Research highlights

Crop improvement

Trial was conducted to study the performance of red kernelled rice lines with medium duration and tolerance to gall midge for the coastal zone during Kharif 2022. Among19 elite cultures, 7 entries showed higher grain yield performance over the check. The entries BMR-Mutant-2, BMR-Mutant-6 and BMR-Mutant-4 were exhibited significant higher grain yield of 5744.95 kg/ha, 5637.63 kg/ha and 5618.69 kg/ha with 16.74%, 14.56% and14.18% yield increase respectively, over check MO-4 (4921.09 kg/ha).

When evaluated the performance of white rice lines with high grain yield for the coastal zone during Kharif 2022, mong 15 entries, only one entry Phalguna exhibited higher grain yield of 3731.06 kg/ha with 4.60% yield increase over check KCP-1 (3566.92 kg/ha).

Upon studying the performance of the biofortified rice cultures for grain yield and nutritional qualities during Kharif 2022. Among 15 elite cultures, 7 entries recorded higher grain yield performance over the check. The entries MO-4, Kaje 25-9and IVT-Bio-4607 were exhibited significant higher grain yield of 4930.56 kg/ha, 3983.59kg/ha and 3566.92 kg/ha with 71.27%, 38.38% and 23.90% yield increase respectively, overcheck DRR dhan-48 (2878.79 kg/ha).

An experiment was conducted to know the performance of the mid-early rice entriesfor high grain yield for the coastal zone during Kharif 2022. Among 17 elite cultures, BMR-US-1-24-2 exhibited significant higher grain yield of 5650.25 kg/ha with 14.01% over check MO-4 (4955.81 kg/ha) and 35.61% over check Uma (4166.67 kg/ha).

Experiment was conducted to evaluate the tolerant rice culture for salinesoils of coastal Karnataka during Kharif 2022 in salt affected soils of farmer field, Barkur. Among 20 elite cultures, 11 entries recorded higher grain yield over check. The entries BMR Mutant 35-9, BMR Mutant 35-10 and Lavanya showed significant higher grain yield of3156.57 kg/ha, 3125.00 kg/ha and 3093.43 kg/ha with 51.52%, 50% and 48.48%respectively, over check Karikagga (2083.33 kg/ha).

During rabi/summer an experiment was conducted to study the performance of high grain yield rice lines with early maturity, resistance to pest and disease for the coastal zone during summer 2022. Among 14, 8 entries showed higher grain yield performance over the check. The entries BMR-US-1-24-2, MO-21 and BMR-selection-S2 were recorded higher grain yield of 4878.79 kg/ha, 4827.27kg/ha and 4363.64 kg/ha with 39.15%, 37.68% and24.46% yield increase respectively over local check Jyothi (3506.6 kg/ha). Similarly, Kaje 25-9 (3807.27 kg/ha) exhibited significant higher grain yield with 35.45% increase yield as compared to Kajejaya (2810.91 kg/ha).

Totally 44 local avade lines maintained at ZAHRS, Brahmavar and evaluated for yield and disease /pest reaction. The line BMR-A-1 recorded higher grain yield of 1535 kg/ha with 7% yield increase over check UAHS-28 (1425 kg/ha)and 27% yield increase over check C-152 (1200 kg/ha)

MLT was conducted to evaluate the elite groundnut genotypes for high yield in Coastal zone during summer 2022. Among 16 entries, 8 entries showed higher grain yield performance over the check. The entries Dh 256, K 1812, DBG 4 and Dh 257 were recorded

higher grain yield of 500kg/ha, 453kg/ha, 435kg/ha and 435kg/ha with 29.87%,17.66%, 12.99% and 12.99% yield increase respectively over local check TMV 2 (385kg/ha).

An experiment was conducted to know the performance of groundnut varieties for high yield at the coastal zone during summer 2022. Among 16 entries, 6 entries showed higher grain yield performance over the check. The entries K 1812, Dh 303 and Dh 209 were recorded higher grain yield of 430 kg/ha, 415 kg/ha and 410 kg/ha with 19.44%, 15.28% and13.89% yield increase respectively over local check TMV 2 (360 kg/ha).

Experiment was conducted to know the comparative performance of early elite cultures in transplanted irrigated conditions during Kharif 2022. Among 13 entries, 9entries showed higher grain yield performance over the check. The entries 3404, 3401 and3402 were recorded higher grain yield of 5458.94 kg/ha, 5237.52 kg/ha and 4929.55 kg/hawith 34.30%, 28.85% and 21.27% yield increase respectively over local check MO-21(4064.81 kg/ha).

The trial conducted to study the comparative performance of early elite culturesin transplanted irrigated conditions during Kharif 2022. Among 29 entries, 14 entries showed higher grain yield performance over the check. The entries 3501, 3502 and 3508 were recorded higher grain yield of 4730.27 kg/ha, 4669.89 kg/ha and 4665.86 kg/ha with 17.27%,15.77% and 15.67% yield increase respectively over local check MO21 (4033.82 kg/ha).

The trial designed to study the comparative performance of mid-early duration elite cultures in irrigated areas during Kharif 2022. Among 17 entries, 13 entries showed higher grain yield performance over the check. The entries 3703, 3707 and 3701 were recorded higher grain yield of 5188.81 kg/ha, 4770.53 kg/ha and 4734.30 kg/ha with 50.93%,38.76% and 37.70% yield increase respectively over local check KCP-1 (3438.00 kg/ha).

The trial conducted to study the comparative performance of mid-early duration elite cultures in irrigated areas during Kharif 2022. Among 34 entries, 25 entries showed higher grain yield performance over the check. The entries 3808, 3820 and 3816 were recorded higher grain yield of 5092.59 kg/ha, 5088.97 kg/ha and 5084.14 kg/ha with 38.40%,38.30% and 38.17% yield increase respectively over local check KCP-1 (3679.55 kg/ha).

The experiment was conducted to know the comparative performance of medium duration elite cultures in irrigated areas during Kharif 2022. Among 19 entries, only 3 entries showed higher grain yield performance over the check. The entries 4010, 4009 and 4008 recorded higher grain yield of 5326.09 kg/ha, 5189.21 kg/ha and 5004.03 kg/ha with 7.08%,4.33% and 0.61% yield increase respectively over local check MO-4 (4973.83 kg/ha).

The trial designed to study the comparative performance of medium duration elite cultures in irrigated areas during Kharif 2022. Among 44 entries, only 1 entry showed higher grain yield performance over the check. The entry 4103 recorded higher grain yield of5000.00 kg/ha with 2.22% yield increase respectively over local check MO-4 (4891.30kg/ha).

The experiment conducted to know the comparative performance of medium duration elite cultures in irrigated areas during Kharif 2022. Among 64 entries, 7 entries showed higher grain yield performance over the check. The entries 4204, 4213 and 4218 were recorded higher grain yield of 5246.21 kg/ha, 4987.37 kg/ha and 4955.81 kg/ha with9.49%, 4.08% and 3.43% yield increase respectively over local check MO-4 4791.67 kg/ha).

The trial designed to study the comparative performance of elite lines for yield and nutritional quality during Kharif 2022. Among 46 entries, 11 entries exhibited higher grain yield performance over the check. The entries 5105, 5109 and 5124 had recorded higher grain yield of 5018.94 kg/ha, 4968.43 kg/ha and 4900.25 kg/ha with 17.78%, 16.59%and 14.99% yield increase respectively over check MO 21 (4261.36 kg/ha).

The experiment conducted to know comparative performance of promising elite cultures for alkalinity and inland salinity during Kharif 2022. Among 13 entries, 8 entries showed tolerance to salinity and higher grain yield performance over the check. The entries 5206, 5202 and 5208 were recorded higher grain yield of 3070 kg/ha, 2860 kg/ha and 2730kg/ha with 53.81%, 43.29% and 36.77% yield increase respectively, over local check Karikagga (1996 kg/ha).

Trial conducted to evaluate comparative performance of promising elite cultures for alkalinity and inland salinity during Kharif 2022. Among 15 entries, only one entry showed tolerance to salinity and higher grain yield performance over the check. The entry 5309 was recorded higher grain yield of 3370.00 kg/ha with 18.25% yield increase respectively, over local check Karikagga (2850 kg/ha).

This trial designed to evaluate comparative performance of promising elite cultures for alkalinity and inland salinity during Kharif 2022. Among 24 entries, 19 entries showed tolerance to salinity and higher grain yield performance over the check. The entries 5411, 5419 and 5408 were recorded higher grain yield of 3040 kg/ha, 3010 kg/ha and 2940kg/ha with 54.31%, 52.79% and 49.24% yield increase respectively, over local check Karikagga (1970 kg/ha).

Trial designed to evaluate comparative performance of promising elite cultures for coastal saline soils during Kharif 2022. Among 9 entries, 4 entries showed tolerance to salinity and higher grain yield performance over the check. The entries 5504, 5508 and 5502 were recorded higher grain yield of 3030 kg/ha, 2960 kg/ha and 2930 kg/hawith 19.72%, 16.95% and 15.76% yield increase respectively, over local check Karikagga(2531 kg/ha).

An experiment conducted to know comparative performance of promising elite cultures for coastal saline soils during Kharif 2022. Among 32 entries, 24 entries showed tolerance to salinity and higher grain yield performance over the check. The entries 5616, 5615 and 5611 were recorded higher grain yield of 3090 kg/ha, 3070 kg/ha and 2950 kg/hawith 56.77%, 55.76% and 49.67% yield increase respectively, over local check Karikagga (1971 kg/ha).

An experiment was conducted to know the comparative performance of elite hybrid cultures during Kharif 2022. Among 26 entries, 10 entries showed higher yield performance over the check. The entries 3212, 3201 and 3219 have recorded highest yield of 6363.64 kg/ha, 6290.91 kg/ha and 6024.24 kg/ha with 24.70%, 23.28% and 18.05%increase in yield respectively, over local check MO-4 (5103.03 kg/ha).

A trial has been conducted to know the comparative performance of medium slender elite hybrid cultures during Kharif 2022. Among 16 entries, 5 entries showed higher yield performance over the check. The entries 3307, 3309 and 3313 have recorded highest yield of 5763.64 kg/ha, 5242.42 kg/ha and 5121.21 kg/ha with 14.58%, 4.22% and 1.81% increase in yield respectively, over local check MO-4 (5030.30 kg/ha).

Released new variety of rice: BMR-US-1-24-2. (Sahyadri Sapthami)

Natural farming

Blackgram pod yield (12.65 q ha -1) in Paddy based cropping system was significantly higher in package of practice treatment. This treatment also recorded the maximum gross returns, net returns and B:C ratio (Rs. 85,285, 44,592 ha -1 and 2.09, respectively). Pod yield (18.51 q ha -1), haulm yield (23.45 q ha -1) of groundnut were significantly higher in package of practice treatment. This treatment also recorded maximum gross returns, net returns and B:C ratio (Rs. 1,23,154 ha -1 , 57,862 ha -1 and 1.88, respectively). Yield and yield attributes of paddy viz., grain yield (6,472.31 kg ha -1), straw yield (8,143.44 kg ha -1), number of productive tillers (19.70 plant -1) and panicle length (20.15cm) were significantly higher in package of practice treatment with blackgram as previous crop as compared to other treatments. The same treatments also recorded maximum gross returns (Rs. 1,30,321 ha -1), net returns (Rs. 60,065 ha -1) and B:C ratio(2.10) as compared to other treatments.

In the paddy based cropping systems (paddy-groundnut, paddy-blackgram and paddy-fallow) maximum gross returns and net returns (Rs.2,45,265 and 1,17,927 ha -1 ,respectively) were recorded in package of practice treatment with groundnut as previous crop. Whereas, B:C ratio (2.10) was slightly higher in blackgram–paddy cropping system. The fallow–paddy system with natural farming recorded minimum gross returns of Rs.90,164 ha -1 when compared to other cropping systems.

In general soil physico-chemical properties viz., soil pH, EC, organic carbon, available NPK and micronutrients status were non significant among different treatments in paddy based cropping systems. Soil microorganisms (Bacteria, fungi, actinomycetes, Azotobacter, PSB, KSB, Pseudomonas and Trichoderma) and enzymatic activity (Dehydrogenase, Urease, Acid Phosphatase and Alkaline Phosphatase) in rhizosphere soil were significantly higher in natural farming (ZBNF) as compared to other treatments at flowering stage in paddy based cropping system.

Pest and diseases observed in blackgram (aphids, anthracnose, cecospora leaf spot and powdery mildew), groundnut (aphids, early leaf spot and late leaf spot) and paddy(leaf folder, hispa and ear head bug) were best managed through package of practice treatment compared to all other treatments. In Natural farming treatment highest population of natural enemies such as coccinellids, spiders and Odonata were recorded.

The chali yield was significantly higher (22.56 q/ha) in package of practice treatment than natural farming treatment (16.85 q/ha). The maximum net returns of Rs. 5,98,889ha -1 was obtained in package of practice treatment and minimum net returns of Rs.3,86,507 ha -1 was obtained in farmers practice treatment. The highest benefit: cost ratio of 3.68 was obtained in natural farming treatment.

Percent nut drop due to Koleroga (Fruit rot) disease was lowest in Package of practice, organic farming and farmer's practice treatments and these three treatments were on par with each other. Highest nut drop was recorded in natural farming treatment.

Among the different cultivation practices, significantly higher nut yield per tree (3.75 kg)and nut yield per hectare (1,502 kg) were observed in package of practice treatment. Whereas, the lowest nut yield per tree (1.63 kg) and nut yield per hectare (654 kg) were noticed in farmers practice treatment. The maximum net returns of Rs. 1,08,695 ha -1 was obtained in package of practice treatment as compared to Rs 74,186 per ha in natural farming treatment. The highest benefit: cost ratio of 4.82 was obtained in farmers practice treatment.

Tea mosquito bug was the major insect pest observed in cashew crop. Second spray onwards Package of practice treatment recorded significantly lowest incidence of tea mosquito bug whereas, farmer's practice treatment recorded the highest incidence. In coconut, significantly higher number of nuts per hectare (17,526) were observed in package of practice treatment. Whereas, the lowest number of nuts per hectare(13,956) were noticed in farmers practice treatment. The maximum net returns of Rs.1,77,213.70 ha -1 was noticed in package of practice treatment. The highest benefit:cost ratio of 2.38 was obtained in natural farming treatment. Intercropped fodder grass yield was significantly higher (211.62 t /ha) in package of practice treatment as compared to lowest (140.46 t/ha) in farmers practice treatment.

In coconut based cropping system (coconut + fodder grass) the higher cost of cultivation (Rs. 2,96,102 ha -1) was observed in organic farming treatment as compared to lowest of 1,97,459 in natural farming treatment. The gross returns (Rs. 5,25,726)and net returns (Rs. 3,15,981) were higher in package of practice treatment. Among the different cultivation practices, significantly higher flower yield per hectare(3,436 kg) was observed in package of practice treatment while it was the lowest in farmers practice treatment (2,335 kg). The maximum net returns of Rs. 5,25,149 ha -1was obtained in package of practice treatment. The highest benefit: cost ratio of 1.95was obtained in natural farming treatment. While, the lowest (1.22) was found in farmers practice treatment.

Jasmine bud borer and flower thrips incidence crossed ETL level in jasmine crop. Package of Practice and Farmer's Practice treatments showed on par result and recorded best management of this insect pest as compared to all other treatments. Package of Practice was found best for the management of Cercospora leaf spot disease observed in jasmine crop during the experimental period.

In general, marginal increase in soil Organic carbon content was observed in organic farming treatment. Soil microorganisms, enzymatic activity in rhizosphere soil were significantly higher in natural farming (ZBNF) treatment as compared to other treatments.

Shoot and fruit borer, red mite, leaf hoppers, hadda beetle and leaf roller were best managed through Package of practice treatment as compared to other treatments. Whereas, coccinellids, spider and other beneficiary insects population was higher in natural farming treatment as compared to other treatments. In okra, higher fruit yield per plant (1.35 kg) and higher fruit yield per hectare (11.90 t)was observed in package of practice treatment. Whereas, the lowest fruit yield per plant(0.96 kg) and fruit yield per hectare (8.59 t) was noticed in organic farming treatment. The maximum net returns of Rs. 2,73,827 ha -1 was noticed in package of practice treatment. The highest benefit: cost ratio of 3.57 was obtained in natural farming treatment. Whiteflies, aphids and leafhoppers were best managed through Package of practice treatment as compared to other treatments. Whereas, coccinellids and other beneficiary insects population was higher in natural farming treatment as compared to other treatments. Results showed that natural farming practices and farmer's practices have similar benefit cost ratio in Paddy.

Arecanut crop higher Net returns with higher Benefit cost ratio with higher chali yield was observed under Natural farming practices as compared to Farmers practices. Similarly, in Coconut crop average number of nuts per palm was found higher in natural farming practices with higher benefit cost ratio and net returns with or without premium price. However, with premium price similar trend with higher gross returns, net returns and benefit cost ratio of Paddy, Arecanut and Coconut was observed.

Entomology

Gall midge biotypes prevalence in AICRP-Rice, Brahmavar was monitored by screening 20 varieties. The incidence of gall midge was lesser in Phalguna, RP 2333-156-8, Madhuri L-9, BG 380-2 and TN1, whereas other varieties were free from gall midge infestation.

Among pests of paddy, in Brahmavar stem borer and caseworm infestation was comparatively higher. So, these two pests were chosen to screen 40 entries of rice supplied by ACRIP. Paddy stem borer infestation in 40 rice entries ranged from 0.00 to16.3%. There was considerable increase in infestation of stem borer in 1 month late sown paddy, infestation in general increased from 14.02 to 16.30 per cent. Among rice entries screened, number of caseworm per 10 hills increased from 3.00 to 10.00. The infestation of caseworm was higher in 1 month late sown rice entries 7.67 to 10.00 caseworm larvae per10 hills.

Total 110 rice entries were supplied by AICRP for screening against gallmidge at Brahmavar station. Among 110 rice entries, gall midge infestation was found only in 11 rice entries which are mentioned in the table 4. Number of rice plants infested by gallmidge (60 plants/entry) was 1.79, 2.01 and 2.00 after 30, 50, 75 days after transplanting.

Three light traps were installed from 7 th July 2022 at sufficient distance apart tore present whole paddy field. Several kinds of insects were attracted towards light traps. Among them, paddy pests were caseworm, ear head bug, gall midge and leaf roller and natural enemies. Gall midge adults were found on light traps in measurable level from July 7th 2022. Paddy ear head bug attraction towards light trap increased gradually and it was at peak on 6th fortnight. Paddy caseworm attraction towards light trap increased gradually and it was at peak 4 th and 6 th fortnight. Leaf roller attraction was the minimum. Natural enemies' attraction towards light trap fluctuated accordingly with pest population. Light trap collection data also confirms that caseworm and ear head bug population and infestation are higher in AICRP, Brahmavar. Infestation of ear head bug was uniformly distributed at flowering stage of paddy in this trial. Among five treatments, the treatment with Lecanicilliumsaksenae was significantly superior to standard check thiamethoxam and followed by Beavueriabassiana treatment. The Metarhizium anisopliae treatment was less effective comparatively.

Among the organic insecticides (treatments) evaluated, Neem Seeds Kernel Extract (NSKE) @ 5% was found superior against Amaranth cutworms which was followed by Azadirachtin 10,000ppm @2ml/l.

Cashew: The treatment Buprofezin 25 SC @ 2 ml/l was found to be superior over other treatments by recording 4.13% incidence followed by Fenitrothion 50 EC @ 2 ml/l(4.56%).The treatment Lambda-cyhalothrin 5 EC @ 0.6 ml/l recorded 5.82 % incidence andwas found to be the least effective followed by Flonicamid 50 SG 0.3 g/l (5.34%).The treatment Untreated control recorded 8.64% incidence of tea mosquito bug.

Soil Science

Lime and magnesium sulphate application recoded significant higher brinjal yield over control check. It was observed that lime application equivalent to 50% and 100% exchangeable acidity (EA) recorded significant higher brinjal yield over no lime application. However, non-significant between the lime treatments. Dolomite treatments recorded significant brinjal yield over control, however on par with lime treatments. Magnesium sulphate along with lime application showed significant brinjal yield over control and only

lime applied treatments. It was observed that different levels of lime and magnesium sulphate treatments were non-significant however higher levels recorded on par yield over lower levels of lime and magnesium sulphate treatments. Benefit cost ratios of different treatments inferred that magnesium sulphate along with lime recorded higher B:C ratios, among these treatments, lime application equivalent to 50%exchangeable acidity along with 20 kg magnesium sulphate (T 4) recorded highest B:C ratio. Hence this treatment is proposed for farm trial along with check package of practice (T 1)treatment.

Utilization of native phosphorus by ridge gourd experiment data indicates that as follows: Soil available phosphorus status of different treatments did not varied, it implies that even reducing the phosphorus application soil available phosphorus status was maintained as of initial phosphorus status. Reduced phosphorus levels, liming and phosphorus solubilizing microbes treatments showed on par phosphorus status over initial phosphorus values with similar ridge gourd yield. This indicates that built up phosphorus can be made use to obtain optimum yield. It was observed that ridge gourd yield was non-significant among the treatments, implies that reduction of P fertilizer application in P built up soil did not affect crop yield and effective in use of native soil P by the crop.

Cucumber: Micronutrient formulations spray on crop did not have effect on soil properties. All treatments showed non-significant with respect to sambar southe yield, however treatments received micronutrients spray recorded on par yield over control, which was not received micronutrient nutrition. Experimental results revealed that increase in levels of potassium nutrition increased the ashgourd yield. The treatment T 4 (65 kg K 2 O ha -1) recorded highest yield followed by T 3 (66 kg K 2 O ha -1) and T 2 (55 kg K 2 O ha -1), and significant over T1, T5 and T6. However, T4 recorded non-significant with T3 and T2 treatments. Different levels of potassium nutrition do not have effect on soil properties.

Organic farming v/s. chemical fertilized soils: Analytical results revealed that organic farming practiced soils recorded slightly higher soil pH, organic carbon, available nitrogen and exchange able calcium and lower available phosphorus and potassium statuses than chemical fertilized soils.

Nitrogen level of 90 kg ha -1 with three equal split application first at basal (transplanting), second and third at 25-30 and 55 – 60 days after transplanting recorded significantly higher plant height at 30, 60 and 90 days after transplanting over all other levels of nitrogen and nano – nitrogen combined with basal urea form nitrogen applications. Urea form nitrogen application recorded significantly higher plant height over basalurea form nitrogen with top dressing of nano – nitrogen application. Among nano nitrogen applications, nitrogen applications 30 kg ha -1 nitrogen in the for of urea with nano – nitrogen application recorded significantly higher plant height over lower levels of urea form nitrogen applications.

Agricultural Engineering

Performance evaluation of KSNUAHS designed Power tiller operated seed drill for paddy sowing showed better economics at Rs. 441/acre compared to Rs. 801/acre Tractor Drawn Seed drill.

Design and development of coconut tree climbing machine: From the analysis it is concluded that maximum deflection due to operator load and self weight occurs at G.I supporting rods. The maximum total deformation and deformation along Z Axis is found to

be 1 x 10 -4 and 1.48 x 10 -6 mm respectively. Hence it is negligible for our application. Therefore the design is safe.

Performance evaluation of pneumatic operated coconut tree climber: The operating cost of the pneumatic operated coconut tree climber was found to be Rs.210.00 per hour with specific consumption of 1.00 litre per hour with the field capacity of 6-7 trees per hour. The overall performance of the pneumatic operated coconut tree climber was found to be satisfactory.

A number of concepts in pepper harvester design, were evaluated and finally the catch and jerk concept was found acceptable. Testing of the device showed successful results with ease in harvesting. Use of ladder, climbing exercise, risk of slipping, time lapse in frequent shifting all are eliminated. It is made user friendly. Weight of the produce is supported from the ground column. It Reduced the fatigue on the part of harvester. Frequent climbing of the ladder, balancing picking risk of skipping are all eliminated. Therefore, suitable even for women and children.

Studies on greenhouse environment as influenced by the types of green house at Brahmavar condition of coastal zone: Dew point temperature was lower in the winter and increased towards summer. The difference between the greenhouse types did not vary great. It was within 2 to 3 o C. However, in 4 th and 5 th weeks lower dew point temperatures were noticed in arch type greenhouse. Enthalpy is the total heat content in the system and the shade houses showed lower heat content in the system and the highest was noticed in multi span arch greenhouse.

The Automatic Rice Nursery Sowing Machine, was tested by adopting standard test procedures for paddy sowing operation at Zonal Agricultural & Horticultural Research Station, Brahmavar. The operating cost of the Automatic Rice Nursery Sowing Machine was found to be Rs. 380.25 per acre with an output capacity of 600 trays per hour, where as the operating cost of Traditional seed bed raising was found to be Rs. 975 per acre. The overall performance of the Automatic Rice Nursery Sowing Machine was found to be satisfactory. Further the study reveals that the initial cost of Automatic Rice Nursery Sowing Machine was found to be 2.40 lakh whereas the initial cost of traditional seed bed raising is negligible (Around Rs. 500 per acre).Accepted for inclusion in POP.