

Technology developed for farming and scientific community (Last 5 years)

Technology developed in Agronomy:

Sr. No.	Year	Recommendations
1.	2023	<p>The farmers of middle Gujarat agro climatic zone growing Rice -Wheat cropping sequence are recommended to adopt any one of the following integrated nutrient management practices for getting higher yield and net return.</p> <p>50% RDF + 50% through castor cake (16 kg N, 12.50 kg P₂O₅ and about 900 kg castor cake/ha as basal), remaining 16 kg N/ha at tillering and 8 kg N/ha at panicle initiation stage through inorganic sources OR</p> <p>75% RDF + 25% through castor cake (24 kg N, 18.75 kg P₂O₅ and about 450 kg castor cake/ha as basal), remaining 24 kg N/ha at tillering and 12 kg N/ha at panicle initiation stage through inorganic sources</p> <p>Moreover, apply only 25% RDF (15 kg N and 15 kg P₂O₅) as basal, remaining 15 kg N/ha at after first irrigation) along with any one of the above integrated nutrient management practices in succeeding wheat crop.</p>
2.	2022	<p>The farmers of middle Gujarat agro-climatic zone growing rice in kharif season are recommended to adopt Direct Seeded Rice method (DSR) and sow the transplanted rice variety Gurjari or Mahisagar during third week of June to first week of July for obtaining higher yield and net return beside saving of cost for nursery raising and transplanting in field.</p> <p>The farmers of middle Gujarat agro climatic zone growing late maturing rice varieties are recommended to adopt any one of the following integrated nutrient management practices for getting higher yield and net return.</p> <ul style="list-style-type: none"> • 75% RDN + 25% RDN through castor cake (42 kg N, 18 kg P₂O₅ and about 833 kg castor cake/ha as basal, remaining 42 kg N/ha at tillering and 21 kg N/ha at panicle initiation stages) <p style="text-align: center;">OR</p> <ul style="list-style-type: none"> • 50% RDN + 50% RDN through FYM (28 kg N, 13 kg P₂O₅ and about 14 tone FYM/ha as basal, remaining 28 kg N/ha at tillering and 14 kg N/ha at panicle initiation stages) <p style="text-align: center;">OR</p> <p>50% RDN + 50% RDN through castor cake (28 kg N, 13 kg P₂O₅ and about 1667 kg castor cake/ha as basal, remaining 28 kg N/ha at tillering and 14 kg N/ha at panicle initiation stages)</p> <p>The farmers of middle Gujarat agro climatic zone are recommended to sow the seed in summer rice nursery during the 1st week of December under 25 micron transparent poly tunnel up to 40 to 50 DAS to get early transplantable seedlings, higher number of seedlings and net return as compare to open field condition.</p>

3.	2021	<p>The farmers of AES-II (Thasara area) and AES-V (Navagam area) of middle Gujarat Agro Climatic Zone are recommended to adopt any of the following in 10 m₂ area of summer rice nursery to get higher number of transplantable seedlings at 45 to 55 DAS and net return.</p> <ol style="list-style-type: none"> 1. 20 kg FYM + gibberellic acid 10 mg/L + humic acid 1.66 g/L (foliar spray 15 DAS) + 2% urea & 0.2% FeSO₄ foliar spray at 30 DAS <p style="text-align: center;">or</p> <ol style="list-style-type: none"> 2. 20 kg FYM + top dressing 250 g AS, 2 times at 15 DAS interval + 2% urea and 0.2 % FeSO₄ foliar spray at 30 DAS <p style="text-align: center;">or</p> <ol style="list-style-type: none"> 3. 10 kg FYM + 5 kg VC + top dressing 250 g AS at 15 DAS + 2% urea and 0.2% FeSO₄ solution foliar spray at 30 DAS
4.	2020	<p>The farmers of AES-V (Nawagam area) and AES-II (Thasara area) of Middle Gujarat Agro climatic Zone II are recommended to apply 10 t FYM/ha along with 100 kg N/ha (40% basal, 40% tillering and 20% panicle initiation stage) in early maturing summer rice varieties either Gurjari or Mahisagar to get higher yield and net return.</p>
5.	2019	<p>The farmers of Nawagam and Thasara area of middle Gujarat agro climatic zone are advised to apply 10 t FYM/ha along with 100 kg N/ha (40% basal, 40% tillering and 20% panicle initiation stage) in early maturing rice varieties either Gurjari or Mahisagar to get higher yield and net return. Whereas, the farmers of Dabhoi area growing early maturing rice variety Gurjari are advised to apply 10 t FYM/ha along with 120 kg N/ha (40% basal, 40% tillering and 20% panicle initiation stage) to get higher yield and net return.</p>
6.	2017	<p>The farmers of middle Gujarat Agro Climatic Zone-III are advised to use Leaf Color Chart critical score “4” for nitrogen management in mid late maturing variety GAR-13 to get higher net return and to save 17% Nitrogen</p>

Technology developed in Entomology:

Sr. No.	Year	Recommendations
1.	2023	In kharif (end of July to August) transplanted rice, stem borer, leaf folder and white backed plant hopper population has congenial condition due to low minimum temperature (°C) and high sunshine hours. The overall peak infestation of stem borer, leaf folder occurs during 45th SMW, while maximum population of WBPH occur during 41st SMW (2024).
2.	2022	The rice growers of Gujarat are recommended to use ready-mix granular insecticide chlorantraniliprole 0.50% + thiamethoxam 1.00% GR, 6.0 kg or chlorantraniliprole 0.4% GR, 10 kg or flubendiamide 0.7% GR, 14.28 kg/ha mixed with sand (25 kg/ha) and apply at 40 days after transplanting for effective management of yellow stem borer, leaf folder and white backed plant hopper.
3.	2021	The rice growers of middle Gujarat Agro-climatic zone are recommended to apply two sprays of chlorantraniliprole 18.5 SC, 0.006% (3 ml/10 L water) or cartap hydrochloride 75 SG, 0.075% (10 g/10 L water) or ready-mix insecticide flubendiamide 4 + buprofezin 20 SC, 0.042% (17.5 ml/10 L water), first at the initiation of insect-pests and second after 15 days for effective management of yellow stem borer and leaf folder (Interval between last spray and harvest should be kept minimum 47, 35 and 30 days, respectively).
4.	2020	The rice growers of middle Gujarat Agro-climatic zone are advised to apply two sprays of pymetrozine 50 WG, 0.037% (7.5 g/10 L of water), first spray at the initiation of white backed plant hoppers (WBPH) and second after 15 days for effective management of WBPH in rice. Interval between last spray and harvest should be minimum 19 days.
5.		Two sprays of sulfoxaflor 24 SC, 0.043% (18.2 ml/10 litre of water, 218.7 g a.i./ha), first spray at the initiation of white backed plant hoppers (WBPH) and second after 15 days for effective management of WBPH in rice.

Technologies developed in Plant Pathology: (5)

Sr. No.	Year	Recommendations
1.	2022	Rice growers of Gujarat are recommended to apply two sprays of any of the following ready-mix fungicides, propiconazole 10.7% + tricyclazole 34.2% SE, 0.045% (10 ml/ 10 litre of water) OR tebuconazole 50% + trifloxystrobin 25% WG, 0.030% (4 g/ 10 litre of water), first at the appearance of the disease and second after 15 days of the first spray for effective management of blast disease.
2.	2021	Rice growers of middle Gujarat Agro-climatic Zone are advised to apply two sprays of ready-mix fungicides, tebuconazole 50% + trifloxystrobin 25% WG, 0.060% (8 g/ 10 litre of water) (PHI 35 days) OR picoxystrobin 7.05% + propiconazole 11.7% SC, 0.037% (20 ml/ 10 litre of water) (PHI 24 days), first at 50% flowering stage and second at the time of 100% flowering stage for effective management of false smut.
3.	2021	Rice genotypes viz., NWGR-11048 and NWGR-12016 found resistant against grain discolouration under natural conditions in the field. These genotypes can be used in breeding programme for developing resistant varieties.
4.	2021	Rice genotypes viz., NWGR-14035, NWGR-14084 and NWGR-11002 shown resistant reaction against bacterial leaf blight (<i>Xanthomonas oryzae</i> pv. <i>oryzae</i>) under artificial inoculation and high disease pressure conditions in the field. These genotypes can be used in breeding programme for developing resistant varieties.
5.	2018	Rice genotypes viz., IET- 24486, IET- 25400, IET- 25421, Chittimuthyalu and Sabita were found to have resistant reaction against Bacterial blight (<i>Xanthomonas oryzae</i> pv. <i>oryzae</i>) under artificial inoculation and high disease pressure conditions in the field. They can be used in breeding programme for developing resistant varieties.