassica species with chromosome number $2n=20$ (AA genome). *B. rapa* is one of the diploid progenitor of Indian mustard (*B. juncea*). In India it is cultivated as *rabi* crop in West Bengal, Odisha, Bihar, Uttarakhand, Himachal Pradesh, Bundelkhand region (Uttar Pradesh, Madhya Pradesh), parts of Punjab, Haryana, Gujarat, western Rajasthan and North-east states including Assam, Tripura, Meghalaya, Arunachal Pradesh. Its seeds are yellow in colour and have high oil content (43-45%) as compared to other Brassica species (Sharma et al., 2024). In general it attains moderate height varied from 120-150 cm. It flowers in about 50-60 days and matures in 100-130 days. Its seed yield varied from 12-15q/ ha. It is poor yielder as compared to allo-tetraploid Brassica species (*B. juncea*, *B. napus*, *B. carinata*). Wang et al. (2011) sequenced the genome of *B. rapa* accession *Chiifu-401-42* (Chinese cabbage) and reported the genome size of ~458 Mb (predicted genes=41,174).

Origin of yellow sarson

Carbonized seeds of *Brassica rapa* were found in the stomach of Tollund man (a mummified corpse of the fourth-century BCE found in Scandinavia). Central Asia, Afghanistan, and northwest part of the Indian subcontinent are considered as one of the independent centers of origin of *B. rapa*. Yellow sarson is might have evolved as a mutant from brown sarson. In *Sanskrit* it is known as "*Siddharth*". (Prakash et al., 2012).

Chemical composition of yellow sarson oil

Chauhan et al. (2007) reported chemical composition of yellow sarson varieties (protein: 17.8-20.1%, palmitic acid: 2.2-7.1%, oleic acid: 10.7-18.9%, linoleic acid: 0.5-12.8%, linolenic acid: 15.9-21.0%, eicosenoic acid: 3.9-9.5%, erucic acid: 39.6-57.3%). Major glucosinolates present in yellow sarson oil meal are gluconapin, glucobrassicinapin and glucobrassicin (Chauhan et al., 2002).

Uses and health benefits of mustard

Mustard seeds, oil, and greens have been used in cooking and as home remedies for more than a thousand years. Its oil contains mild flavor. Its seeds are used as whole, split and ground for many Indian preparations like chutney, pickles, curries and sauces. It is used as *tadka* for preparations of Indian curries. Its leaves are also used for making *Saag* and as salads. Its oil is used as edible oil and massage oil in Indian households due to balanced combination of unsaturated fatty acids. In some communities and traditions, yellow sarson seeds are used in worshipping to ward off negative energy.

It is used as condiment in processed foods like *hotdogs*, *salads*, *sandwiches*, *burgers*, *momos*, non-vegetarian foods (chicken, fish, and meat) all over the world. Mustard seed has a lot of protein, fibre, good combination of fatty acids, Vit. C, and B-complex hence it is good for health. It can help in relieving muscle pain, ringworm, breathing problems (asthma) and rheumatoid arthritis due to powerful healing properties and phytonutrients (Pots and Pans, 2024).

Varieties of yellow sarson

Till year 2023-24 a total of 21 varieties of yellow sarson have been notified in India (Table 1). T 151 (YST 151) was the first yellow sarson variety developed and notified in 1978 (Rai et al., 2023). Average seed yield of these varieties is about 12-15q/ha. Oil content in some of the varieties is up to 49%.

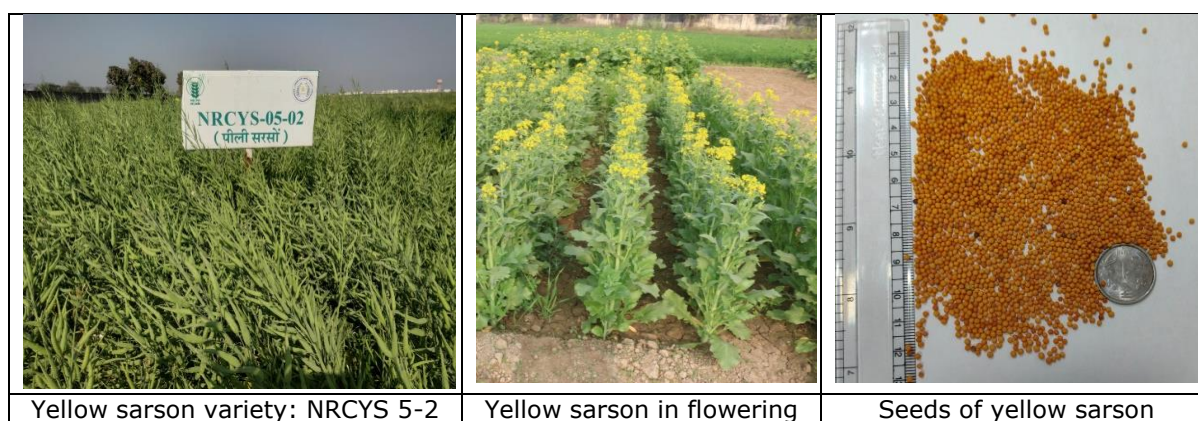


Fig. 1: Crop and seeds of yellow sarson

Table 1: List of yellow sarson varieties notified in India

S.N.	Variety	Year of notification	Maturity (days)	Oil content (%)	Average Yield (kg/ha)	Recommended for the states
1	T 151 (YST 151)	1978	150-155	46	1500-1800	Eastern parts, Bundelkhand, Uttar Pradesh
2	T 42	1978	120-125	47	1200-1500	Uttar Pradesh

3	YSPb 24	1978	145	45	1000	Haryana, Punjab, Rajasthan
4	K 88	1978	130-132	41-48	1400-1800	Uttar Pradesh
5	Benoy (B 9)	1982	90-95	46	852-1377	West Bengal, North east states
6	Patan Sarson (PS66)	1984	110	42	1200	Gujarat
7	Subinoy (YSB 19-7-C)	1991	97-103	45-46	1300-1650	West Bengal
8	Gujarat Sarson1 (GS 1)	1994	100-112	35-39	504-1596	Gujarat
9	Narendra Sarson 2 (NDYS2)	1997	113-127	43-45	1041-1296	Madhya Pradesh, Uttar Pradesh
10	Jhumka (NC1)	1998	90-95	46	643-1421	Eastern zone, West Bengal
11	Ragini (MYSL-203)	2001	111-116	43-46	1087-1939	Bihar, Eastern Uttar Pradesh and West Bengal
12	NRCYS 05-02	2009	94-118	38.2-46.5	1239-1715	Yellow sarson growing regions
13	YSH 0401	2009	115-120	43-45	1273-1651	Yellow sarson growing regions
14	Pant Pili Sarson-1 (PYS 1)	2010	110-115	39.6-48.8	1417-1765	Plains of Uttarakhand state
15	Pitambari (RYSK 05-02)	2010	110-115	40-49	1417-1765	Yellow sarson growing regions
16	JK Pukhraj (JKYS-2)	2016	115-120	-	1500-2000	Uttar Pradesh
17	Pant Sweta (PYS 2007-10)	2017	105-110	45	1600-2000	Uttarakhand
18	Pant Girija	2020	92-128	45.3	1400-1700	Plains of Uttarakhand state
19	Sanchita (YSWB 2014/2)	2020	95-97	44-45	1400-1600	West Bengal
20	Anushka (YSWB 2011-10-1)	2020	85	44-45	1400-1600	West Bengal
21	Pant Pili Sarson-2 (PYS-2016-8)	2022	109	45.1	1386	Suitable for plains of Uttarakhand

REFERENCES

- Chauhan JS, Bhadauria VPS, Singh M, Singh KH, Kumar A. 2007. Quality characteristics and their interrelationships in Indian rapeseed-mustard (*Brassica* sp) varieties. Ind J Agril Sci 77(9): 616-20.
- Chauhan JS, Tyagi MK, Kumar PR, Tyagi P, Singh M, Kumar S. 2002. Breeding for oil and seed meal quality in rapeseed-mustard in India - A Review. Agril Rev 23(2): 71-92.
- Pots and Pans (2024). <https://www.potsandpans.in/blogs/articles/yellow-mustard-health-benefits-uses-and-important-facts#:~:text=tight%2Dfitting%20lids.-,Health%20benefits%20of%20yellow%20mustards%3A,to%20treat%20cancer%20and%20diabetes.>
- Prakash S, Wu XM, Bhat SR. 2012. History, evolution and domestication of Brassica crops. Plant Breed Rev 35:19–84
- Rai PK, Sharma HK, Singh VV, Singh KH, Sharma P, Meena HS, Meena BL (2023) Notified rapeseed-mustard varieties in India. Published by ICAR-Directorate of Rapeseed-Mustard Research, Sear, Bharatpur-321303, Rajasthan, India. ISBN. 978–81–966257–1–9
- Sharma HK, Parmar N, Thakur AK, Singh VV, Kumar A, Meena HS, Sharma P, Singh KH, Rai PK. 2024. Deciphering genetic diversity and population structure in ex-situ conserved Brassica rapa var. yellow sarson germplasm using morphological traits and simple sequence repeat (SSR) markers. Genet Resour Crop Evol. <https://doi.org/10.1007/s10722-024-02051-x>
- Wang X, Wang H, Wang J et al. 2011. The genome of the mesopolyploid crop species *Brassica rapa*. Nat Genet 43:1035–1039.