BIHAR AGRICULTURAL UNIVERSITY, SABOUR (BHAGALPUR)

KRISHI VIGYAN KENDRA, MUNGER

ANNUAL ACTION PLAN

(January 2023 To December 2023)

Post – Shankarpur, Distt. – Munger, PIN Code – 811201 (Bihar)

Email :mungerkvk@gmail.com, www.bausabour.ac.in

ACTION PLAN 2023

1. **Name of the KVK:** Krishi Vigyan Kendra Munger.

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Krishi Vigyan Kendra, Munger P.O. Shankarpur, Distt. Munger – 811201, Bihar	9608658459		mungerkvk@gmail.com

2.Name of host organization :

Address	Telephone		E mail
	Office	FAX	
Bihar Agricultural University Sabour (Bhagalpur), Bihar PIN Code – 813210			vcbausabour@gmail.com www.bausabour.ac.in

3.Training programme to be organized (January 2023 to December 2023)

(a) Farmers and farmwomen

Thematic area	Title of Training	No.	Dur.	Venue On/Off	Tentative Date	No. of Participants								
						SC		ST		Other		Total		
						M	F	M	F	M	F	M	F	T
Production of Natural inputs.	Importance of Natural farming	1	2	OFF	12.1.23	2	1	2	1	22	2	26	4	30
IDM/ IPM	Seed treatment of field crops	1	2	OFF	20.1.23	2	1	3	1	25	3	30	5	35
Cropping system	Scientific cultivation of millets	1	2	OFF	7.2.23	2	1	3	1	25	3	30	5	35
Cropping system	Scientific cultivation of mungbean	1	2	OFF	16.02.23	2	2	2	0	22	2	26	4	30
Production of Natural inputs.	Importance & future prospect of Natural farming	1	2	OFF	07.03.23	2	2	2	0	22	2	26	4	30

Crop & cropping system	Importance and prospect of Millets	1	2	OFF	14.03.23	2	2	2	0	22	2	26	4	30
Integrated pest Management. (IPM)	Integrated pest Management in Mungbean	1	2	OFF	03.04.23	2	2	2	0	22	2	26	4	30
Cropping system	Scientific production technology for summer sorghum	1	2	OFF	18.04.23	2	2	2	0	22	2	26	4	30
Integrated farming system	Importance and prospect of IFS model	1	2	OFF	04.05.23	2	2	2	0	22	2	26	4	30
Natural input production	Vermicompost, Ghanamrit, Jivamrit, dashparni production & its uses for Natural Farming	1	2	OFF	26.05.23	2	2	2	0	22	2	26	4	30
Weed Management	Integrated Weed management in paddy	1	2	ON	01.06.23	2	2	2	0	22	2	26	4	30
Reclamation of problematic soil.	Reclamation of problematic soil.	1	2	OFF	14.06.23	2	2	2	0	22	2	26	4	30
PHT	Millets processing & its Value addition	1	2	OFF	05.07.23	2	2	2	0	22	2	26	4	30
Cropping System	Constraints and their remedies for oilseed crops	1	2	OFF	20.07.23	2	2	2	0	22	2	26	4	30

Cropping System	Constraints and their remedies for pulse crops	1	2	OFF	04.08.23	2	2	2	0	22	2	26	4	30
PHT	Millets processing & its Value addition	1	2	ON	17.08.23	2	2	2	0	22	2	26	4	30
Vermicompost Production	Vermicompost production & its uses for Natural Farming	1	2	OFF	05.09.23	2	2	2	0	22	2	26	4	30
Cropping System	Seed production techniques for different rabi crops	1	2	OFF	14.09.23	2	2	2	0	22	2	26	4	30
Cropping system	Agronomic practices in rabi fodder crops	1	2	OFF	06.10.23	2	2	2	0	22	2	26	4	30
PHT	Millets processing & its Value addition	1	2	OFF	27.10.23	2	2	2	0	22	2	26	4	30
Cropping system	Zero tillage technology for late sown wheat crop	1	2	ON	03.11.23	2	2	2	0	22	2	26	4	30
INM	Balance fertilizer application in rabi crop	1	2	OFF	13.11.23	2	2	2	0	22	2	26	4	30
IWM	Weed management in Wheat crops	1	2	OFF	05.12.23	2	2	2	0	22	2	26	4	30
INM	Waste decomposer preparation & its application in natural farming	1	2	OFF	15.12.23	2	2	2	0	22	2	26	4	30
Vegetable cultivation	Scientific cultivation of onion	1	1	OFF	4.01.23	5	0	0	0	15	0	20	0	20
Medicinal and aromatic plants	Production and management technology for medicinal & aromatic plants	1	1	ON	13.01.23	5	0	0	0	15	0	20	0	20

Vegetable cultivation	Scientific cultivation of kharif vegetable	1	1	ON	24.02.23	5	0	0	0	15	0	20	0	20
Off season vegetables	Cultivation of vegetables in summer season	1	1	OFF	25.02.23	5	0	0	0	15	0	20	0	20
Vegetable cultivation	Scientific cultivation of kharif vegetable	1	1	OFF	24.03.23	5	0	0	0	15	0	20	0	20
Cultivation of fruits	Planting material preparation method through grafting and air layering	1	1	ON	28.03.23	5	0	0	0	15	0	20	0	20
Layout and management of orchard	Establishment of guava orchard & its management	1	1	OFF	24.04.23	5	0	0	0	15	0	20	0	20
Nursery raising	Nursery raising methods of cauliflower, tomato and chilli	1	1	ON	03.05.23	5	0	0	0	15	0	20	0	20
Cultivation of fruits	Management of young plants or orchards	1	1	ON	17.05.23	5	0	0	0	15	0	20	0	20
Tuber crops	Production and management technology	1	1	OFF	08.06.23	5	0	0	0	15	0	20	0	20
Nursery raising	Nursery raising methods of cauliflower, tomato and chilli	1	1	ON	20.06.23	5	0	0	0	15	0	20	0	20
Vegetable cultivation	Scientific method of green pea cultivation	1	1	OFF	06.07.23	5	0	0	0	15	0	20	0	20
Nursery raising	Nursery raising methods of cauliflower, tomato and chilli	1	1	OFF	13.07.23	5	0	0	0	15	0	20	0	20

Spices	Production and management technology	1	1	ON	04.08.23	5	0	0	0	15	0	20	0	20
Nursery raising	Nursery raising methods of cauliflower, tomato and chilli	1	1	OFF	24.08.23	5	0	0	0	15	0	20	0	20
Production of Natural input	Scientific method of vermin-compost production	1	1	ON	07.09.23	5	0	0	0	15	0	20	0	20
IFS Model	IFS MODEL for income generation	1	1	OFF	20.09.23	5	0	0	0	15	0	20	0	20
Vegetable cultivation	Rabi vegetable cultivation method	1	1	OFF	12.10.23	5	0	0	0	15	0	20	0	20
Spices cultivation	Rabi spices cultivation method	1	1	ON	19.10.23	5	0	0	0	15	0	20	0	20
Pest management	IPM in vegetable cultivation	1	1	OFF	09.11.23	5	0	0	0	15	0	20	0	20
Waste discomposure	Uses of Waste discomposure in vegetable cultivation	1	1	ON	23.11.23	5	0	0	0	15	0	20	0	20
Vermicompost production	Uses of Vermicompost in fruit cultivation	1	1	OFF	14.12.23	5	0	0	0	15	0	20	0	20
IPM	Disease Management in Potato	1	1	ON	21.12.23	5	0	0	0	15	0	20	0	20
Repair and maintenance of farm machinery implements	Operation methods of reaper and its care maintenance	1	1	OFF	9.01.23	10	2	0	0	15	3	25	5	30
Water management	Water management in Garma vegetable	1	1	OFF	27.01.23	8	2	0	0	15	5	23	7	30

Water management	Water management in Rabi Maize	1	1	OFF	03.02.23	8	2	0	0	15	5	23	7	30
Repair and maintenance of farm machinery implements	Operation methods of reaper and its care maintenance	1	1	OFF	28.02.23	7	2	0	0	18	3	25	5	30
Repair and maintenance of farm machinery implements	Detail knowledge about combine harvester	1	1	OFF	03.03.23	10	2	0	0	15	3	25	5	30
Repair and maintenance of farm machinery implements	Detail knowledge about paddy wheat brush cutter	1	1	OFF	28.03.23	10	2	0	0	15	3	25	5	30
Farm machinery	Detail knowledge about Drone spraying	1	2	OFF	12.04.23	8	2	0	0	15	5	23	7	30
Farm machinery	Detail knowledge about laser guided land leveler	1	1	OFF	18.04.23	10	0	0	0	20	0	30	0	30
Water management	Installation and Maintenance of drip irrigation	1	1	ON	11.05.23	8	0	0	0	20	2	28	2	30
Use of Plastic in farming Practices	Different types of shednet house	1	1	OFF	17.05.23	10	2	0	0	20	0	30	0	30
Water management	Installation and Maintenance of sprinkler irrigation in vegetable cultivation	1	1	ON	8.06.23	5	1	0	0	18	1	23	2	25
maintenance of farm machinery implements	Importance and benefits of summer deep ploughing	1	1	ON	23.06.23	10	0	0	0	20	0	30	0	30

maintenance of farm machinery implements	Detail knowledge about paddy seeder and its calibration for DSR	1	1	ON	06.07.23	10	0	0	0	20	0	30	0	30
Repair and maintenance of farm machinery implements	Benefits of mechanical transplanting of paddy	1	1	OFF	27.07.23	12	0	0	0	18	0	30	0	30
Water Management	Water Management in paddy cultivation	1	1	ON	10.08.23	10	5	0	0	15	0	25	5	30
Repair and maintenance of farm machinery implements	Mechanical method of weed control in paddy cultivation	1	1	ON	24.08.23	8	2	0	0	20	2	28	4	32
Farm energy	Design, construction & utility of Biogas plant	1	1	ON	05.09.23	12	3	0	0	15	5	27	8	35
Farm energy	Detail knowledge about solar energy and its application in agriculture	1	1	ON	21.09.23	12	3	0	0	15	5	27	8	35
Repair and maintenance of farm machinery implements	Benefits of zero tillage application for sowing of different crops	1	1	ON	29.9.23	10	2	0	0	18	2	28	4	32
PHT	Acknowledgement about different types of processing machinery for millets	1	1	ON	11.10.23	10	2	0	0	18	2	28	4	32
Repair and maintenance of farm machinery implements	Detail knowledge about Implements for Seed bed preparation	1	1	OFF	19.10.23	8	2	0	0	19	2	27	4	31

Farm Energy	Detail knowledge about fuel saving in farm tractor	1	1	ON	09.11.23	9	3	0	0	18	2	27	5	32
Repair and maintenance of farm machinery implements	Benefits of zero tillage application for sowing of different crops	1	1	ON	24.11.23	10	2	0	0	18	2	28	4	32
Repair and maintenance of farm machinery implements	Detail Knowledge about solar pump	1	1	OFF	08.12.23	8	2	0	0	15	5	23	7	30
Use of Plastic in Agril.	Construction & utility of poly-tunnel	1	1	ON	14.12.23	9	0	0	0	20	0	29	0	29
Water Management	Water Management in Wheat cultivation	1	1	ON	22.12.23	9	2	0	0	15	4	24	6	30
Total		**73**	**98**			**404**	**90**	**50**	**3**	**1329**	**111**	**1783**	**202**	**1985**

(b) Rural youths

Thematic area	**Title of Training**	**No.**	**Duration**	**Venue On/Off**	**Tentative Date**	**No. of Participants**								
						SC		**ST**		**Other**		**Total**		
						M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**T**
Natural farming	Importance & future prospectus of Natural farming	1	5	ON	23.01.23 to 30.01.23	5	0	5	0	10	0	20	0	20
Cropping system	Seed production technology for paddy crops	1	5	ON	08.05.23 to 12.05.23	5	0	5	0	10	0	20	0	20

Quality seed Production	Quality seed Production of Rabi pulses	1	5	ON	18.09.23 to 22.09.23	5	0	5	0	10	0	20	0	20
Integrated farming system	Prospectus and Importance of integrated farming system	1	5	ON	18.12.23 to 22.12.23	5	0	5	0	10	0	20	0	20
Skill Development	Plant propagation methods in fruit plants	1	5	ON	20.02.23 to 24.02.23	5	0	0	0	20	0	25	0	25
Skill Development	Plant propagation methods in fruit plants	1	5	ON	15.05.23 to 19.05.23	5	0	0	0	20	0	25	0	25
Off season vegetables	Integrated Farming System	1	5	ON	10.07.23 to 14.07.23	5	0	0	0	20	0	25	0	25
Layout and management of orchards	Establishment of Horticultural Nursery	1	5	ON	18.09.23 to 22.09.23	5	0	0	0	20	0	25	0	25
Skill Development	Plant propagation methods in fruit plants	1	5	ON	06.11.23 to 10.11.23	5	0	0	0	20	0	25	0	25
Repair and maintenance of farm machinery implements	Detail knowledge about different types of irrigation pumps	1	7	ON	06-14.02.21	6	0	0	0	18	5	24	5	29
Use of Plastic in Agril.	Construction & utility of polyhouse, shednet house and	1	7	ON	12–19.06.23	5	0	0	0	17	3	22	3	25

	poly-tunnel													
Repair and maintenance of different types of agril. machineries	Operation, Care & maintenance of agril. implements	1	6	ON	14-21.08.23	6	0	0	0	20	4	26	4	30
Installation and maintenance of micro irrigation	Installation methods of drip irrigation with its detail knowledge	1	7	ON	03-10.10.23	9	0	0	0	16	0	25	0	25
Total		**13**	**72**			71	0	20	0	211	12	302	12	314

(c) Extension functionaries

Thrust area/ Thematic area	**Title of Training**	**No.**	**Duration**	**Venue**	**Tentative**	**No. of Participants**								
				On/Off	**Date**	**SC**		**ST**		**Other**		**Total**		
						M	**F**	**M**	**F**	**M**	**F**	**M**	**F**	**T**
Cropping System	Scientific cultivation of Millet crops	1	1	ON	15.02.23	3	-	3	-	24	-	30	0	30
Production of Natural inputs	Natural input production & its application in Natural farming	1	1	OFF	27.06.23	3	-	3	-	24	-	30	0	30

Cropping System	Management of intercropping in rabi pulses with cereals	1	2	ON	01.09.23 to 02.09.23	3	-	3	-	24	-	30	0	30
Cropping System	Crop residue management & zero tillage techniques for late sown wheat	1	1	OFF	24.11.23	3	-	3	-	24	-	30	0	30
Protected cultivation technology	Cultivation method of high valued vegetable crop in poly-house	1	1	ON	20.04.2023	3	2	0	0	10	5	13	7	20
Layout and management of orchards	Establishment of Horticultural Nursery	1	1	OFF	25.05.2023	3	2	0	0	10	5	13	7	20
Production of Natural input	Scientific method of vermin-compost production	1	1	OFF	14.07.2023	3	2	0	0	10	5	13	7	20
Vegetable cultivation	Rabi Season Vegetable Cultivation	1	1	ON	21.09.2023	3	2	0	0	10	5	13	7	20

Integrated Farming	Integrated Farming system	1	1	OFF	24.11.2023	3	2	0	0	10	5	13	7	20
Installation and maintenance of micro irrigation	Utility & importance of Drip irrigation system	1	1	OFF	10.01.23	10	5	0	0	12	3	23	8	30
Repair and maintenance of farm machinery implements.	Detail Knowledge about solar pump	1	1	OFF	13.04.23	12	3	0	0	15	5	27	8	35
Repair and maintenance of farm machinery implements	Detail knowledge about utility of drone technology in agriculture	1	1	OFF	26.7.23	12	3	0	0	15	5	27	8	35
Repair and maintenance of farm machinery implements	Impart Knowledge about innovative farm machinery	1	1	OFF	10.11.23	10	5	0	0	10	5	20	10	30
Total		**17**	**21**	**0**	**0**	**71**	**26**	**12**	**0**	**198**	**43**	**281**	**69**	**350**

1. **On Farm Trial to be conduct:** (Each SMS and P.C. has to conduct 2 OFT and 1 FLD respectively in Rabi Season)

Title of OFT	Treatment/Tech. Option	Replication
Assessment of crop diversification of rice based cropping system	4	7
Assessment of integration of fertilizer in different form on yield of lentil	3	*8*
Assessment of fruit bagging in guava for quality improvement	3	7
Assessment of low cost mulching in vegetable crop production	3	9
Assessment of fertigation in Brinjal	3	9

2. **Front Line Demonstration :**

FLD (2023)

DESCIPLINE	THEMATIC AREA	TECHNOLOGY TO BE DEMONSTRATED	Area (ha.)	NO. OF FARMERS
Agronomy	Cropping System	Finger Millet	10	25
	Cropping System	Perl millet	10	25
	Cropping System	Sorghum	10	25
	Cropping System	Foxtail millet	5	13
	Cropping System	Pigeonpea (CFLD)	20	50
	Cropping System	Lentil(CFLD)	20	50
	Cropping System	Chickpea(CFLD)	20	50
	Cropping System	Linseed (CFLD)	20	50
	Cropping System	Mustard(CFLD)	30	75
Horticulture	Banana(Varietal)	G-9	0.2	12
	Broccoli (Varietal)	Belstar	0.4	15
Agricultural Engineering	Water Management	Water management in Rabi maize	4	12
Agricultural Engineering	Water Management	Water management in paddy cultivation	4	15

On-farm trials to be conducted*

Title : Assessment of Integration of fertilizer in different form on yield of lentil

Thematic area **:** Integrated Nutrient management

Problem identified: Injudicious use of chemical fertilizer

Background : Cultivation of lentil crop find less profitable due to imbalance use of chemical fertilizer

Hypothesis: Application of different form of integrated fertilizer on lentil can enhance yield.

Technology assessed:

Farmer Practice: Seed Treatment + RDF(25:40:0NPK kg/ha)

Technological Option1:50% of RDF +WS 18:18:18 @5 gm./ltr water (Single spray at pre flowering stage)
Technological Option2: Seed treatment with PSB + Rhizobium, 50% of RDF + WS 18:18:18 @5 gm. /ltr water (Single spray at pre flowering stage) (RDF, concerned SAU/ICAR recommendation)

Characteristic of technology: IPL 316, duration 120-125days, yield potential 18-20 q/ha
50% of RDF +WS 18:18:18 @5 gm./ltr water (Single spray at pre flowering stage) can enhance lentil yield
Seed treatment with PSB + Rhizobium, 50% of RDF + WS 18:18:18 @5 gm. /ltr water (Single spray at pre flowering stage can enhance lentil yield.

Source of Technology: BAU, Sabour OFT finalization Workshop

No. of replication/farmers: 7

Performance Indicator: Yield and yield attributes, Harvest Index

Economic Indicator:
1. Cost of cultivation (Rs./ha)
2. Gross return (Rs/ha)
3. Increase in yield (%)
4. B.C- ratio

Critical input: Seed , chemical fertilizer, bio fertilizer etc
Cost of Input: Rs.15000/-
Lesson learn: 50% of RDF +WS 18:18:18 @5 gm./ltr water (Single spray at pre flowering stage) or Seed treatment with PSB + Rhizobium, 50% of RDF + WS 18:18:18 @5 gm. /ltr water (Single spray at pre flowering stage) will enhance lentil yield.

Title : Assessment of Diversification of rice-based cropping systems
Thematic area : crop diversification

Problem identified: low profitability of existing cropping system

Background : Cultivation of Rice wheat cropping system is less profitable.

Hypothesis: Diversification of Rice wheat cropping system can enhance profitability

Technology assessed:

Farmer Practice: Rice – Wheat (prominent cropping system of district)
Technological Option1: Rice- Maize + Potato
Technological Option2: Rice-Maize + Vegetable Pea
Technological Option3: Rice-wheat –Green gram.

Characteristic of technology: Rice- Maize + Potato, Rice-Maize + Vegetable Pea, Rice-wheat –Green gram different cropping system can enhance profitability.

Source of Technology: BAU, Sabour OFT finalization Workshop

No. of replication/farmers: 7

Performance Indicator: Yield and yield attributes, Harvest Index,

Economic Indicator: 1. Cost of cultivation (Rs./ha)

2. Gross return (Rs/ha)

3. Increase in yield (%)

4. B.C- ratio

Critical input: Seed etc
Cost of Input: Rs.15000/-
Lesson learn: Rice- Maize + Potato, Rice-Maize + Vegetable Pea, Rice-wheat –Green gram different cropping system will enhance profitability.

Assessment of fruit bagging in Guava for quality improvement.

Thematic area: Protected cultivation

Problem identified : Infestation of different types of pest

Background : There is severe loss due to infestation of pest in guava. Detoriated quality of guava reduces the marketing value and self life.

Hypothesis: Fruit bagging will decrease pest infestation . Good quality of fruit will increase the marketing value and self life.

Details of technology selected:

Farmers Practice – No bagging
T.O.1– Cellophane bag cover
T.O.2– Paper bagging

Source of Technology: IARI,New Delhi

No. of replication/farmers : 7

Economic Indicator: 1. Cost of cultivation (Rs./ha)

2. Gross return (Rs/ha)

3. Increase in yield (%)

4. B.C- ratio

Performance indicator: Days to maturity, fruit fly damage(%), Disease incidence (%), Physical damage(%), Fruit wt (gram), Appearance pulp colour, self life(days), Yield per tree or per ha

Plot size : 1050 sq. meter (0.105)

Critical input: Cellophane bag, Paper bagging

Cost of Input : Rs 10000

Lesson learn:

Assessment of different type of low cost mulching in vegetable production

Thematic area: Water management (Agril. Engg.)

Problem identified: Less yield of vegetable with deterioted quality by applying more quantity of water

Background : Farmer grow vegetable without mulching. They achieve less with deterioted quality by applying more fertilizer and irrigation water

Hypothesis: Low cost Natural mulch saves evaporation loss of irrigation water and fertilizer. It creates favourable micro climate in rhizosphere of plant and useful bacteria lie rhizobium, Pseudomonas and others

Details of technology selected:

Farmer practice : No mulch

Technical option1 : Mulching with banana dry leaf

Technical option2 : Mulching with crop residue (husk, Straw, dry leaves or Stem)

Characteristic of technology: Mulching of plant rhizosphere saves irrigation water along with fertilizer. It yields more productivity with less input

Source of Technology: Pallela Saisup (et al) Mulching in vegetable, State agril. university, Mojerla, Telangana

No. of replication/farmers : 09

Performance Indicator: Water requirement (mm),Water use efficiency (q/ha mm), Saving of water (%), increased yield(q/ha,)

Economic Indicator:

1. Yield (q./ha)
2. Cost of cultivation (Rs/ha)
3. Gross Return (Rs/ha)
4. B.C- ratio

Plot size= 500 m^2 (Total OFT area 0.42 ha)

Critical input: Mulch material and vegetable plantlet.

Cost of Input : Rs15,000/=

Lesson learn: Yields more crop with less input cost.

Assessment of effect of fertigation in Brinjal

Thematic area: INM (Agril. Engg)

Problem identified : Farmers apply more fertilizer and achieves less yield. Application more quantity of fertilizer detoriates soil fertility and yields low.

Background :Fertigation is latest innovative application method of fertilizer which saves fertilizer and yields more eco friendly.

Hypothesis: Fertilizer plays a vital role in crop production which yields more with best quality by ferigation method.

Details of technology selected:

Farmer practice : **Broad casting / soil incorporation**

Technical option1 : Band application in row planted crops.

Technical option2 : Fertigation through drip irrigation

Characteristic of technology: Fertigation is method of fertilizer application along with irrigation water through drip irrigation. It saves fertilizer and yields more with best quality. It also mitigates evaporation, leaching , surface runoff and soil fixation losses of fertilizer.

Source of Technology: Sajal Dev verma et all"Drip Fertigtion In Vegetaable Crop productivity and resource efficiency " (Vegetable Department., G.B. Pant University)

No. of replication/farmers : 09

Performance Indicator: Amount of fertilizer applied(kg/ha), Total water applied(mm), Saving of fertilizer(%), Fertilizer use efficiency(q/ha kg)

Economic Indicator:

1. Yield (q./ha)
2. Cost of cultivation (Rs/ha)
3. Gross Return (Rs/ha)
4. B.C- ratio

Plot size=500m^2 (Total OFT's Area : 0.42 ha)

Critical input: Drip irrigation kit, water soluble fertilizer and other inputs

Cost of Input : Rs30,000/=

Lesson learn: Save fertilizer and environment with drip fertigation.