

FEAST- A User-friendly Tool for Feed Assessment to Support Dairy Intensification

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SUMMARY: In smallholder dairying, feed is the single most limiting constraint to production intensification. The availability of various feed resources in a given location can be roughly estimated rapidly using a tool called FEAST (Feed Assessment Tool) which was developed, field tested and extensively used by ILRI scientists. The tool comprises a farmer-centred diagnosis exercise, use of questionnaires and their analysis. The whole exercise can be completed within 2-3 days and leads to a set of feed options for subsequent prioritization in consultation with farmers. The tool, apart from providing evidence on the feed situation, makes available information on the pre-requisites for feed investment such as potential of existing breeds, demand for milk and availability of marketing mechanisms in the area. The paper discusses use of the tool and outputs of the exercise recently carried out in Bijapur, Karnataka.

Keywords: Bijapur, FEAST tool, Feed assessment, Intensification, Interventions prioritization

BACKGROUND

In India, dairy animals are generally fed on a wide range of feed resources: crop residues (44%), grazing on common/private lands and agricultural fallows (18%), planted fodder (34%) and concentrates (4.0%) (Ramachandra *et al.*, 2005). In general, feed intervention decisions are made using a trial and error approach which often fails to adequately diagnose the nature of the feed problem and therefore the means to deal with it (Duncan *et al.*, 2014). The purpose of the feed assessment tool described here is to offer a systematic and rapid methodology for assessing feed resources in a given context with a view to developing a site-specific strategy for feed improvement through technical/institutional interventions.

METHODOLOGY

FEAST was applied in two villages (Nidoni and Chadchan) of Bijapur district in Karnataka, India, where two farmer-centred diagnoses (FCD) were conducted with 32 farmers and quantitative information was collected from six dairy farmers (representing landless/small, medium and large land holders) through key informant interviews using a questionnaire. The quantitative and qualitative information thus gathered were entered into a macro driven Excel spreadsheet and analyzed. The analyzed information was then used to prepare a list of possible options by considering availability and requirement of various technology attributes such as land, water, labour, cash/credit, inputs, and knowledge/skills. Among different technologies in the list the best bet options are subjected to prioritization (with farmers) on the basis of impact potential and cost benefits.

RESULTS

Bijapur comes under semi-arid dry lands with an average precipitation of 632 mm. The majority of farmers fall under the category of small (47%) followed by medium (21%) and large (14%) farmers. Landless farmers constituted 18%. Agriculture is the main source of household income contributing 62% followed by livestock (28%), labour (8%) and business (2%). Each farmer on average cultivates an area of 3 ha. Food crops cultivated are sorghum, maize, pearl millet, groundnut and pigeon pea. Average livestock holding is 6.41 tropical livestock units (TLU) per household. Cattle and buffaloes are mostly non-descript. The Khillari breed is

in high demand for draft purposes. AI facility is not available and farmers resort to non-selected bulls for breeding animals. Among the feed resources available, crop residues contribute 47%, whereas purchased feeds (including crop residues) contribute 27%, followed by collected fodder (15%), grazing (7%) and cultivated fodder (4%) to the daily dry matter (DM) intake. Sorghum, tropical grasses (*Sontagaddi*) and hybrid Napier are fodder crops commonly cultivated. Of the total diet, a sizeable portion of energy (34%) and protein (39%) are contributed by purchased feeds. Each farmer on average purchases 4.3 tons of feeds in a year including 49% crop residues (sorghum and chickpea) and 38% concentrates mainly ground nut, rice bran and maize. It was found that there is a critical shortage of livestock feed during summer (April-May). Evidence suggests that Bijapur is a milk deficit area, where demand is met by imports. More than 80% of farmers are members of agricultural cooperatives but still lack organized efforts for procurement and sale of milk, which is a major constraint for dairy development. Proposed feed improvement options include: (1) use of dual purpose food-feed varieties of sorghum (BJV 44), maize (NK 6240, NMH 713), pearl millet, groundnut (ICGV 91114) and pigeon pea (2) chopping of crop residues + use of feed manger (3) use supplementary feeds based on ration balancing calculations.

The above feed based interventions will be very effective if: (1) breed development efforts and (2) milk marketing mechanisms are put in place. Stakeholder consultation is the next step suggested to work out the details, besides prioritizing the proposed feed options.

CONCLUSION

FEAST is a useful tool in assessing feed situation in a given context quickly and cheaply through a systematic approach. It uses qualitative and quantitative information gathered through a participatory approach. The assessment process helps researchers and development practitioners to engage with farmers in identifying issues and developing solutions jointly for dairy intensification and livelihood improvement.

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