

Recent vegetable varieties from ICAR-IIVR, Varanasi

With the increasing awareness about importance of vegetables for nutritional security, their demand is also increasing very fast, but due to burgeoning population it is not feasible to increase the area proportionately. The enhancement of productivity is the option to meet this fast increasing demand. Development of improved vegetable varieties is imperative to meet the increasing demand and for diversifying the vegetable basket. In view of this, the Indian Institute of Vegetable Research, Varanasi has constantly been working to develop improved varieties in various vegetable crops.

THE varieties developed and released by the institute in last five years have been summarized here.

SOLANACEOUS VEGETABLES

Tomato

Kashi Aman: Fruits attractive red, round, very firm with a pericarp thickness of 5.2-5.7 mm. Average fruit weight 80-110 g. Resistant to ToLCVD. Variety carries an allele of *Ty-3* gene. Yield 500-600 q/ha. Recommended for cultivation in Punjab, Uttar Pradesh, Bihar, Jharkhand and notified vide gazette notification number 261(E), 16.01.2018.

Kashi Amul: Fruits round and firm with a pericarp thickness of 6-6.5 mm. Average fruit weight 90-115 g in initial three pickings. Resistant to ToLCVD, Yield 500-600 q/ha. Recommended for cultivation in Karnataka, Tamil Nadu, Kerala and notified vide gazette notification number 261(E), 16.01.2018.

Kashi Chayan: Fruits round having dark green shoulder. Average fruit weight 100-120 g. Tolerant to ToLCVD carrying *Ty3* gene. Yield 525-550 q/ha. Recommended for cultivation in Uttar Pradesh, Bihar, Jharkhand, Punjab, Madhya Pradesh, Maharashtra, Goa and notified vide gazette notification number 1480 (E), 01.04.2021.

Brinjal

Kashi Himani: The fruits are shiny white with less seeds. Tolerant to fruit and shoot borer, moisture deficit and lodging. Yield 400-430 q/h. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number S.O. 692(E), dated 05.02.2019.

Kashi Vijay: Plant bushy with sturdy stems. Fruits medium long, purplish pink. Tolerant to *Phomopsis* blight and *Fusarium* wilt in field conditions. Yield 470-530 q/ha.

Recommended for cultivation in Uttar Pradesh, Bihar, Jharkhand, Punjab and notified vide gazette notification number 1480 (E), 01.04.2021.

Kashi Brinjal Green Round: Fruits green round, shiny with green calyx. Average fruit weight 225-250 g having less seeds and suitable for *bharta* preparation. Yield 580-600 q/ha. Recommended for cultivation in Punjab, Uttar Pradesh, Bihar, Jharkhand and notified vide gazette notification number 3254 (E), 20.07.2022.

Kashi Manohar (hyb): Fruits medium long, light purple having less seeds with green calyx. Yield 625-650 q/ha. 50% flowering at 48 days after transplanting. Recommended for cultivation in Madhya Pradesh, Maharashtra, Goa and notified vide gazette notification number 3254 (E), 20.07.2022.

Chilli

Kashi Abha: Fruits short, stout with blunt apex; highly pungent. Tolerant to biotic (anthracnose, CLCV, thrips and mites) and abiotic stress (low and high temperature), yield 150 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number S.O. 692(E), dated 05.02.2019.

Kashi Ratna (hyb): CMS based F_1 hybrid suitable for green chilli purpose. Tolerant to anthracnose and thrips. Semi erect, early maturing hybrid. Yield 200-220 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number S.O. 692(E), dated 05.02.2019.

Kashi Tej (hyb): CMS based F_1 hybrid dual purpose (green and dry), early maturing, highly pungent. Tolerant to Anthracnose, fruit rot disease and thrips. Yield 135-145 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number S.O. 692(E), dated 05.02.2019.

LEGUMINOUS VEGETABLES

Cowpea

Kashi Vishan: Bush type variety with erect growth habit and photo-insensitivity. Pods are 32-35 cm long, dark green, tender and free from parchment layer. Yield 140-160 q/ha. Recommended for cultivation in Punjab, Uttar Pradesh, Bihar, Jharkhand and notified vide gazette notification number 3254 (E), 20.07.2022.

Indian Bean

Kashi Sheetal: Semi-pole type variety, tolerant to low temperature and DYMV. Fruits greenish and flat. Yield 180-200 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Khushal: Semi-pole type variety. Fruits shiny, dark green, slightly curved, glabrous, containing 4-5 coffee colour seed. Tolerant to high temperature and DYMV. Yield 350-380 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Bauni Sem-3: First picking in 80-85 days. Peak fruiting from December to March. Tolerant to high temperature and DYMV. Yield 350-380 q/ha. Yield 360 q/ha in five pickings. Recommended for cultivation in Rajasthan, Gujarat, Haryana, Delhi, Madhya Pradesh, Maharashtra, Goa, Karnataka, Tamil Nadu, Kerala, Puducherry and notified vide gazette notification number 3254 (E), 20.07.2022.

Kashi Bauni Sem-9: First picking in 70-75 days. Peak fruiting from December to March. Tolerant to high temperature and DYMV. Yield 350-380 q/ha. Yield 350 q/ha in five pickings. Recommended for cultivation in Madhya Pradesh, Maharashtra and Goa, and notified vide gazette notification number 3254 (E), 20.07.2022.

French bean

Kashi Rajhans: Bush type white seeded variety. Pods dark green, thin, round, slightly curved, fleshy and free from parchment. Bushy variety has dark green, round slightly curved fleshy, free from parchment and smooth surface pod. Tolerant to French bean golden yellow mosaic virus. Yield 230-260 q/h. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Sampann: Bush type late maturing variety having brown seeds. Pods round and light green. Tolerant to French bean golden yellow mosaic virus. Yield 250-300 q/h. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Baingani: Pods green for first 5-7 days, and turn completely purple in the next 8-10 days. Pod length 14-15 cm. Flowers 70-80 days after sowing. Pod yield 150-170 q/ha. Recommended for cultivation in Jammu & Kashmir, Himachal Pradesh, Uttarakhand, Madhya Pradesh, Maharashtra, Goa, Karnataka, Tamil Nadu, Kerala and Puducherry, and notified vide gazette notification number 1480 (E) dated 01.04.2021.

Kashi Agrim: Bush-type variety. Bears purplish flowers. Pods bright green, fleshy, tender, straight, cylindrical and free from parchment. Yield 125-150 q/ha. Recommended for cultivation in, Jammu & Kashmir, Himachal Pradesh and Uttarakhand, and notified vide gazette notification number 3254 (E) dated 20.07.2022.

ROOT VEGETABLES

Carrot

Kashi Krishna: Attractive black coloured roots along with self-coloured core. Tolerant to bolting, fewer secondary roots/scars. Rich source of anthocyanin, phenolics and antioxidants. Root yield 200-220 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Arun: Roots are attractive red in colour, 21-23 cm long and triangular in shape. Ready to harvest in 90-100 days. Root yield 300-350 q/ha. Recommended for cultivation in Madhya Pradesh, Maharashtra, Goa, Karnataka, Tamil Nadu, Kerala and Puducherry, and notified vide gazette notification number 3254 dated 20.07.2022.

Radish

Kashi Mooli 40: Roots of icicle shape, attractive white colour and less pithiness. Tolerant to high temperature (35-42°C), suitable for summer cultivation, delayed bolting. Root yield 200-230 q/ha during summer season. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Lohit: Attractive red colour roots, icicle root shape, suitable for salad dressing, excellent source of antioxidants. Tolerant to pithiness. Root yield 400-450 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Aardra: Roots white, tapered or icicle shaped, 22-24 cm long. Leaves dark green and soft. Temperature of 12-25°C suitable for proper plant growth and root development. Root yield 340-360 q/ha. Recommended for cultivation in West Bengal, Assam and notified vide gazette notification number 1480 (E), dated 01.04.2021.

CUCURBITACEOUS VEGETABLES

Bitter gourd

Kashi Mayuri: Comparatively less seeded (10-15/fruit) with uniform shape, size and higher shelf life. Suitable for distant market. Capable of fruiting during hot summer (> 35°C). Tolerant to Anthracnose, Downy mildew and Mosaic disease. Yield 180-200 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Bottle gourd

Kashi Kirti: Fruits are green, small, cylindrical shape, (Gutka type). Resistant to Downy mildew. Suitable

for distant marketing and transportation due to better post-harvest life. Yield 440-460 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Kundal: Attractive pear shaped green fruits, medium in size, suitable for July to September sowing. Number of fruits 12-14 with average fruit weight of 1.3 to 1.5 kg. Resistant to Downy mildew. Yield 460-480 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Kiran: Light green attractive round fruits, tolerant to Downy mildew. Fruit weight 600-700 g. Number of fruits 13-14/plant. Yield 450-480 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Cucumber

Kashi Nutan (hyb): Fruits cylindrical, long, light green with mottling at peduncle side of fruit. Resistant to Downy mildew. Suitable for rainy and summer season both. Yield 165-185 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Longmelon

Kashi Santushti: Fruit length 30 cm, average fruit weight 30-60 g, fruit skin colour light green, smooth prominent ridges, crispy. Yield 150-200 q/ha. Recommended for cultivation in Uttar Pradesh, Bihar, Jharkhand, Punjab, and notified vide gazette notification number 1480 (E) dated 01.04.2021.

Pointed gourd

Kashi Amulya: Fruits fleshy, attractive light green with sparsely distributed white stripes. Less seeded (5-8 seed/fruit as compared to 25-30 seeds in normal variety), suitable for confectionary purpose. Yield 200-220 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Suphal: Fruits light green with mild stripes, fleshy with soft seed. Fruit retention in plant for long duration. Keeping quality better, suitable for culinary purpose and sweet making. Yield 180-200 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Pumpkin

Kashi Shishir (hyb): Early maturing hybrid with small round and mottled green fruits (2-2.25 kg), 3-4 fruits/plant. Suitable for rainy and summer season both. Yield 380-420 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Basant: An early maturing variety, having fruit weight 2.5-3.0 kg. Number of fruits/plant 3.0 to 4.5 having flesh thickness 3.0-3.25 cm. the carotenoid content of fruit is 2.6 mg/100 g. Yield 350-400 q/ha. Recommended for cultivation in Chhattisgarh, Odisha and Andhra Pradesh

and notified vide gazette notification number S3254 (E), dated 20.07.2022.

Satputia

Kashi Khushi: Hermaphrodite flower with cluster bearing fruiting habit. Early maturing variety having light green fruit with ten dark superficial and continuous longitudinal ridges. Bears 130-150 fruits/plant. Yield 120-130 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Sponge gourd

Kashi Jyoti: Light green fruits of 100-150 g, resistant to Sponge gourd mosaic virus and tolerant to Downy mildew and Root knot nematode. Yield 150-180 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Rakshita (hyb): Fruits dark green, 1st male flower appears on 4-6th node while 1st female flower appear on 8-10th node. Average number of fruits/plant ranges from 12-14. Fruits become ready to harvest at 48-52 days after sowing. Resistant to Downy mildew and Sponge gourd mosaic virus under field condition. Recommended for cultivation in Punjab, Uttar Pradesh, Bihar, Jharkhand and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Saumya (hyb): Attractive dark green medium fruits. This is suitable for river bed cultivation. Resistant to Sponge gourd mosaic virus and tolerant to Downy and Powdery mildew under field condition. Yield 185-195 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Shreya: Fruits cylindrical and dark green. Plants start flowering at 45 days after planting. Ready for harvest at 50-55 days after sowing. Resistant to Downy mildew, Powdery mildew and Sponge Gourd Mosaic Virus under field condition. Tolerant to leaf minor, fruit fly and red pumpkin beetle. Yield 150-200 q/ha. Recommended for cultivation in Punjab, Uttar Pradesh, Bihar and Jharkhand and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Kalyani: Fruiting at every node. Fruits dark green, 150-175 g, long straight (20-30 cm). First harvest in 42-45 days from date of sowing. Resistant to Sponge gourd mosaic and tolerant to Downy mildew under field condition. Yield 150-200 q/ha. Recommended for Uttar Pradesh, Bihar, Punjab, Jharkhand, Rajasthan, Gujarat, Haryana and Delhi and notified vide gazette notification number 3254 (E), 20.07.2022.

Summer squash

Kashi Shubhangi: Bushy variety bearing 8-10 medium size elongated dark green shining fruit with average fruit weight 800-900 g. Resistant to Downy mildew. Most suitable for autumn season. Yield 600-650 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Vegetable varieties from ICAR-IIVR



Kashi Aman



Kashi Amul



Kashi Chayan



Kashi Himani



Kashi Vijay



Kashi Brinjal
Green Round



Kashi Manohar (hyb)



Kashi Abha



Kashi Ratna (hyb)



Kashi Tej (hyb)



Kashi Vishan



Kashi Sheetal



Kashi Khushal



Kashi Bauni Sem-3



Kashi Bauni Sem-9



Kashi Rajhans



Kashi Sampann



Kashi Baingani



Kashi Agrim



Kashi Krishna



Kashi Arun



Kashi Mooli-40



Kashi Lohit



Kashi Aardra



Kashi Mayuri



Kashi Kirti



Kashi Kundal



Kashi Kiran



Kashi Nutan (hyb)



Kashi Santushti



Kashi Amulya



Kashi Suphal



Kashi Shishir (hyb)



Kashi Basant



Kashi Khushi



Kashi Jyoti



Kashi Rakshita (hyb)



Kashi Saumya (hyb)



Kashi Shreya



Kashi Kalyani



Kashi Shubhangi



Kashi Suhavani



Kashi Bathua-2



Kashi Bathua-4



Kashi Poi-1



Kashi Poi-3



Kashi Poi-2



Kashi Gobhi-25



Kashi Chaman



Kashi Lalima



Kashi Shristi (hyb)

LEAFY VEGETABLES

Amaranthus

Kashi Suhavani: Soft succulent green leaf with delayed flowering. Suitable for growing during summer and rainy season. Rich in protein content (15.50% on dry wt basis). Tolerant to white rust. Yield 300-330 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Chenopod (Bathua)

Kashi Bathua-2: Plant height 180-195 cm at 160 days after sowing, upright growth habit with green leaves. Excellent source of folic acid, minerals, vitamin A, vitamin C (21.2% higher), phenolics (30.0% higher) and antioxidants (43.1% higher) over the check variety. Yield 310-320 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Bathua-4: Upright growth habit with purplish green leaves and petiole colour. Excellent source of vitamin C, vitamin A, folic acid, minerals, phenolics and antioxidants. Yield 340-360 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Poi (Indian Spinach)

Kashi Poi-1: Procumbent growth habit, soft and lush green shoots with green succulent leaves, early picking with delayed flowering. Tolerant to water logging up to 4-5 days. Excellent source of Antioxidants 2(6.5 μ mol TE/g FW) with low oxalate content (347.7 mg/100 g FW). First picking 40 days after transplanting and continues up to 220-230 days at 20-30 days' interval. Yield 490-510 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Poi-2: Bush type, green stems and leaves. Suitable for making saag, pakode, soup, etc. Excellent source of Antioxidant 24.8 μ mol TE/g FW with slightly lower oxalate content 566.0 mg/100 g FW. First picking 38-40 days after transplanting and continues up to 140-150 days at 20-30 days' interval. Yield 630-640 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Poi-3: Fast growing plants having twinning growth habit, red stem and mid ribs, high betalain content, suitable for year round cultivation. Excellent source of Carotenoids 635.9 mg/100 g FW with lower oxalate content (522.3 mg/100 g FW). First picking 40 days after transplanting and continues up to 240-250 days at 20-25 days' interval. Yield 610-620 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Cauliflower

Kashi Gobhi-25: Indian/tropical cauliflower, November maturity (first fortnight of November around 25°C temperature). White compact and hemispherical curd free from riceyness, leafiness and fuzziness. Marketable curd weight 600-700 g. Yield 250-280 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Okra

Kashi Chaman: Plant medium tall. Flowering starts in 39-41 days after sowing and fruiting period lasts from 45-100 days. Fruits dark green with fruit length of 11-14 cm. Plants are resistant to YVMV and OLECV under field conditions. Yield 150-160 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Lalima: Plants medium tall with short

internodes. Fruits reddish purple. Rich in anthocyanin and phenolics. Tolerant to YVMV and OLCV. Yield 140-150 q/ha. Recommended for cultivation in Uttar Pradesh and notified vide gazette notification number 692(E), dated 05.02.2019.

Kashi Shristi (hyb): Medium tall with short internodes and 2-3 narrow angled branches. Fruits dark green, medium length. Tolerant to YVMV. Yield 180-190 q/ha. Recommended for cultivation in Uttar Pradesh and

notified vide gazette notification number 692(E), dated 05.02.2019.

For further interaction, please write to:

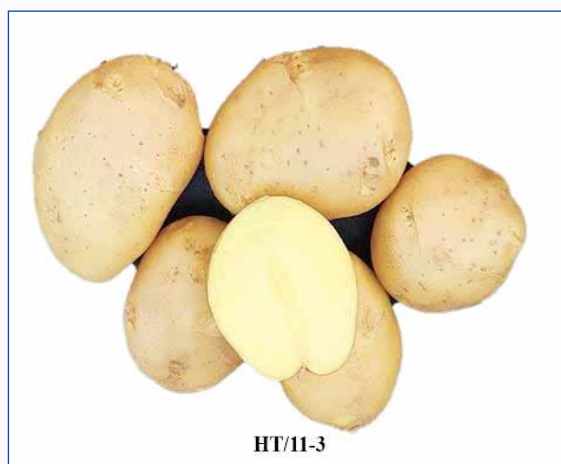
P M Singh (Principal Scientist), Division of Crop Improvement, ICAR-IIVR, Varanasi, Uttar Pradesh 221 305. *Corresponding author email: pmsiivr@gmail.com

Improved varieties of Potato

Potato: MP/09-45 has been identified for cultivation in the Northern, Central and Eastern plains of India. The clone has white cream ovoid tubers with shallow eyes and creamy flesh. The average yield of the clone is 35 t/ha and tuber dry-matter of 21%. The clone is medium maturing (90-100 days). It is suitable for processing into chips.

HT/11-3 is heat-tolerant variety with white cream peel, creamy pulp, oval and shallow eyes on tubers. The tuber productivity of the clone is 35 t/ha which was 18% higher than the present heat-tolerant variety Kufri Surya and 12% higher than Kufri Kiran. The clone is early medium to medium (85-90 days) maturing. It possesses 19% tuber dry-matter and has tolerance to mite and hopper burn, which are the primary insect-pests during early-season crops. It has been identified for Uttar Pradesh, Haryana, Punjab, Uttarakhand (early crop planting) Chhattisgarh, Gujarat, Rajasthan and Odisha (main crop planting). Therefore, this variety is recommended for potato production as the early crop in northern plains of India and as the main crop in central plain and plateau regions.

WS/07-113 has been identified as a climate resilient variety with field tolerance to less soil moisture stress and recommended for cultivation in Central and Eastern plains of India. It has white cream ovoid tubers with cream flesh. The productivity of this variety is 32 t/ha under water stress conditions. The clone is medium maturing (90-100 days).



Source: ICAR Annual Report 2022-23