Technologies generated (Kharif)

2016

Production recommendations approved in *Kharif* 2016 ZREAC Meeting of Zone IIIa

- Spray of salicylic acid@100ppm(1.5g/15litre water)or Thioglycolic acid @100ppm or Thiourea @1000ppm at grain filling stage was found to be effective in mitigating the adverse impact of terminal heat stress in pearl millet.As a special precaution hand gloves must be weared while using thioglycolic acid.
- Seed treatment of imidacloprid 600FS @8.75ml/kg seed followed by spraying of imidacloprid 17.8SL@0.009%(0.5ml/lit of water)at 35days after germination is effective for the management of shoot fly and stem borer in pearl millet.
- Black silver grey polythene of 25 micron is recommended to control the weeds effectively with maximum green pod yield in vegetable cowpea.

Technologies generated (Kharif)

2013

Production recommendations approved in *Kharif* 2013 ZREAC Meeting of Zone-IIIa

1. For organic farming in Bajra-Chickpea cropping sequence, application of 7.5 t FYM/ha before sowing of bajra is recommended followed by no FYM in chickpea in *Rabi* season for higher production and economic returns.
2. Mungbean seeds treated with emamectin benzoate 5 SG at 40 mg/ kg seed can safely be stored for one year in jute bags under ambient conditions, maintaining the seed germination as per minimum seed certification standard.
3. Seed treatment with imidacloprid 600 FS @ 8.75 ml/kg seed followed by dusting of fenvelerate 0.4% @ 20 kg/ha at 35 days after germination is effective for the management of shoot fly and stem borer in pearl millet.
4. Post emergence application of Imazethapyr at 40 g/ha at 15-20 Days after sowing is recommended to control the broad and grassy weeds (*Amaranthus viridis, Cencrus cathorticus, Dactyloctenium aegyptium, Euphorbia hirta, Digera arvensis, Corchorus acutangulus*) in mung bean and increased the seed yield of mung bean significantly with highest net return of Rs. 27049/ha and B:C ratio of 5.06.
5. In case of long dry spell, if there is a facility of single irrigation in cluster bean then apply at 50% flowering stage (40-45 DAS). If facility is available for two irrigations then irrigate at vegetative stage (25-30 DAS) and at 50% flowering stage (40-45 DAS).
6. In standing crop of cluster bean post emergence (15-20 DAS) application of Imazethapyr 35% + Imazamox 35% WG @ 52.5 g ai/ha is recommended for the control of broad leaf and grassy weeds .
7. In standing cowpea crop post emergence application of Imazethapyr 10 % SL @ 37.5 g ai/ha is recommended for the control of broad leaf & grassy weeds .

2012

(Production recommendations approved in *Kharif* 2012 ZREAC Meeting of Zone-IIIa)

1. For organic farming in Bajra-Chickpea cropping sequence, application of 7.5 t FYM/ha before sowing of bajra is recommended followed by no FYM in chickpea in *Rabi* season for higher production and economic returns.
2. Mungbean seeds treated with emamectin benzoate 5 SG at 40 mg/ kg seed can safely be stored for one year in jute bags under ambient conditions, maintaining the seed germination as per minimum seed certification standard.
3. Seed treatment with imidacloprid 600 FS @ 8.75 ml/kg seed followed by dusting of fenvelerate 0.4% @ 20 kg/ha at 35 days after germination is effective for the management of shoot fly and stem borer in pearl millet.
4. Post emergence application of Imazethapyr at 40 g/ha at 15-20 Days after sowing is recommended to control the broad and grassy weeds (*Amaranthus viridis, Cencrus cathorticus, Dactyloctenium aegyptium, Euphorbia hirta, Digera arvensis, Corchorus acutangulus*) in mung bean and increased the seed yield of mung bean significantly with highest net return of Rs. 27049/ha and B:C ratio of 5.06.
5. In case of long dry spell, if there is a facility of single irrigation in cluster bean then apply at 50% flowering stage (40-45 DAS). If facility is available for two irrigations then irrigate at vegetative stage (25-30 DAS) and at 50% flowering stage (40-45 DAS).
6. In standing crop of cluster bean post emergence (15-20 DAS) application of Imazethapyr 35% + Imazamox 35% WG @ 52.5 g ai/ha is recommended for the control of broad leaf and grassy weeds (List of weeds is given below).
7. In standing cowpea crop post emergence application of Imazethapyr 10 % SL @ 37.5 g ai/ha is recommended for the control of broad leaf & grassy weeds (List of weeds is given below).

2011
(Production recommendations approved in *Kharif* 2011 ZREAC Meeting of Zone-IIIa)

1. RHB-177 (843-22A x RIBH-494) : Pearl millet hybrid with 18-20 q/ha grain and 42-43 q/ha dry fodder yield has been released and notified for cultivation under dry and arid regions of the Country which includes dry areas of Rajasthan, Haryana and Gujarat. This variety gives about 16% higher grain yield over the popular hybrid HHB-67 (Improved) and an additional gain of Rs. 2000/ha (The base price of bajra grain was assumed as Rs. 700/q).

2. In bajra crop, apply zinc sulphate in kg/ha according to available zinc status of soil as given in ready reckoner.

Ready reckoner for dose of zinc sulphate according to equation (Y* = 35.844 – 25.951 X*)

Soil status of Zinc (mg/kg)	Dose of $ZnSO_4$ (kg/ha)	Soil status of Zinc (mg/kg)	Dose of $ZnSO_4$ (kg/ha)
0	36	0.7	18
0.1	33	0.8	15
0.2	31	0.9	12
0.3	28	1.0	10
0.4	25	1.1	07
0.5	23	1.2	05
0.6	20	1.3	02

* Where X is available zinc status of soil in mg/kg and Y is dose of zinc sulphate kg/ha.

3. For organic production of groundnut, enriched vermi-compost @ 5 t/ha along with three sprays of 20% liquid organic manure at 15 days interval should be applied at the time of sowing, beginning after 40 days of sowing under irrigated coarse texture agro-ecological situations. The treatment gives an additional benefit of Rs. 15936/ha.

4. In groundnut crop, apply zinc sulphate in kg/ha according to available zinc status of soil as given in ready reckoner.

Ready reckoner for dose of zinc sulphate according to equation (Y* = 31.788 – 22.356 X*)

Soil status of Zinc (mg/kg)	Dose of $ZnSO_4$ (kg/ha)	Soil status of Zinc (mg/kg)	Dose of $ZnSO_4$ (kg/ha)
0	32	0.7	16
0.1	30	0.8	14
0.2	27	0.9	12
0.3	25	1.0	09

0.4	23	1.1	07
0.5	21	1.2	05
0.6	18	1.3	03

* Where X is available zinc status of soil in mg/kg and Y is dose of zinc sulphate kg/ha.

5. In groundnut crop, whitegrub (*Holotrichia consanguinea*) was effectively controlled with the seed ("Gulli") treatment of clothianidin 50 WDG at 2 g/kg seed under irrigated coarse texture agro-ecological situations.

6. For the management of collar rot disease of groundnut, seed treatment with Carboxin 37.5% + Thiram 37.5% @ 3g/kg seed, effectively controls the disease and increase pod yield by 47% over untreated check under irrigated coarse texture agro-ecological situations. The enhanced pod yield will give additional benefit of Rs. 30,000/- per hectare.

7. Treat the mungbean seeds before sowing with *Rhizobium* and PSB-2 cultures each @ 600 g/ha. It increases the yield of the crop by 10-18 per cent under irrigated coarse textured agro-ecological situations. The treatment gives an additional return of Rs. 4791/ha.

8. Seed yield of guar increased when 20 kg K_2O/ha + 2.5 t/ha vermi-compost were applied at the time of sowing under coarse texture irrigated agro-ecological situations. The additional benefit under treatment was Rs. 8256/ha.

9. For the management of root rot/stem blight disease of cowpea seed treatment with *Trichoderma viride* @ 4 g/kg seed + carbendazim 0.5 g/kg seed is effective in reducing the disease, under irrigated coarse texture agro-ecological situations. Additional income over control by adoption of technology = Rs. 10,000/- per ha.

10. The *Rabi* onion varieties R. O. 59 and R. O. 252 can be successfully grown during *Kharif*

2010

(Production recommendations approved in *Kharif* 2010 ZREAC Meeting of Zone-IIIa held on 5th & 6th April 2010)

1. Pearl millet hybrid RHB-154 has been released and notified for cultivation in low rainfall (≤400 mm) areas.

2. Pearl millet hybrid RHB-173 has been released and notified for cultivation in arid and semi-arid areas of the country.

3. The semi-spreading groundnut variety 'Girnar-2', released from Gujarat at the Central level for cultivation has been found good yielder (25-30 q/ha) in Zone-IIIa.

4. Maize variety Pratap Makka-5 (white seed) has been found higher yielder in adaptive trials.

5. Sorghum variety CSV-23 and SU-1080 have been found higher yielder in adaptive trials.

6. Bt. Cotton hybrid varieties MRC-7017 (Myhco), Rasi-314 and Tulsi-4 BG have been found higher yielder in adaptive trials.

7. Application of 9 t/ha FYM or 4.5 t/ha vermi-compost + 4 t/ha decomposed organic waste + 6 kg/ha each of *Azotobacter* and PSB increases the productivity of pearl millet and organic carbon status of soil under irrigated coarse textured soil situation of Zone-IIIa.

8. In pearl millet for integrated nutrient management, application of 30 kg/ha N + 15 kg/ha P_2O_5 along with 6 t/ha FYM + 6 kg/ha each of *Azotobacter* and PSB + 250 kg/ha gypsum and 25 kg/ha zinc sulphate increases the productivity and organic carbon status of soil under irrigated coarse textured soil situations of Zone-IIIa.

9. Foliar spray of 50 ppm NAA at 35 and 45 DAS enhances the pod yield of groundnut under irrigated coarse textured soil situations of Zone-IIIa.

10. Soil application of 3 t/ha FYM or 1.5 t/ha vermi-compost with 5 kg/ha PSB and seed treatment with *Rhizobium* @ 6 g/kg seed results in sustainable grain yield of moongbean under organic production system.

11. For organic production of moongbean, enriched vermi-compost @ 2.5 t/ha should be applied at the time of sowing followed by two sprays at 10 days interval of 20% liquid organic manure at 35 days after sowing.

12. Soil application of 32 t/ha FYM or 16 t/ha vermi-compost along with 6 kg/ha PSB and pre-sowing seed treatment with *Azotobacter* @ 6 g/kg seed results in sustainable fruit yield of okra under organic production system. For tomato the

FYM should be 39 t/ha or vermi-compost 18.5 t/ha and the nursery should be raised under the cover of Agro-net.

13. Soil application of 6 t/ha enriched vermi-compost at the time of sowing followed by application of vermi-compost @ 2 t/ha + 500 kg/ha neemcake at 35-40 DAS and three fortnightly foliar sprays of 20% liquid organic manure at 45-50 DAS resulted in sustainable fruit yield of bottle gourd and round gourd.

14. For the control of leaf blight disease of clusterbean, soak the seeds in 0.1% solution of streptocyclin (6 g streptocyclin) in 6 L water for 6 kg seed) for one hour and sow after drying under shade for 30-40 minutes. At 55-60 DAS or onset of the disease, spray the crop twice with 150 ppm solution of streptocyclin + blitox-50 (3 g/L water) at an interval of 15-20 days.

15. For the control of collar rot of groundnut, seeds should be treated with thiram @ 1.5 g/kg seed, insecticide, *Rhizobium* culture followed by *Trichoderma viride* @ 10 g/kg seed. In addition, 2.5 kg *Trichoderma* culture (powder, CFU 108) mixed in 500 kg FYM be incubated under wet conditions for 6-7 days and then should be added in the soil in one hectare area at the time of sowing.

16. A minimum of 2 days waiting period is essential after the spray of Imidacloprid 200 SL @ 50 g ai/ha in/on chilli and soil.

17. A minimum of 3 days waiting period is essential after the spray of Imidacloprid 70 WG @ 24.5 g ai/ha in/on cucumber and soil.

2009

(Production recommendations approved in *Kharif* 2008 ZREAC Meeting of Zone-IIIa held on 4th & 5th February 2009)

1. Seed soaking in 1000 ppm (0.1%, 1 g/L) thiourea solution for 5-6 hours and drying under shade before sowing increases grain yield in pearl millet under rainfed coarse texture agro-ecological situation.
2. For sprinkler irrigation in groundnut, the sprinkler should be operated for four hours with 50-60% area of one sprinkler overlapping the other sprinkler. Two holes sprinkler should be operated on 1.75-2.0 kg/cm^2 pressure with 0.4-0.5 L/sec/sprinkler discharge of water.
3. Two foliar sprays of 1.0% urea solution at pre- (35-45 DAS) and post-flowering (55-60 DAS) stages increases grain yield of guar under rainfed coarse texture agro-ecological situation.
4. Seed treatment with 1:1 (w/v) garlic extract for two hours effectively reduces the incidence of stem blight disease of cowpea (350 g garlic cloves are sufficient for 1 kg seed).
5. Application of 20 t phosphorous rich organic manure (PROM, 3% high grade rock phosphate) along with 2.5 t gypsum per hectare and recommended dose of NPK (25, 40, 40, kg/ha) enhances yield of spinach, bottlegourd, brinjal and okra in Mansagar area irrigated with raw sewage. It also reduces accumulation of heavy metals *viz.* Pb, Ni, Cr and Cd in plants and hence is safe for human consumption.
6. For the chemical control of Jassid and Fruit borer in okra, the module involving first spray with imidacloprid 200 SL @ 100 ml/ha at 20 DAS, followed by Acephate 75 SP @ 1000 g/ha and Indoxcarb 14.5 SC @ 500 ml/ha at 15 days interval be done.
7. Application at 20 DAS of the IPM module involving two sprays of Kamdhenu @ 5% followed by Novaluron 10 EC @ 500 ml/ha at 15 days interval effectively reduces the infestation of Jassids and Fruit borer in okra.
8. At the appearance of mite in okra, three sprays of Propargite 57 EC @ 1500 ml/ha at 15 days interval effectively reduces the infestation of the mite.
9. For the control of Shoot and Fruit borer in okra, at the time of pest appearance three sprays of Acephate 75 SP @ 1500 g/ha at 15 days interval be done.
10. For the control of Shoot and Fruit borer in brinjal at 30 days after transplanting, first spray be done of Kamdhenu @ 5% followed by the second spray of Btk @ 1500 ml/ha and third spray of Novaluron 10 EC @ 500 ml/ha at 15 days interval.
11. Quinalphos 25 EC sprayed @ 375 and 750 g a.i./ha in brinjal crop dissipated completely at 7th and 10th day, respectively.

2008

(Production recommendations approved in *Kharif* 2008 ZREAC Meeting of Zone-IIIa held on 14th & 15th March 2008)

1. Cluster bean varieties RGC 1038 (for guar growing areas of Northern India), RGC 1055 for semi arid and rainfed guar growing areas of Rajasthan) and RGC 1066 for guar growing areas of Rajasthan have been released and notified for cultivation.

2. Two sprays of thiourea solution @ 0.1% or TGA @ 100 ppm at flowering and pod filling stages increase pod yield in groundnut under irrigated coarse texture agro-ecological situation.

3. Application of vermicompost @ 2.5 t/ha along with bio-fertilizer inoculation enhances grain yield in moong bean under irrigated coarse texture agro-ecological situation.

4. Application of poultry manure @ 2.5 t/ha with half recommended dose of NPK (50:25:25) enhances productivity in bottle gourd under irrigated coarse texture agro-ecological situation.

5. Application of neem cake @ 5 q/ha in moong bean crop effectively reduces the population of root-knot nematode in Dausa region.

6. Application of neem cake or poultry manure @ 200 g/m^2 in tomato during nursery bed preparation effectively reduces the population of root knot nematode in Jamwa Ramgarh Tehsil area (Jaipur).

7. Application of imidacloprid 200 SL @ 60 g a.i./ha (300 ml formulation/ha) with irrigation water in standing groundnut crop effectively manages the whitegrub problem. The treatment be done after 21 days of large beetles emergence due to first good monsoon shower.

8. Propineb 70 WP, sprayed @ 1750 g/ha on green onion, dissipated to below tolerance limit in 7 days.

2007

(Production recommendations approved in *Kharif* 2007 ZREAC Meeting of Zone-IIIa7th & 8th March 2007)

1. In clusterbean, if 2.5 t/ha vermicomposted HGPR is used then apply only 50% recommended dose of nitrogen and phosphorous in the field.

2. Seventy five percent plant density of groundnut with 100% plant density of clusterbean in groundnut - clusterbean intercropping (3:1 row ratio), and application of 100% RDF in groundnut and 50% RDF in clusterbean resulted into higher groundnut equivalent yield.

3. Combined seed inoculation with PSB and PGPR along with *Rhizobium*, each @ 600 g/ha resulted into higher nodulation and grain yield in moogbean.

4. Seed treatment with thiomethoxam 70 WS @ 2.8 mg/kg provides safe storage upto 9 months for moongbean seed. It can be used as an alternate to deltamethrin which is already recommended.

5. In cowpea, vermicomposted HGPR in 15:1 ratio with PSB @ 1.5 t/ha can be applied as an alternative source of phosphatic fertilizers.

6. Application of 75% RDF + 10 t FYM or 5 t VC along with seed inoculation of Azotobacter results in higher green fodder yield of sorghum grown during summer season.

7. A tractor drawn seed cum fertilizer drill for inter cropping has been developed. The machine has eight furrow openers for separate delivery of seed and fertilizer. It has provision for sowing of two types of seeds (pearl millet/ moongbean/clusterbean/urdbean/maiz) at desired seed rate in different rows at variable spacing.

2006

(Production recommendations approved in *Kharif* 2006 ZREAC Meeting of Zone-IIIa held on 8th & 9th March 2006)

1. The use of chemical fertilizers can be reduced by 25% of the recommended dose with the use of vermi-compost @ 2.5 t/ha along with Azotobacter and PSB for taking at par yields in pearl millet (Table-1A & B).
2. Groundnut variety RG-382 has been released and notified for cultivation
3. Groundnut variety TG-37A released and notified by CVRC for Zone-I, which includes Northern part of Rajasthan, with early maturity (100-110 days) was recommended for inclusion in PoP for cultivation with the conditions that it should be sown with the onset of monsoon and be harvested immediately at maturity .
4. Use of poultry manure @ 10 t/ha along with bio-fertilizers (Rhizobium + PGPR + PSB) or bio-pesticides (*Trichoderma*, neem oil, neem cake) in confectionary groundnut results into at par yields to recommended dose of chemical fertilizers .
5. Incidence of clump virus of groundnut can be effectively reduced by growing pearl millet @ 100 kg/ha seed rate as the bait crop. The pearl millet crop be ploughed down at 15 DAS followed by sowing of groundnut .
6. Moongbean variety RMG-492 has been released and notified for cultivation and hence be included in PoP .
7. Gall formation due to root knot nematode (*Meloidogyne incognita*) in moongbean can be effectively reduced by seed treatment with neem oil @ 10 ml/kg seed .
8. Guar variety RGC-1031 has been released and notified for cultivation and hence be included in the PoP .
9. Seed soaking for 8-10 hr in 500 ppm thiourea solution followed by its spray @ 0.1% at knee height and tasselling stages results in significantly higher grain yield in maize .
10. Foliar spray of 500 ppm thiourea solution at branching or flowering stage results in significantly higher seed cotton yield .

2005

(Production recommendations approved in *Kharif* 2005 ZREAC Meeting of Zone-IIIa held on 1st & 2nd March 2005)

Varieties notified: Groundnut – RG-382 and Onion – RO-59

1. In zinc deficient soils, clusterbean seed yield can be increased through one spray of 0.5% $ZnSO_4$ at 25 DAS or 45 DAS if the farmer fails basic application.
2. In iron and zinc deficient soils, cowpea seed yield can be increased through one spray of 0.5% $FeSO_4$ and $ZnSO_4$ at 25 DAS if the farmer fails basic application.
3. Under drought stress, pearl millet grain and Stover yield can be increased through spray of 0.1% thiourea at flowering stage.
4. Incidence of whitefly on chilli can be effectively reduced through application of three fortnightly sprays with acephate 75 SP @ 1.25 kg/ha commencing from pest appearance or under organic farming, through application of vermi-compost @ 4t/ha at the time of transplanting .
5. Incidence of whitefly in tomato can be effectively reduced through spray at pest appearance with 1.0 l/ha monocrotophos 36 SL followed by two sprays of 10% neem seed kernel extract (NSKE) at 10 days interval or with 1.25 l/ha methyl demeton 25 EC followed by two sprays of 7.5% NSKE at 10 days interval.

2004

(Production recommendations approved in *Kharif* 2004 ZREAC Meeting of Zone-IIIa held on 10th & 11th March 2004)

Varieties notified: Muskmelon – MHY-5 and RM-50;
Watermelon – Durgapura Lal and Onion – RO-1

1. 180 kg HGPR composted or vermi-composted with PSB in ratio 15:1 should be applied in field before Groundnut sowing instead of recommended dose of phosphate fertilizer.
2. In Zinc deficient soils apply 25 kg/ha zinc sulphate as band placement in cowpea before sowing.
3. In wheat-guar cropping sequence if 25 kg zinc sulphate per hectare is given at the time of sowing of wheat crop, there is no need to apply zinc sulphate in Guar crop.
4. Seed treatment with Thiram (3g), *Trichoderma* (4g), Chlorpyriphos (25 ml) per kg seed and *Rhizobium* respectively are compatible and effective for control of collar rot of groundnut.
5. In groundnut-wheat crop sequence during first year if full dose of zinc is applied in groundnut crop than in subsequent years, 50% recommended dose of zinc (15 kg zinc sulphate) in groundnut and no application of zinc in wheat crop has been recommended.
6. Mixing of dry neem leaf powder @ 100g/kg seed (having 8-10% moisture) can be safely used to protect from the attack of pulse beetle while storing mungbean seed up to 18 months, without hampering the seed viability.

2003

(Production recommendations approved in *Kharif* 2003 ZREAC Meeting of Zone-IIIa3th & 4th March 2003)

Variety notified : Moonbeam – RMG-492

1. Two foliar sprays of thiourea @ 500 ppm from pre-flowering to flowering stage at 10-15 days interval is recommended for higher yields in pearl millet.
2. Inoculation of pearl millet seed with PSB culture is recommended.
3. Based on residue analysis, the waiting periods for consumption of green and red chillies, sprayed with endosulfan 35 EC (3 days), dimethoate 30 EC (3 days) and cypermethrin 25 EC (5 days) is suggested.
4. Application of gypsum @ 250 kg/ha in groundnut, once in 3 years and 1-2 weeks before sowing is recommended.
5. Seed treatment in groundnut with Imidacloprid 200 SL @ 240 ml/80 kg kernel is recommended for control against white grubs (subject to analysis of residual toxicity in the kernels).
6. Seed treatment with Imidacloprid 70 WS @ 5g/kg is recommended for control of yellow vein mosaic virus in Okra. This insecticidal treatment will also protect the crop against nematodes.

2002

(Production recommendations approved in *Kharif* 2012 ZREAC Meeting of Zone-IIIa held on 5th & 6th March 2002)

Variety notified : Cluster bean – RGC-1017

1. Application of vermi-compost @ 2.5t/ha improves the grain and stover yield of pearl millet.
2. Application of 5.0 t FYM/ha over the planted rows, just after sowing of pearl millet ensures good germination in rainy season.
3. Drenching of Blitox-50 @ 10 kg/ha or 200 mg/l solution with 2 liter sol./m furrow effectively control the Indian Peanut Clump Virus in groundnut.
4. Three sprays of Mancozeb @ 0.2 per cent, at an interval of 10-12 days, beginning with the on-set of the leaf spot of bottle gourd, effectively control the disease.
5. Mixing 100 kg mustard straw with 25 kg fresh dung and 12.5 kg sand, moistened to thirty per cent level, then mixed with a few earthworms and stirred well at an interval of 30 days, results in the formation of a good compost in 90-95 days with 20:1 CN ratio.
6. In deficient soils, application of 10.5 kg/ha copper sulphate (2.5 kg Cu/ha) or 16.5 kg/ha manganese sulphate (5 kg Mn/ha) along with recommended fertilizer (100 kg N, 50 Kg P_2O_5 and 100 kg K_2O/ha) significantly increases the Kharif onion bulb yield when planted through sets.

2001

(Production recommendations approved in *Kharif* 2001 ZREAC Meeting of Zone-IIIa held on14th & 15th February 2001)

1. ***Varieties notified:***

    i. ***Pearl Millet - RHB-121;***

    ii. ***Cowpea – RC-101; RCV-7;***

    iii. ***Clusterbean (Vegetable) – M-83***

    iv. ***Mungbean – RMG-344***

2. Application of 20 kg/ha sulphur through gypsum is recommended for higher productivity of moongbean.
3. Application of 100 kg/ha nitrogen and 150 kg K_2O/ha is recommended for high productivity of onion crop raised through sets in *Kharif* season in addition to a usual dose of 50 Kg $P_2 O_5$/ha.
4. Seed treatment with sodium molybdate @ 13 g/kg seed increases grain yield in cowpea variety RC-19.
5. Application of fluchloralin @ 0.75 kg a.i./ha as a pre-plant incorporation followed by one hand weeding after 35-40 days of sowing is recommended for effective weed control in sesame.
6. Spraying with 0.1 percent Bavistin followed by the second spray after a fortnight at the time of appearance of web blight in moongbean controls the disease.
7. Seed furrow application of chlorpyriphos 10 G @ 20 kg/ha controls white grub in groundnut.