

## Technology developed and recommended

Sr. No	Recommendations
1	<p><b>Effect of sowing periods on the incidence of castor capsule borer, <i>Dichocrosis punctiferalis</i> Guenee (2023)</b></p> <p>Farmers of middle Gujarat growing castor are recommended to sow the crop during 4<sup>th</sup> week of August to 2<sup>nd</sup> week of September to minimize the incidence of capsule borer, <i>Dichocrosis punctiferalis</i> and securing higher yield.</p>
2	<p><b>Response of castor (GCH 10) to spacing and nitrogen under irrigated condition (2023)</b></p> <p>The farmers of middle Gujarat agro-climatic zone are recommended to sow castor (GCH 10) at the spacing of 120 X 60 cm and fertilize the crop with 120 kg N/ha and 1L/ha <i>Azotobacter</i> liquid bio-fertilizer mixed with FYM as basal. Nitrogen should be applied in four equal splits <i>i.e.</i> 30 kg N/ha in basal, at 30 DAS, at 60 DAS and at 90 DAS to get higher yield.</p>
3	<p><b>Effect of date of sowing on incidence of fall armyworm, <i>Spodoptera frugiperda</i> (J. E. Smith) infesting maize (2022)</b></p> <p>Sweet corn growers of Gujarat are recommended to sow the crop during 3<sup>rd</sup> week of November (<i>Rabi</i> season) as the infestation of fall armyworm, <i>Spodoptera frugiperda</i> (J. E. Smith) is relatively low and higher green cob as well as fodder yield can be obtained.</p>
4	<p><b>Population dynamics of major insect pests of castor (2022)</b></p> <p>Leaf hopper, whitefly and thrips on castor leaves remained active throughout the crop season with their peak activity during 3<sup>rd</sup> week of November, 5<sup>th</sup> week of October and 3<sup>rd</sup> week of November, respectively whereas thrips on spike remained active from flowering stage till harvesting of crop with their peak activity during 4<sup>th</sup> week of January and capsule borer remained active from spike formation stage till harvesting of crop with their peak incidence during 3<sup>rd</sup> week of January. The population of leaf hopper shown highly significant negative correlation with minimum temperature, morning relative humidity and rainfall; population of thrips on leaves shown highly significant negative correlation with minimum temperature, morning relative humidity, evening relative humidity and rainfall whereas thrips on spike and capsule borer incidence shown highly significant negative correlation with minimum temperature and maximum temperature.</p>
5	<p><b>Evaluation of local practices for management of fall armyworm, <i>Spodoptera frugiperda</i> in maize (2021)</b></p> <p>Farmers of Gujarat growing maize and interested in non-chemical management are recommended to apply soil or sand 5 g/plant in whorl at 30 and 45 days after sowing for reducing the damage of fall armyworm.</p>
6	<p><b>Screening of inbreeds, hybrids, released varieties as well as sweetcorn hybrids of maize for resistance against fall armyworm, <i>Spodoptera frugiperda</i> (J.E. Smith) (2021)</b></p> <p>Among 24 maize inbreeds, hybrids and varieties screened, GAYMH-1 and GAYMH-3 found resistant against fall armyworm, <i>Spodoptera frugiperda</i> under field condition of middle Gujarat region.</p>
7	<p><b>Response of new castor variety to different sowing time and spacing in late <i>kharif</i> under irrigated condition (2020)</b></p> <p>The farmers of Middle Gujarat Agro-climatic Zone growing castor are recommended to</p>

	grow either Gujarat Castor Hybrid 7 or Gujarat Anand Castor 11 during 1 <sup>st</sup> week of September and sow Gujarat Castor Hybrid 7 at 120 cm x 60 cm for securing higher yield and net return.
8	<p><b>Evaluation of insecticides for the control of major lepidopteran pests of rice (2020)</b></p> <p>Rice growers of middle Gujarat agro-climatic zone are advised to spray flubendiamide 20 WG, 0.005% (2.5 g per 10 litre of water) at 30 and 45 days after transplanting for effective and economical control of leaf folder, <i>Cnaphalocrosis medinalis</i> infesting rice. PHI of 30 days should be kept.</p>
9	<p><b>Efficacy of insecticides against fall armyworm, <i>Spodoptera frugiperda</i> (J. E. Smith) infesting maize (2020)</b></p> <p>Farmers of middle Gujarat Agro-climatic zone growing maize in kharif are advised to spray spinetoram 11.7 SC, 0.0117 % (10 ml/ 10 litre of water) or emamectin benzoate 5 SG, 0.0025% (5 g/ 10 litre of water) or chlorantraniliprole 18.5 SC, 0.006% (3 ml/ 10 litre of water) or thiodicarb 75 WP, 0.11% (15 g/ 10 litre of water) first at initiation of pest and second after 15 days for effective and economical control of fall armyworm, <i>Spodoptera frugiperda</i> infesting maize. PHI of 30 days should be kept.</p>
10	<p><b>Efficacy of granular insecticides against fall armyworm, <i>Spodoptera frugiperda</i> (J. E. Smith) in maize (2020)</b></p> <p>Farmers of middle Gujarat Agro-climatic zone growing maize in kharif are advised to give whorl application of chlorantraniliprole 0.4% GR, 20 kg/ha, first at appearance of pest and second after 15 days for effective and economical control of fall armyworm. PHI of 30 days should be kept.</p>
11	<p><b>Evaluation of bio-pesticides against fall army worm, <i>Spodoptera frugiperda</i> (J. E. Smith) in maize (2020)</b></p> <p>Farmers of middle Gujarat Agro-climatic zone are advised to spray <i>Bacillus thuringiensis</i> var. <i>kurstaki</i> 1 % WG @ 20 g/10 litre water first at initiation of pest and subsequent two sprays at 10 days interval for effective and economical control of fall armyworm, <i>Spodoptera frugiperda</i> infesting maize.</p>
12	<p><b>Efficacy of poison baits against fall armyworm, <i>Spodoptera frugiperda</i>(J. E. Smith) infesting maize (2020)</b></p> <p>Farmers of middle Gujarat Agro-climatic zone growing maize in kharif are advised to apply poison baits</p> <ul style="list-style-type: none"> <li>• Rice bran 25 kg + jaggery 5 kg + thiodicarb 75 WP 250 g/ha</li> <li style="text-align: center;"><b>or</b></li> <li>• Maize flour 25 kg + jaggery 5 kg + thiodicarb 75 WP 250 g/ha</li> <li style="text-align: center;"><b>or</b></li> <li>• Rice bran 25 kg + jaggery 5 kg + emamectin benzoate 5 SG 125 g/ha</li> </ul> <p>First at initiation of pest and second after 15 days for effective and economical control of fall armyworm in leaf whorl in maize.</p> <p><b>Note:</b> Dissolve 5 kg jaggery in 5 litres of water, mix 25 kg of bran/flour in to it and keep it overnight, next day add insecticide in bait before application.</p>
13	<p><b>Evaluation of insecticides for the control of major lepidopteran pests of rice (2020)</b></p> <p>Application of thiodicarb 75 WP, 0.15% (20 g/10 litre water, 783.33 g a.i./ha) at 30 and 45 days after transplanting found effective against leaf folder, <i>Cnaphalocrocis medinalis</i> infesting rice.</p>
14	<p><b>Efficacy of granular insecticides against fall armyworm, <i>Spodoptera frugiperda</i> (J. E. Smith) in maize (2020)</b></p>

	Whorl application of fipronil 0.6% GR, 20 kg/ha (120 g a.i./ha) first at appearance of pest and second after 15 days for effective control of fall armyworm, <i>Spodoptera frugiperda</i> in maize.
15	<p><b>Evaluation of bio-pesticides against fall army worm, <i>Spodoptera frugiperda</i> (J. E. Smith) in maize (2020)</b></p> <p>Application of <i>Nomuraea rileyi</i> 1% WP (<math>2 \times 10^8</math> cfu/g) @ 40 g/10 litre water first at initiation of pest and subsequent two sprays at 10 days interval for effective and economical control of fall armyworm, <i>Spodoptera frugiperda</i> infesting maize.</p>
16	<p><b>Evaluation of different insecticidal application strategies against stem borer, <i>Chilo partellus</i> Swinhoe infesting maize (2018)</b></p> <p>Maize growers of Middle Gujarat Agro-climatic Zone III are recommended to treat the seeds with thiamethoxam 30 FS, 8 ml/ kg using 8 ml of water before 12 hours of sowing for preventing stem borer infestation. The treated seeds should be dried under shade condition before sowing.</p>
17	<p><b>Evaluation of different insecticidal application strategies against stem borer, <i>Chilo partellus</i> Swinhoe infesting maize (2018)</b></p> <p>Treat the seeds of maize with imidacloprid 600 FS, 8 ml/ kg seed (0.96 kg. a.i./ ha) using equal quantity of water before 12 hours of sowing for preventing stem borer infestation. The treated seeds should be dried under shade condition before sowing.</p>