

List of Projects - 2015

FM&PHT Division

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- (CRSC.IGFRI-SIL.20 14.D6.005.00064) Development of greenhouse dryer utilizing optimum solar energy for fodder crop (PI: S.K. Singh, P.K. Pathak)

AE 3.1. Evaluation of water resources for efficient utilization in enhancing productivity of forage crops. (PI: B Narsimlu, C S Sahay & G. Prabhu)

Regional Research Station, Srinagar

RSJ&K -1.1: Collection, Evaluation, Characterization and Documentation of temperate forage germplasm. (PI: D K Verma & Suheel Ahmad)

RSJ&K -4.1: Augmenting forage resource availability through development of hortipasture system. (PI: Suheel Ahmad)

RSJ&K -4.2: Establishment and Evaluation of Almond based Hortipastoral System in Karewa uplands of Kashmir. (PI: Suheel Ahmad & Dilip Kumar Verma)

RRCP-9: Evaluation and Maintenance of Perennial forage grasses and legumes in mid Himalayan region. (PI: S. Radotra and Tejveer Singh)

Externally Funded Projects

• **DST Ploidy: *Ploidy regulated expression of genes involved in mega gametophyte development, apomixis and its component traits.*** (PI: P Kaushal, KK Dwivedi, DR Malaviya and AK Roy)

• **DBT promoter: *Identification of ovule and embryosac specific promoters and their validation in transgenic *Cenchrus ciliaris*.*** (PI: KK Dwivedi, A Radhakrishna and P Kaushal)

• **NICRA Project (*Tech. Demonstrations in a Participatory Action Research Mode*)** (PI, R K Agrawal):

• **Network Project on Bhadawari buffalos** (PI: B.P. Kushwaha, S B Maity and Sultan Singh)

• **NICRA- Strategic Research- *Impact assessment of climate change on fodder production. Grazing and rangeland ecosystem and mitigation strategies in XII plan.*** (PI Sunil Kumar)

IGFRI-NIANP Collaborative program: *Improvement in nutritional quality & yield of grasses and utilization of non-commercial fodder resources for higher livestock production* (PI Sultan Singh).

• **AMAAS Project-Development of PGP inoculants bioformulations for rhizospher management in enhancing biomass in fodder crops.** PI - R. Srinivasan.

• **ICARDA-ICAR collaborative project: Enhancing fodder and nutritional security of livestock in semi arid regions of India through Opuntia, Lathyrus and Vicia sps.** (PI- Sunil Kumar).

Crop Improvement Division

CI 1.6: Enrichment, evaluation, conservation and documentation of genetic resources of fodder crops. (PI: Tejveer Singh, S. Ahmed, D. C. Joshi, G. Sahay, P. Saxena, SevaNayak D. and A. K. Mall)

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.I. 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 3.10: Genetic improvement of berseem for root rot resistance, late maturity and biomass. (PI: Tejveer Singh, D. R. Malaviya, Ritu Mawar and Anita Kumari)

CI 2.10 Genetic improvement of barley for forage and grain yield. (PI: A.K. Singh & P. Saxena)

CI 2.11 Genetic improvement of dual purpose pearl millet. (PI: A. K. Singh, Archana Singh and S.S. Meena)

CI 2.9 Development of pearl millet and bajra-napierhybrid for high biomass production. (PI: V. K. Yadav, A. K. Mall and A.K. Mishra)

CI 4.5 Genetic improvement of guinea grass for higher biomass production and tolerance to abiotic stresses. (PI: V. K. Yadav and Seva Nayak D)

CI 5.4: Basic studies on apomixis and generation of 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 and C. K. Gupta)

CI 8.28: Integrated pest management in different forage fodder production systems in various regions of India. (PI: P Saxena, NK Shah, RK Agarwal, NK Kulkarni, RP Nagar, DK Verma, SK. Radotra)

Regional Research Station, Avikanagar

RSA-10: Evaluation of promising neem strains under agri-silvi-pasture system in the semi-arid conditions. (PI: SS Meena)

RSA-13: Germplasm enrichment, evaluation, maintenance and genetic improvement of forage crops for arid and semi-arid regions. (PI: S S Meena)

RSA 14: Evaluation for seed yield and quality in *Cenchrus* species indifferent seasons under semi arid environment. (PI: R.P. Nagar and S.S. Meena)

RSA-15: Gene specific allele mining in *Cenchrus* with special emphasis on abiotic stress tolerance. (PI: Divya, S.S. Meena, KK. Dwivedi)

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 & Satyapriya)

CP.1.1.11: Effect of long term organic and conventional nutrient management on soil fertility and sustainability of cropping system. (PI: AK. Dixit, M.K. Srivastava, S.K. Rai and H.V. Singh)

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 1.5.2: Resource conserving technologies (RCT's) for improved productivity and soil health in fodder sorghum based cropping systems. (PI: Kiran Kumar, T, D.R. Palsaniya and Manoj Chaudhary)

CP.1.4.6: Evaluation of New herbicides for development of IWM module in Forage crops. (PI: Prabhu,G and D.R. Palsaniya)

CP. 2.3.12: Studies of dynamic crop growth simulation model for fodder cowpea using crop grow- Grain Cowpea Model for agronomic management and impact of climate change on its productivity in few location of India. (PI: S.K. Rai and D. Deb)

C.P.2.1.14: Climate Resilient Forage Production Systems under Rainfed Situation. (PI: Sunil Kumar, Kiran Kumar T. and J.B. Singh)

CP 3.3.1: Identification and characterization of root architecture traits associated with high biomass under different cutting regimes in oat and guinea grass. (PI: Anita Kumari and C K Gupta)

CP 3.1.2: Development of Phosphate solubilising Bio-fertilizer suitable for Fodder Crops of problem soils. (PI: R. Srinivasan, Manoj Chaudhary and Radhakrishn A)

CP-1.1.12-Integrated Nutrient Management in Napier bajra hybrid based cropping system for sustainable fodder production and soil health. (PI: Manoj Chaudhary, Mukesh Choudhary & M.M. Das)

CP 2.3.11: Forewarning models for major pests of cowpea and berseem. (PI: JB Singh, P. Saxena and P Bihari)

Integrated Farming System: Integrated farming system models for sustainable productivity and income of small holders in Bundelkhand region in Central India. (Inter-institutional project) (PI: Sunil Kumar, D.R. Plasaniya, Sunil Seth, MM Das, CS sahay, Kiran, T., S. K. Rai, Khem Chand, M Chaudhary, M. Akram)

Nano-technology: Synthesis and application of P, Fe and Zn nano-particles for increased fodder and seed production. (PI: R Srinivasan, A Radhakrishana, A. Maity)

GSM Division

GSM 3.11: Silvopasture system for round the year top feed and fodder availability. (PI: R.V. Kumar, Sunil Kumar, H.V. Singh)

GSM 1.19: Resource Inventory and Mapping of Grassland of Jharkhand Using GIS and Remote Sensing. (PI: N.S. Ekka, J.P. Singh, S.K. Rai)

GSM 2.9: Diversity of arbuscular mycorrhizal fungi associated with grasses and its role in forage production. (PI: H V Singh)

GSM 3.14: Productivity of Hardwickia binata based silvopasture systems under moisture conservation practices in rainfed condition. (PI: S N Ram, MM Das and A. Ahmed)

GSM 3.12: Evaluation of shrubs in Hardwickia binata based three tier silvopasture systems under semiarid rained situation. (PI: S N Ram and R V Kumar)

GSM 4.12.1 Productivity of *aonLa* based hortipastoral system under different soil and water conservation practices. Phase II (2012- I7). (PI: Sunil Kumar, Ramesh Singh, & Sunil Tiwari)

GSM 4.14: Development of *guava* based hortipastoral system with natural resource conservation. (PI: Sunil Kumar)

GSM 4.18: Evaluation of substrate dynamics for integrated nutrient management in *baeL* based hortipastoral system. (PI: Sunil Kumar)

GSM 4.19: Studies on microflora of *Bahauinia* and *AonLa* based silvi-hortipasture system.
(PI: H V Singh)

SRR Station, Dharwad

RSD 12: Breeding for forage yield quality, biotic and abiotic tolerance in alfalfa (*Medicago sativa* L.).(PI: K Sridhar, Edna Antony, NS Kulkarni, Sultan Singh)

RSD 15: Participatory fodder production under mango orchards. (PI: N Biradar, B.G. Shivakumar 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 and Vinod kumar)

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 Biradar, Vinod Kumar and R.P. Nagar)

RSD 22: Physiological interventions for improving seed yield in *Brachiaria* species. (PI: Edna Antony, Vinod Kumar and K. Sridhar)

RSD 23: Agro-ecological evaluation of different hortipastoral systems for peninsular India.
(PI: BG Shivkurnar, N.S. Kulkarni)

RSD 24: Physiological evaluation of perennial legumes for forage potential. (Edna Antony)

"Breeding dual purpose cowpea genotypes with better yield, quality and biotic tolerance"
PI: K Sridhar, Vinod Kumar and NS Kulkarni

Seed Technology

STR 3.7: Developing seed standards and enhancing seed production in forages. (PI: D. Vijay and C.K. Gupta)

STR 3.15: Morpho phonological studies of seed setting and germination in Range grasses.
(PI: D. Vijay, C.K. Gupta, A Maity, D.R. Malaviya)

STR 3.8: Low input, eco-friendly storage offorage 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 3.13: Crop management practices for maximizing 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: V.K. Wasnik, A. Maity and SR Kantwa)

STR 3.16: Enhancing forage seed-quality through coating and pelleting. (PI: A. Maity, D. Vijay, C.K. Gupta, S.K. Singh)

STR 3.17: Identification of physiological and harvesting maturity stage in dinanath and berseem crop. (PI: C.K. Gupta & D. Vijay)

PAR Division

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 (Retired))

PAR 4.1: Performance of mixed herd of sheep and goats under grazing in different silvopasture systems. (PI: S. K. Mahanta, S.N. Ram, S.K. Das, 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, Sultan Singh, A.K. Singh, R. Srinivasan, J.B.Singh, Akram Ahmed and S.B. Maity)

PAR 4.3: Endozoochorus dispersal of seeds through sheep and goat fecal pellets: Recovery, germinability and emergence of range grasses, legumes and shrubs species. (PI: N. Das & D. R. Malaviya)

PAR 5.3: Development of nutritionally balanced and economic feeding system for livestock through cereal-legume intercropping. (PI: SB Maity, KK Singh, A. Maity, G. Prabhu & N. Das)

PAR 5.4: Potential of nano zinc oxide on zinc bioavailability and its effect on blood biochemical changes in sheep. (PI: KK Singh, A. Maity and S B Maity)

Social Science Division

SS- 2.06: Scaling up of Fodder Technologies at Farmer's Field (ADARSH CHARA GRAM). (PI: P.Sharma, Khem Chand, P.N.Diwedi, K.K.Singh, N.K.Shah, Sunil Kumar, S.K.Rai, Manju Suman, Sadhna Pandey, H.V.Singh, A.K.Dixit, D.R. Palsania, , C.S. Sahay, Shahid Ahmad, Tejvir Singh, Vikas Kumar, R.K.Verma, J.P. Upadhayay)

SS- 2.04: Technological gap analysis of fodder production technologies in Bundelkhand. (PI: Manju Suman, Ashok Kumar, Vikas Kumar)

SS 2.05 Empowering farm women through building their capacity on livestock rearing practices (PI: Sadhna Pandey)

SS- 3.02: Livelihood improvement of farmers through quality seed production of fodder crops. (PI: Vikas Kumar and Sadhna Pandey)

Externally funded projects: (Left over projects)

DUS PPVFRA: *Developing guidelines for conduct of DUS testing for Oat, Cowpea and guinea grass.*

(PI: VK Yadav, P Kaushal, S Ahmed, G Sahay and DC Joshi)

DAC-ICARDA: *Enhancing grasspea production in Eastern and North-Eastern states for animal feed, safe human food and sustainable rice-based production system in India.* (PI: VK Yadav, MM Das, M. K. srivastava and P Sharma)

DST: *Livelihood improvement and capacity building of SC farmers through forage based livestock production in Bundelkhand.* (PI: Sadhna Pandey, S. R. Kantwa, K. K. Singh and Khem Chand)

CIWA: *Empowerment of farm women through livestock technologies.* (PI:P Sharma and Mukesh chaudhary)