

IMPORTANCE OF GRASSLAND MANAGEMENT

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Grassland Agriculture- “A land management system emphasizing cultivated forage crops, pasture, and range for livestock [and wildlife] production and soil stability” [added]. Grassland refers to that biome dominated by grasses, species of the Gramineae (Poaceae). In a broader or more generic or, perhaps, poetic sense “grasslands” has frequently been used to encompass true natural or native grasslands, marshes, native meadows, and introduced permanent pastures that are swards made up largely of domestic (= agronomic, hence introduced) herbaceous species including important legumes and, though rarely, even composites and crucifers.

Management and improvement of natural grassland:

Natural grasslands are the primary source of fodder for livestock in Himachal Pradesh. Total areas for grazing is about 32 lakh hectares which comes to 56.7 per cent of total geographical areas of the State. These grasslands are spread over from 300 to 4,800 m altitude with climate varying from sub-tropical to alpine types. Dry matter production from these areas varies from 10 to 50 q/ha. However, this could be increased to 100 q/ha if grasslands are improved and managed properly. Following recommendations are made for their proper management and improvement:

Improved cutting and grazing management:

Although grasses are tolerant to frequent cuttings they, like other green plants, depend on their leaves for photosynthesis. The maximum forage is, therefore, obtained by the most lenient cutting or grazing. On the other hand, the longer the grass is allowed to grow, the lower will be the quality of the produce as protein content starts decreasing with the advance in age. Every effort should be made to harvest the grassland after the cessation of monsoon rains in order to conserve fodder of good quality in the form of hay. Delayed cutting of

grassland when grasses have matured gives herbage of very low nutritive value. For getting better distribution of green forage from grassland; the grassland should be fertilized and harvested twice. Overgrazing of pasture/forest areas should also be avoided as it results in elimination of desirable species and loss of stand. Since it will not be possible to stop grazing over the entire area when no other alternative areas are available, the practical method is to adopt rotational grazing system. This provides grasses a period of rest. It would be more

desirable if a portion of pasture is not grazed or cut for hay till grasses have shed seed as this would give a chance of reseeding.

Removal of bushes and other species:

In uncared grassland, undesirable bushes like cactus, lantana, barberry, etc. start appearing in large number. These plants compete with grasses for soil moisture and affect grass production adversely. Thus, efforts should

be made to remove undesirable bushes from grassland. Application of 1% Glyphosate (ai) on stump after removal of aerial parts has been found to be successful for their control.

Use of fertilizers:

Practically none of natural grasslands receive fertilizer in any form excluding what is added in the form of dung and urine by livestock grazing on them. Thus, there is a continuous depletion of plant nutrients from such and resulting in a very low forage yield. This effect is more pronounced due to the lack of legume components which are capable of adding nitrogen to soil. As the forage yield falls, competitive capacity of desirable species also falls and other plants better adapted to the lower fertility condition will tend to replace them. The major plant foods for pasture plants are nitrogen, phosphorus, potash, sulphur, lime and magnesium. Trace elements required in much smaller quantity are molybdenum, copper, zinc,



manganese, boron and iron.

Introduction of suitable legumes:

In Himachal Pradesh, cattle mostly depend on crop-straw and grass-hay which contain mostly cellulose, which can provide only energy but no digestible protein to animals. Continuous use of energy feed without sufficient intake of protein has resulted in degradation of genetic potential for production and reproduction in indigenous as well as exotic cows. Straw and hay can be judiciously used in proper combination with protein rich feed like oil cakes or leguminous fodder crops. The grass flora of our grasslands have very low proportion of legume component. Increase in their proportion would yield fodder rich in protein and other essential nutrients.

Reseeding method :

Circular pits of 15 cm radius and 20 cm deep should be dug up and all natural grasses removed. The fertilizer should be mixed thoroughly and seed broadcasted and mixed with the soil. Sowing should be done during end of June in Zone I and II, during October in Zone III and during April in Zone IV.

Introduction of superior grasses:

Introduction of suitable high yielding and nutritive grasses in degraded grasslands, pastures, waste and barren lands, not only increases herbage production

considerably but availability of green forage is increased from 3-4 to 7-8 months due to their longer growing period. Grasses which have been found promising for introduction

Sowing method:

As young grass seedlings are weak and take longer time to establish and most of the time are eliminated by shading and strong competition from already established grasses. Therefore, for good results, first seedlings should be planted in the nursery and seedlings transplanted in the

field during 2nd year. For fine grasses, seedlings block along with soil should be planted, while for thick grasses like NB-hybrids, individual cuttings can be transplanted. Transplanting should be done in lines 30 cm apart with plant distance of 20cm. Circular pit method of seed sowing can also be adopted in far away places where transporting costs are higher.

Plantation of fodder trees :

Fodder trees and shrubs provide green fodder when native grasses have dried or are dormant. In addition to supply of green fodder during scarcity period, their plantings do not compete with other crops as they are planted on wasteland, grassland and bunds of fields and require little care after establishment.

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