

## List of Projects -2014

### Crop Improvement Division

**CI 1.6: Collection, evaluation, documentation and conservation of forage crops germplasm**

PI: G. Sahay, Tejveer Singh, S. Ahmed, D. C. Joshi and P. Saxena

**CI 2.6: Genetic Improvement of Sorghum under Different Use Patterns**

PI: D.C. Joshi, R.V. Kumar, N. Manjunath and Sultan Singh

**CI 2.7: Development of dual purpose maize**

PI: S. Ahmed, R. P. Sah, P. Saxena and M.1. Azmi

**CI 2.8: Development of high yielding dual and multicut fodder oats.**

PI: S. Ahmed, R. P. Sah, K.K. Singh and H V Singh

**CI 2.9: Genetic Improvement of Pearl millet (bajra) and bajra- napier (BN) hybrids for higher biomass production**

PI: Kumar Durgesh, A. K. Mall, A.K. Mishra and N Manjunath

**CI 2.10: Genetic improvement of barley for forage and grain yield.**

PI: A. K. Singh and P. Saxena

**CI 2.11: Genetic improvement for dual-purpose stay-green pearl millet.**

PI: A. K. Singh, Archana Singh and S.S. Meena

**CI 3.8: Genetic improvement in fodder Cowpea *Vigna unguiculata* with special reference to resistance to pests.**

PI: G. Sahay, N.K. Shah, Kumar Durgesh and R.B. Bhaskar

**CI 3.10: Genetic improvement of Berseem for root rot resistance, late maturity and biomass**

PI: Tejveer Singh, O. R. Malaviya, P. Kaushal and R. B. Bhaskar

**CI 4.5: Genetic improvement of guinea grass for higher biomass production and tolerance for abiotic stresses**

PI: V. K Yadav and P. Kaushal

**CI 5.4: Basic studies on apomixis and generating cytogenetic stocks in *Pennisetum* and *Panicum* agamic complex**

PI: P. Kaushal, K.K. Dwivedi and A. Radhakrishna

**CI 6.8: Development of Molecular markers database in forage grasses with special reference to stress responsive EST -SSRs.**

PI: A. Radhakrishna and K. K. Dwivedi

**CI 7.11: Biochemical and Molecular Approach for Characterization of Drought Tolerant Forage Sorghum.**

PI: M K Srivastava, C K Gupta

**CI 8.20: Integrated disease management for root rot & dry root rot in cowpea (*Vigna unguiculata* (L) Walp.**

PI: P. Saxena and R.B. Bhaskar

**CI 8.24: Integrated pest management in an intensive forage production system**

PI: N. K. Shah, R. B. Bhaskar and M. 1. Azmi

**CI 8.26: Management of nematode and fungal pathogen associated with root rot complex of cowpea.**

PI: M.1. Azmi and R.B. Bhaskar

**CI 8.27: Collection and characterization of biodiversity in insect pests, pathogens and nematodes of fodder crops**

PI: N. K. Shah, P. Saxena, M. 1. Azmi and N. Manjunath

**Himachal Pastureland Unit, Palampur**

**RRCP 9: Evaluation and maintenance of perennial forage grasses and legumes in Mid Himalyan region**

PI: Dr. Sudesh Radotra and Dr. D C Joshi.

**Inter- Institutional collaborative programme: Evaluation of locally available plants for feeding of hill animals**

PI: Dr. S. Radotra as Co PI

**RRS, Srinagar**

**RSJ&K4.1: Augmenting forage resource availability through development of hortipasture systems**

PI: Suheel Ahmad

**RSJ&K1.1: Collection, Evaluation, Characterization and Documentation of temperate forage germplasm**

PI: Dr. O.K. Verma and Suheel Ahmad

**RSJ&K4.2: Establishment and Evaluation of Almond based Hortipastoral System in Karewa uplands of Kashmir**

PI: Suheel Ahmad and D.K. Verma

**Crop Production Division**

**CP 1.1.8: Market led fodder production technology for profit maximization in peri-urban agglomeration.**

PI: R.K. Agrawal, Mukesh Choudhary, M.M. Das and Satyapriya

**CP 1.1.9: Development of Agro-techniques for the cultivation of Chaya (*Cnidioscolus aconitifolius*)**

PI: A. K. Dixit

**CP 1.1.10: Standardization of Agro-techniques for newly released varieties of fodder crops.**

PI: Mukesh Choudhary and G Prabhu .

**CP 1.1.11: Effect of long term organic and conventional nutrient management on soil fertility and sustain ability of cropping system**

PI: A.K. Dixit, M. K. Srivastava, H.Y. Singh and S. K. Rai

**CP 1.5.1: Tillage management practices in fodder-food cropping system for sustainable production.**

PI: A. K. Dixit, R.K. Agrawal and C.S. Sahay

**CP 2.1.13: Fodder based contingent crop planning modules for rainfed semi-arid region.**

PI: A. K. Dixit, S. K. Rai and Mukesh Choudhary

**CP 2.1.14: Climate resilient forage production system under rainfed situation**

PI: Sunil Kumar, Kiran Kumar T. and J.B. Singh

**CP 2.3.10: Water requirement of hybrid Napier- berseem intercropping system under organic nutrition in semi arid region.**

PI: Pradeep Behari, J. B. Singh and R. K. Agrawal

**CP 2.3.11: Forewarning models for major pests of cowpea and berseem.**

PI: J. B. Singh, Pradeep Saxena and Pradeep Behari

**CP 2.3.12: Studies of crop growth simulation model for fodder cowpea using CERESGrain Cowpea Model for agronomic management and to study the impact of projected climate change on its productivity in semiarid region of India.**

PI: S.K. Rai and D. Deb

**CP3.1.1: Enhancing forage production in problem soils**

PI: Inder Dev and Manoj Chaudhary

**CP3.1.2: Development of phosphate solubilising Biofertilizer suitable for fodder crops of problem soils .**

PI: Srivnivasan, Manoj chaudhary and Radhakrishna

**CPI.5.2: Resource conserving technologies (RCT's) for improved productivity and soil health in fodder sorghum based cropping systems under limited irrigation**

PI: Krian Kumar and Manoj Chaudhary

**CP1.4.6: Evaluation of selected herbicides for development of IWM module in forage crops**

PI: Prabhu G. and D.R. Palsaniya

**New Projects:**

**Integrated Nutrient Management in Napier bajra hybrid based cropping system for sustainable fodder production and soil health**

PI: Manoj Chaudhary, Mukesh Chaudhary and M M Das

**Identification and characterization of root architecture traits associated with high biomass under different cutting regimes in oat and guinea grass - (2014-2017)**

PI: Dr. Anita Kumari and C. K. Gupta

**Western Regional Research Station, Avikanagar**

**RSA 10: Evaluation of Promising neem strains under agri-silvi-pasture system in the semiarid conditions**

PI: SS Meena

**RSA 11: Maximization of quality seed production and standardization of seed testing protocol in range grasses and legumes**

PI: R.P. Nagar

**RSA 12: Influence of moisture conservation techniques on performance of different forage crops and cropping systems under semi arid environment**

PI: S S Meena

**RSA 13: Germplasm enrichment, evaluation, maintenance and genetic improvement of forage crops for arid, semi-arid regions**

PI: S S Meena, R.P. Nagar

**RSA 14: Evaluation for seed yield and quality in *Cenchrus* species in different seasons under semi-arid environment (July 2014 - 2017)**

PI: RP Nagar and SS Meena

**RSA 15: Gene specific allele mining in *Cenchrus* with special emphasis on abiotic stress tolerance**

PI: Divya, PS, SS Meena and K.K. Diwedi

**GSM Division**

**GSM 1.17: Evaluation of range legumes of semi arid region for quality forage**

PI: Archana Singh

**GSM 1.18. Strengthening and digitization of herbarium fodder value plant**

PI: Archana Singh & D Deb

**GSM 1.19: Resource inventory and mapping of grasslands at Jharkhand using GIS remote sensing**

PI: N.S.Ekka, Boini Narsimlu, K.K. Singh and S.K. Rai

**GSM 2.9: Diversity of arbuscular mycorrhizal fungi associated with grasses and its role in forage production**

PI: HV Singh

**GSM 3.11: Silvopasture system for round the year top feed and fodder availability**

PI: R V Kumar, Sunil Kumar and HY Singh

**GSM 3.12: Evaluation of shrubs in *Hardwickia binata* based three tier silvopasture systems under semiarid rainfed situation**

R.Y. Kumar and S N Ram

**GSM3.14. Productivity of *Hardwickia binata* based silvopasture systems under moisture conservation practices in rain fed condition**

PI: SN Ram, M M Das and Mohd Akram

**GSM 4.12.1: Productivity of aonla based hortipastoral system under different soil and water conservation practices. Phase II (2012-17)**

PI: Sunil Kumar, Ramesh Singh, Sunil Tiwari, H Y Singh

**GSM 4.12.2: Establishment of aonla based hortipastoral system with different soil and moisture conservation practices under rainfed situation**

PI: Sunil Kumar

**GSM 4.14: Development of guava based hortipastoral system with natural resource conservation (II Phase 2013-2018)**

PI: Sunil Kumar

**GSM 4.16: Evaluation of Tamarind based hortipastoral system in relation to different moisture conservation practices under semi arid condition.**

PI: Sunil Kumar, R.V. Kumar and Akram Ahmed

**GSM 4.18: Evaluation of substrate dynamics for integrated nutrient management in bael based hortipastoral system**

PI: S N Ram, HY Singh and Sunil Kumar

**GSM:4.19 Studies on microflora of *Bahauia* and aonla based silvi-hortipasture system**

PI: HV Singh and Ritu Marwar

## **Farm Machinery & Post Harvest Technology**

### **AE 2.1: Development of value added feed products for different categories of livestock and their storage**

PI: P.N. Dwivedi, P K Pathak, C.S. Sahay, S K Singh

### **AE 3.1: Evaluation of water resources for efficient utilization in enhancing productivity of forage crops**

PI: B Narsimlu, C S Sahay, G. Prabhu

## **Division of Seed Technology**

### **STR 3.7: Developing seed standards and enhancing seed production in forages.**

PI: D. Vijay and C.K. Gupta

### **STR 3.8: Low input, eco-friendly storage of Forage Seeds.**

PI: D. Vijay and H. V. Singh

### **STR 3.9: Quality Seed Production in Forage Grasses: Physiological and Biochemical interventions**

PI: C.K. Gupta, M.K. Srivastava, D.R. Malaviya and D. Vijay

### **STR 3.10 : Biochemical Analysis of Forage Seeds during Post Harvest Storage**

PI: C.K. Gupta, D. Vijay and M.K. Shrivastava

### **STR 3.12: Livelihood improvement of farmers through quality seed production of fodder crops.**

PI: Vikas Kumar, Satyapriya, and P. Sharma,

### **STR 3.13: Crop management practices for maximising seed production in cowpea and oat**

PI: Vinod Kumar Wasnik, Vikas kumar, and S.R. Kantwa,

### **STR 3.14: Chemical weed control in Berseem for seed production.**

PI: Vinod Kumar Wasnik, A. Maity, and. S.R. Kantwa,

### **STR 3.15: Morpho-phenological studies of seed setting and germination in tropical range grasses**

PI: D Vijay, CK Gupta, A Maity, D R Malaviya

### **STR 3.16: Enhancing forage seed quality through coating and pelleting**

PI: A Maity, D Vijay, CK Gupta, Sanjay K Singh

### **STR 3.17: Identification of physiological and harvesting maturity stage in dinanath and berseem crop**

PI: CK Gupta, D Vijay

## **PAR Division**

**PAR 2: Studies on organic feeding system for milk and meat production**

PI: S.B. Maity

**PAR 3.1: Methane production potential of tropical fodders/feeds vis-a-vis efficacy of tree foliages secondary metabolites for defaunation and methanogenesis**

PI: Sultan Singh, B.K. Bhadoria

**PAR 4.1: Performance of mixed herd of sheep and goats under grazing in different silvopasture systems**

PI: S. K. Mahanta, S.N. Ram, Archana Singh and N. Das

**PAR 4.2: Long term effect of different grazing intensities on soil health and pasture-animal productivity**

PI: S. K. Mahanta, S. N. Ram, Archana Singh, Sultan Singh, N. Das, A.K. Rai, R. Srinivasan, J.B. Singh, Akram Ahmed and S.B. Maity.

**PAR 6.2: Utilization of chaya (*Cnidocolus aconitifolius*) for efficient livestock production**

PI: P. Sharma, K.K. Singh, M.M. Das, A.K. Misra and S.B. Maity

**'Potential of nano zinc oxide on zinc bioavailability and its effect on blood biochemical changes in sheep'** (PI: K K Singh, A Maity and S.B. Maity).

**'Development of nutritionally balanced and economic feeding system for livestock through cereal-legume intercropping'** (PI: S B Maity, K K Singh, N Das and G Prabhu).

**'Nutritional Improvement of low grade roughages for higher livestock production'** (PI: MM Das, Kumar Durgesh, A Radhakrishn, Divya, M.K. Srivastava and D K Verma)

**'Endozoochorous dispersal of seeds through sheep and goat faecal pellets: Recovery, germinability and emergence of range grasses, legumes and shrubs species'** PI: Dr N Das & Dr D R Malaviya

**Social Science Division**

**SS1.03: Development and standardization of scale to measure socio-economic status of a farmer practicing livestock based farming**

PI: Satyapriya , Purushottam Sharma, Ashok Kumar and Vikas Kumar

**SS 2.04: Technology gap analysis of fodder production technology in Bundelkhand region**

PI: Manju Suman, Ashok Kumar, Vikas Kumar

**SS 2.05: Capacity - building of farm women on animal rearing practices.**

PI: Sadhna Pandey, Purushottam Sharma and Satyapriya

**SS 2.06: Scaling up of Fodder Technologies at Farmer's Field (*ADARSH CHARA GRAM*)**

PI: Satyapriya and Manju Suman

**SS 3.02: Livelihood improvement of farmers through quality seed production of fodder crops**

PI: Vikas Kumar, Satyapriya, and P. Sharma

**Southern Regional Research Station, Dharwad**

**RSD 12: Breeding for forage yield quality, biotic and abiotic tolerance in alfalfa (*Medicago sativa* L.)**

PI: K Sridhar, Edna Antony, S Kulkarni, Sultan Singh

**RSD 15: Participatory fodder production under mango orchards**

PI: Drs. N Biradar , B G Shiv Kumar and Vinod Kumar

**RSD 16: Optimizing Seed production and seed standardization protocols in range grasses and legumes**

PI: Vinod Kumar, K Sridhar

**RSD 19: Studies on insect fauna and its influence on forage and seed yield in Lucerne**

PI: N S Kulkarni, Vinod Kumar, B G Shivkumar S Karthigeyan

**RSD 20: Training needs analysis of clientele on fodder promotion and development**

PI: N Biradar

**RSD 21: Studies on commercialization and utilizations of fodder technologies**

PI: N Biaradar, Vi nod Kumar and R.P. Nagar

**RSD 22: Physiological interventions for improving seed yield in Brachiaria species**

PI: Edna Antony and K.Sridhar

**RSD 23: Agro-ecological evaluation of different hortipastoral systems for peninsular India**

PI: B G Shivakumar, N S Kulkarni

**RSD 24: Physiological evaluation of perennial legumes for forage potential**

PI: Edna Antony

**Breeding for dual purpose cowpea genotypes with better yield, quality and biotic tolerance**

PI: K. Sridhar, N.S. Kulkarni & A.K.Mishra

**RSD 25: Studies on insect pests of cowpea and their management**

PI: N S Kulkarni

**External Funded Projects:**

**DST Project**



Ploidy regulated expression of genes involved in mega gametophyte, apomixis and its component traits

### **DBT Project**

Identification of ovule and embryo sac specific promoters and their validation in transgenic *Cenchrus ciliaris*

### **PPV & FRA Project**

Developing guidelines for conduct of DUS testing for Oat, Cowpea and Guinea grass

**DAC ICARDA ICAR collaborative project -:** FSM -pulses on enhancing grasspea production in Eastern and North Eastern states for animal feed, safe human food and sustainable rice-based production system in India" in the district of Jhansi of UP

### **NICRA**

National Initiative on Climate Resilient Agriculture (NICRA) project

#### **Inter-institutional project**

- Inter-institutional Project with CITH: Augmenting Forage Resource Availability through Development of Hortipastoral systems.
- Inter-institutional Project with IVRI Regional Station Palampur: Evaluation of locally available plants for feeding of hill animals

#### **IGFRI-NIANP inter-institutional project**

- Improvement in nutritional quality & yield of grasses and exploitation of non-conventional fodder resources for higher livestock production

#### **AICRP on chickpea (Project No. 2000000003)**

- National Initiative on Climate Resilient Agriculture: Technology Demonstrations in a Participatory Action Research mode

#### **AICRP (ICAR)**

- Improvement of feed resources and nutrient utilization in raising animal production
- Network project of Buffalo: Performance recording and improvement of Bhadwari Buffaloes. (Presented on 22.05.2014)

#### **AICRP**

PFT and FLD of improved implements through AICRP on FIM

1. Prototype feasibility testing of improved implements
2. Frontline demonstration of farm implements and machinery in selected region of the country.

#### **New flagship project**

- Integrated farming system models for sustainable productivity and income of small holders in Bundelkhand region in Central India (Inter-institutional project)
- Synthesis and application of P, Fe and Zn nano-particles for increased fodder and seed production

**NAIP Component-1**

- Sub project on "Implementation of Open Access Repositories"

**NAIP Component-3**

- Integrated farming system for sustainable rural livelihood in undulating and rainfed areas of Jhabhua and Dhar districts of Madhya Pradesh

**Network Project**

- Network Project of Buffalo: Performance recording and improvement of Bhadawari Buffaloes

**NFBSFARA**

- Understanding the adaptation mechanism of wild forage halophytes in the extreme saline sodic kachchh plains for enhancing feed resources- NFBSF ARA

**Flagship project**

- Integrated farming system models for sustainable productivity and income of small holders in Bundelkhand region in Central India (Inter- institutional project)( Sunil Kumar, D.R. Plasaniya, Sunil Seth, MM Das, CS Sahay, Kiran, T., S. K. Rai, Vikas Kumar, M Chaudhary, M. Akram)
- Synthesis and application of P, Fe and Zn nano-particles for increased fodder and seed production (R. Srinivasan" Rathakrishanan and Maity)