

Arka Vikram: An early, high-yielding hybrid of ridge gourd

Arka Vikram has been released and notified by the Central Sub-Committee on Crop Standards, Notification and Release of Varieties for Horticultural Crops for cultivation in Zone IV (Punjab, Uttar Pradesh, Bihar and Jharkhand) and VIII (Karnataka, Tamil Nadu and Kerala) at National level. This is a very early hybrid, produces first female flower at 9th node in 40 days after sowing and takes 46 days for first picking. Fruits are green, long, tender, yields 29-42 t/ha in 120-135 days crop duration. The growers will be benefitted by this hybrid because of its early fruiting, better nutritional quality and yield.

RIDGE gourd (*Luffa acutangula* (Roxb.) L.) is an important cucurbitaceous summer vegetable of South East Asia and few African countries. Ridge gourd fruits are very nutritious and good source of vitamin A, calcium, phosphorus, ascorbic acid, iron and fibre. Arka Vikram has been developed by the hybridization between IIHR-6-1-1 and IIHR-53-1-3. Vine length is 448 cm, early flowering and first female flower appears at 9th node from the base of the vine. It takes 40 days for the first female flower appearance and 46 days for first picking of fruits. Produces green, long (30-35 cm), tender fruits. Excellent cooking quality, nutritionally rich in antioxidant activity (12.29 mg/100 g fresh weight of fruit) and minerals like potassium (5.65% dry weight basis), calcium (0.62% dry weight basis), iron (83.95 ppm dry weight basis), zinc (44.9 ppm dry weight basis) and manganese (6.8 ppm dry weight basis). Yields 29-42 t/ha in 120-135 days duration with an average



Arka Vikram, ridge gourd hybrid

yield of 34 t/ha. This is 32% higher yield than the popular commercial hybrid, Naga; 38% higher than the hybrid, Mallika. Weekly application of WSF@150:90:150 kg NPK/ha recorded maximum yield of 53.73 t/ha with a maximum B:C ratio of 2.22. Arka Vikram has been tested over 18 locations across the country in various agro-climatic zones during 2017-2020. Mean performance of Arka Vikram in zone 4 over 6 locations was 153.89 q/ha with an increase of 11.1% over the check variety, Pusa Nasdar/Pusa Nutan which yielded 138.49 q/ha. In Zone 8, Arka Vikram average performance was 291.15q/ha against check varieties (233.67 q/ha) recording 24.6% increase over checks (Table 1).

Adoption of Arka Vikram

So far, Arka Vikram, a high yielding ridge gourd hybrid cultivation is taken up in Karnataka, Andhra Pradesh, Telangana by 150-200 farmers covering 800 acres of land.

Table 1. Zone wise yield performance of ridge gourd hybrid, Arka Vikram (q/ha)

Zone	No. of locations	Arka Vikram	Check Pusa Nasdar/Pusa Nutan	Increase over check (%)
IV (Punjab, Uttar Pradesh, Bihar, Jharkhand)	6	153.89	138.49	11.11
VIII (Karnataka, Tamil Nadu and Kerala)	2	291.15	233.67	24.60

Source: AICRP on VC Annual reports of 2017-18, 2018-19, and 2019-20

Table 2. Integrated crop management practices for ridge gourd hybrid, Arka Vikram (Area: 1 ha/2.5 acres)

Stage	Operations
Nursery/sowing	Raise the seedlings using portrays under nylon net /poly house Seed treatment with Seed Pro (<i>Trichoderma harzianum</i> + <i>Bacillus subtilis</i>) @ 10 g/kg seed)
15 days before sowing/ planting main crop	Raise maize/Jowar/Bajra as border crop
Bed preparation	Basal dose fertilizer Application: 150.0:90.0:150.0 kg N:P ₂ O ₅ :K ₂ O per hectare Apply 37.5-22.5-37.5 kg N: P: K (81.0 kg urea +141.0 kg Single super phosphate + 63.0 kg Muriate of potash). Mix well and level the beds properly. Apply farmyard manure (25.0 tonnes/ha) and neem cake (625 kg/ha) along with above mentioned fertilizers. Soil application of Farmyard manure/neem cake enriched with IIHR biopesticides namely <i>Trichoderma harzianum</i> , <i>Pseudomonas fluorescens</i> and <i>Paecilomyces lilacinus</i>
10 DAS	Drenching with Arka Microbial Consortium (AMC) @ 20 g/L Collect and destroy mined leaves
15 DAS	Foliar spray with Arka neem soap @ 10 g per litre
15-30 DAS	7.50 kg 19-19-19 +1.90 kg SOP + 3.75 kg urea per fertigation (6 fertigations at 3 days interval) Installation of blue and yellow sticky traps
30 DAS	Erect cue lure traps before flowering Recharge the cue lure traps at specified time intervals (@ 25 to 30 days interval) Apply bait splashes using jaggery mix (jaggery 100 g + yeast 20 g + deltamethrin 2 ml/L) on the border crop and also on the lower canopy of the plant at weekly interval from bud initiation onwards Foliar spray with Thiomethaxam 25% WG @ 0.5 g/litre Foliar sprays with mancozeb 75% WP (2g/l) or Zineb 75% WP (2g/l) to control downy mildew Foliar spray with Arka vegetable special spray @ 3 g/litre
33-51 DAS	13.5 kg 19-19-19 + 3.75 kg SOP + 3.75 kg urea kg per fertigation (7 fertigations, twice a week)
45 DAS	Arka vegetable special spray @ 3 g/litre Foliar spray with Arka pongamia soap @ 10 g/litre or Azadirachtin 10,000 ppm @ 3 ml per litre
60 DAS	Foliar spray of carbendazim 50% WP (0.5 g/l) to prevent fungal fruit rots and powdery mildew Arka vegetable special foliar spray @ 3 g/litre
54-90 DAS	16.50 kg 19-19-19 + 4.0 kg SOP + 3.75 kg urea per fertigation (13 fertigations, twice a week)

Performance of Arka Vikram, ridge gourd hybrid at Ivarakhandapura, Bengaluru North District, Karnataka

Mr. J. S. Gowda, a farmer from Ivarakhandapura, Bengaluru North district, Karnataka had grown Arka Vikram in one acre plot during *khari* 2020. He said

that the fruits are long, straight, green with good quality and very much preferred in the Bengaluru markets. He harvested a fruit yield of about 7 t/half acre and sold @ ₹30/kg. He got a gross return of ₹2.1 lakhs and after deducting the cost of cultivation of ₹50,000, his net returns were ₹1.60 lakhs/half an acre over a period of 3.0 months.



Performance of Ridge gourd hybrid, Arka Vikram in Mr. JS Gowda's field at Ivarakhandapura, Bengaluru, North District, Karnataka



Performance of Ridge gourd hybrid, Arka Vikram in Mr. Lakshminarayana Reddy field at Parlapadu

Performance of Arka Vikram, ridge gourd hybrid at Parlapadu village, Kadapa District, Andhra Pradesh

Mr. Lakshmi Narayana Reddy had grown ridge gourd hybrid, Arka Vikram in 1.75 acre plot during *kharif* 2019 at Parlapadu Village, Kadapa, Andhra Pradesh. He was very much impressed with the fruit quality and yield performance of this hybrid and got first crop after 45 days itself. He got a yield about 14.5 tonnes/1.75 acre in 12-14 pickings. He sold the fresh fruits in the markets

at ₹18 per kg which fetched him about ₹2.66 lakhs. His expenditure was ₹1.3 lakhs/1.75 acre with net returns of ₹1.36 lakhs/1.75 acres over a period of 3.0 months.

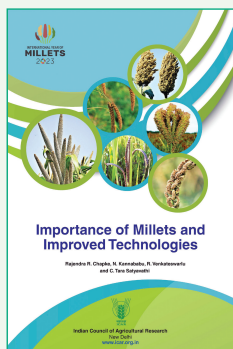
For further interaction, please write to:

Dr B Varalakshmi, ICAR-Indian Institute of Horticultural Research, Hessaraghatta Lake Post, Bengaluru, Karnataka 560 089.

*Corresponding author: Varalakshmi.B@icar.gov.in



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