## AICRP ON SMALL MILLETS CENTRE: RANICHAURI, TEHRI GARHWAL, VCSG UUHF

## SIGNIFICANT ACHIEVEMENTS OF THE CENTRE w.e.f. 01.01.2013 to 31.03.2018

- **1.** A total of 757 small millets germplasm have been collected, maintained and evaluated. Genetic donors for desirable traits have been identified.
- **2.** A total of 1022 small millets advance generation lines have been evaluated against important diseases, insect-pests, yield and its contributing traits covering 332 in finger millet, 234 in barnyard millet, 216 in foxtail millet, 129 in proso millet, 77 in little millet, 24 in kodo millet and 10 in browntop millet.
- **3.** One finger millet line was registered in the year 2015 at NBPGR, New Delhi, I C No. 0598724 as resistant to Cercospora leaf spot disease.
- **4.** First Record of Leaf blast disease on Little Millet was made from Mid Hills of Uttarakhand from Ranichauri Centre in the year 2016. The disease was reported from Plant Pathology B- Block, College of Forestry, Ranichauri, Uttarakhand.
- 5. First Record of stem borer damage (Avg. 15.38 % damage) in barnyard millet was first time reported from Ranichauri Centre in the year 2017.
- 6. Centre received first prize with cash of Rs. 1,300/- in the year 2016 for the popular article entitled "Uttarakhand Ke Parvatiyay Shetron Mai Ragi awam Sawan ki Vaigyanik Kheti: Poshan awam khadayayan Suraksha ka Aadhar. *In* "Kadam Saurabh"- vol. 06.
- 7. Finger millet based intercropping system (Finger millet+ Amaranthus 90:10) was found as the most profitable system and has gone in recommendation for farmers in hills of Uttarakhand.
- **8.** Seed rate of 15 kg/ha along with one intercultural operation at 20 DAS and one hand weeding at 40 DAS is recommended for higher grain yield of barnyard millet under rain fed farming.
- **9.** Barnyard millet based intercropping system (Barnyard millet + Amaranthus 4:1) was found as the most promising intercropping system and has gone in recommendation for farmers in hills of Uttarakhand.
- **10.** Seed treatment with *Trichoderma harzianum* @ 6g/kg seed or with *P. fluorescens* @ 6g/kg seed and two sprays of *P. fluorescens* @ 0.6% (first at 50% flowering and second after 10 days): recommended for all three blasts in finger millet. It is advised to mix sticker in solution.

- **11.** Two sprays of *P. fluorescens* @ 0.3 % (first at 50% flowering and second after 10 days): recommended for neck and finger blasts in finger millet.
- **12.** Two sprays of Carbendazim @ 0.1 % (first at 50% flowering and seconds after 10 days): recommended for neck and finger blasts as well as for the management of grain mold or seed blackening of finger millet.
- **13.** One spray of Chlorothalonil @ 0.2% at the time of ear head formation is effective in controlling grain smut disease and realized highest grain yield of barnyard millet. The treatment is significantly at par with seed treatment with Vitavax @ 2.5g/kg seed.
- **14.** Use of *Pseudomonas fluorescens* as seed treatment + soil application with value added FYM/ Vermicompost + single spray @ 6 g/litre at the time of 50 % flowering: recommended for the management of grain smut and brown leaf spot in barnyard millet.
- **15.** The soil application of value added FYM (FYM pre- colonized by *Pseudomonas fluorescens* + *Trichoderma viridi and Bacillus subtilis* @ 1 kg talc formulation of each each mixed in 25 kg FYM or Vermicompost and then incubated for 15 days prior to application): recommended for managing banded sheath blight and enhancing grain and fodder yield in barnyard millet.
- **16.** A total of **7**.9 kg nucleus seed production was carried out from *Kharif* -2013 to *Kharif*-2018 for five small millets varieties.
- **17.** A total of 7.12 qtl of breeder seed (Barnyard millet variety PRJ 1) has been produced against the breeder seed indent received from PC unit w.e.f. 01.01.2013 to 31.03.2018.
- **18.** A total of 1,397.50 kg TL seed of five small millets varieties has been produced from 01.01.2013 to 31.03.2018.
- **19.** Front Line demonstrations are conducted every year for proper dissemination of developed recommendations, location specific suitable technologies, released varieties among the farmers in District Tehri and Uttarkashi in an area of around 80 ha covering 1165 farmers' fields. Since 2015, the area under FLD has increased from 5 hac to 10 hac in each crop under FLDs. The total no. of beneficiaries has also increased double fold.
- **20.** The FLDs have made a very positive and significant impact on grain as well as fodder yield of finger millet and barnyard millet. In Finger millet, 29.45 mean per cent increase in grain yield and 26.25 mean per cent increase in fodder yield have been recorded in improved practice over farmer's practice. In Barnyard millet, 39.72 mean per cent increase in grain yield and 32.84 mean per cent increase in fodder yield have been recorded practice over farmer's practice in fodder yield have been recorded in improved practice over farmer's practice w.e.f. 01.01.2013 to 31.03.2018.

- 21. The centre has maintained a bio-control repository at Plant Pathology Division for the bio-management of small millets diseases keeping the organic scenario of millets cultivation in Uttarakhand viz., *Trichoderma aesperellum* (ITCC- 7903):- Against banded sheath blight disease in barnyard millet; *Pseudomonas fluorescens* (UUHF Psf- 4): Against grain smut and brown leaf spot diseases in barnyard millet as well as against foot rot and blast diseases in finger millet and *Pseudomonas fluorescens* (UUHF Psf-1):- Against blast disease in finger millet
- **22.** During 2016-17 and 2017-18, a total of two thousand (2000) finger millet germplasm accessions have been screened against biotic stress (Cercospora leaf spot disease) under CRP-Agrobiodiversity and only two lines (IC-0477361 and IC-0598724) have been showing consistent resistance against CLS disease. Lines with stable resistance may be used in the future crop improvement programme.
- **23.**Since 2012, a total of 16 research papers, two extension pamphlets, 5 articles were published on small millets and 36 group meetings/ pre orientation training programme with farmers, 05 radio talks, 27 demonstrations on production and protection technologies and 07 field days have been conducted.

## PHOTOGALLERY





MONITORING OF RESEARCH TRIALS CONDUCTED UNDER "ICAR-AICRP ON SMALL MILLETS" AT RANICHAURI CENTRE BY DISTINGUISHED SCIENTISTS FROM ICAR



![](_page_4_Picture_1.jpeg)

Foxtail Millet