

# Fodder Estimations for Dairy Activity in Tribal Area of Upper Pravara Basin in Maharashtra (India)

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**Abstract** Livestock is a continuous and major source of income to the tribal people in India. The scarcity of fodder is a major constraint observed for dairy activity in rural and tribal zones. Therefore, the fodder was estimated to understand the fodder source and budgeting for planning and management of sustainable dairy activity in the study region. The grazing on forest and open lands and stall feeding of harvested fodder are major feeding methods observed in the study area. The grazing estimates about 59% of fodder requirements and stall feeding estimates about 41%. The significant positive correlation was estimated for 1) 6 months grazing period with forest land, grasses reported as crop, other crops and area not available for cultivation, 2) 7 months grazing period with net sown area, good soil, rice crop, fallow land and private grasslands, 3) 8 months grazing period with an area not available for cultivation, good soil quality, good rainfall, more other crops, fallow land and grass reported as a crop and 4) 9 months grazing period with forest and area under crops. Green fodder shows deficit of about 80.6% of requirements in 95% villages with an adverse effect on dairy activity. Surplus green fodder is available only in villages having perennial irrigation facilities. Dry fodder estimated about 13.7% surplus which tribal people are using as supportive fodder in shortage period. These methods are useful for estimations and analysis of available fodder in rural and tribal zones of Indian and developing countries.

**Keywords:** fodder estimations, fodder availability, fodder requirements, fodder scarcity

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## 1. Introduction

Animal husbandry [1] is a supported occupation of agriculture and a major source of income as well as employment in India [2]. Two-third of the total population and three-fourth of the total workforce of India is depending upon agriculture and agro-based business [3]. The majority of the farmers are keeping animals for milk, meat, leather, bones, dung-manure, etc. as support business to the agriculture. Most of the farmers are keeping animals as main business, traditionally. In India, about three-fourth of the population is living in rural areas and about 38% of them are poor [4]. The animals are the main source of proteins and income to the poor population [1,5] and one of the ways of poverty alleviation [6]. Dairy farming is an important source of income to small landholders of dry, drought-prone and hilly zones [4,7]. Fodder is a prime need of dairy activity. Shortage of feeds and fodders are major constraints scattered and small size

landholders [8,9]. Scholars [9,10,11] have reported shortfalls of fodder supply and minimal milk production in the dry season for farmers.

Researchers [12] have recently calculated the deficit of green fodder is 23%, dry fodder 31%, and concentrates feeds 47% in India. Reports on the 12th plan [13] have focused that the development of fodder and feed resources as necessary to sustain livestock in India. The country faces a deficit in 2010 is about 35.7% green fodder, 10.9% dry fodder and 44% concentrate feeds. In the year 2050 demand for total fodder is increasing by 23.9% compared to the year 2010 [13]. In the future to sustain livestock and dairy farming, the growth of green fodder is essential in the study as well as in the country. Therefore, the present study has focused on fodder estimations for dairy activity.

The availability of fodder and lack of sound scientific techniques for measuring the amount of fodder required per animal has imposed severe limitations on the research carried out in this field. In the given study area, the need for fodder is mostly met by grazing the animals in the forest, thus making it difficult to measure the fodder