



Africa RISING in the Ethiopian Highlands

Feeds and Forage Development: Africa RISING science, innovations and technologies with scaling potential from the Ethiopian Highlands

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Key messages

- ✓ Crop residues in mixed crop-livestock systems of the Ethiopian highlands are generated predominantly from cereal and grain legumes.
- ✓ Crop scientists and livestock nutrition are collaboratively exploring opportunities and limitations for improving crop residue quantity and fodder quality at source through multidimensional crop improvement.
- ✓ Selecting varieties with superior grain and straw traits could address the needs of humans for food and livestock for fodder.

Objectives and approach

This work sought to determine the possibility of selecting crop varieties which combine superior grain and straw traits. Initially, assessments of feeding systems, feed resource availability and crop residue utilization as well as participatory evaluation of feed technologies were undertaken. Nutritive quality of crop residues stored under current traditional method was determined. Genotypes of grain legumes cultivated across multiple locations over consecutive years were collected and evaluated for straw fodder quality traits. Relationships between straw traits with grain and straw yields and genotypic x locational interactions were determined and validated through on-farm live animal feeding demonstrations.

Key results

There were significant genotypic and location variations for grain yield and straw traits in lentil, chickpea, faba bean and field pea. Genotype x location interactions had significant effects.

Significance and scaling potential

Selection for crop cultivars with better quality straw without compromising grain yield could be interesting option for smallholder farmers in mixed crop-livestock systems and would have immense implication for the overall productivity of those systems. Scaling potential is high and can be undertaken alongside of crop technologies to reach over 100,000 beneficiaries.



Core partners



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