Fuhadaha-an indigenous dry fodder storage structure of Jammu region

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Fuhadaha, the traditional dry fodder storage structure being used in the Jammu region has its origin from Dogri language, the local dialect. It is a low cost and durable dry fodder storage structure constructed since the time immemorial using the locally available material. It holds wide potential to store dry fodder for many years. Slight modifications have occurred from time to time in the construction technology. But now days, there is a serious threat to the further transfer of this structure to the succeeding generations. This documentation of construction technology of Fuhadaha will surely help to preserve the fast disappearing constituent component of livestock raising in Jammu and Kashmir. This technology can be slightly modified and adapted to various situations. Here, cost-effectiveness of Fuhadaha has also been discussed.

Key words: Fuhadaha, Indigenous fodder storage, Jammu, Traditional storage structure, Livestock, Dry fodder storage

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Safe storage of dry fodder or straw for their use during slack seasons is an indispensable component for successful livestock raising. Due to non-availability of green fodder during the slack seasons, livestock keepers have to depend upon straws or dry fodder for feeding them.1-5

In rural and semi-urban areas of Jammu region, livestock rearing has been an inseparable part of family subsistence activity. Along with agriculture, rearing cattle or buffalo for milk as well as for draft purposes is a common practice in this region. For safe storage of straw or other dry fodder, the farmers of this region use traditional methods. The commonly found structure is named Fuhadaha, which is constructed using locally available material. The term Fuhadaha is derived from Dogri language, which means a hut like structure constructed with thatched roof. No records are available to estimate the time since when this storage structure was integrated with livestock keeping in this region. Slight variations may exist in shape and method of construction of Fuhadaha in the different belts of Jammu region. However, the basic raw materials used are almost similar. No systematic effort has been made in the past to document the valuable indigenous technology of Fuhadaha construction. The fodder stored in the Fuhadaha retains the maximum nutrients in it and remains safe during rainy season and even for many years.

It might have taken thousand of years to evolve the indigenous technology of Fuhadaha construction but rapid urbanization has posted a serious threat to it. The present documentation was made to gather the information regarding construction technology of Fuhadaha (Fig. 1), appropriateness and cost effectiveness of this indigenous fodder storage technology.

Methodology

The information on construction technology of Fuhadaha was gathered from the villages of bordering area of Jammu and Kathua districts of Jammu division of J&K situated South to the National Highway 1-A. The information was acquired by organizing the field trips and on the basis of semi-structured interviews with the persons skilled in Fuhadaha construction, elderly farmers of the village and through field inspections and observations. Further, the information collected was cross-checked through triangulation for its validation.

Observations

For constructing Fuhadaha to store 25 tonnes of straw or dry fodder, the raw materials needed are:
- 12 wooden pillars of 2.10 m length
- 15 full length bamboo (Dendrocalamus strictus (Roxb.) Nees) poles
- Thin and tender twigs of fresh bamboo (Dendrocalamus strictus (Roxb.) Nees) or one bundle of thin iron wire
- 15-20 bundles of fully mature Saccharum grass (Erianthus munja Jesw.)
- 12-15 bundles of Santha (Dodonaea viscosa Linn.) or Shisam (Dalbergia sissoo Roxb.) or Basooti (Adhatoda vasica Nees) twigs.

Besides, one shovel (Khurpa), one sickle, and other sharp ended tool for digging soil, cutting grass, and splitting bamboo are also needed. Now a days, farmers are also using iron angles or poles in place of wooden pillars just to enhance the strength and longevity of the structure.

Fuhadaha is constructed using a very simple technology, which has been indigenously devised in the villages. There are local artisans who have inherited this skill from the elders. The first step in the Fuhadaha construction is the selection of a proper site. Generally, raised surface is selected where water does not stagnate. The site is leveled properly for smooth structure. The center of the surface selected is located. A rope of about 2.10 m length is taken and two wooden pegs are tied at both the ends. One of the pegs is dug at the center of the selected site and the second peg is rotated with the stretched rope to draw a circle on the ground. The circle drawn provides desired boundary to the Fuhadaha to be raised. On the circumference of the circle drawn, around 12 holes of one to 30-60 cm depth and 15 cm diameter are dug at equal distances for fixing the wooden poles. The wooden poles are firmly fixed in the holes with soil and stones to provide a skeleton to the structure.

Four to five bamboos are split from base to the top longitudinally into equal halves with the help of a sharp edged tool. Striped halves are tied to the outer surface of the erected poles at the gap of 30 cm in between them above the ground giving them circular shape. It is ensured that the bamboo half touches each wooden pole.

Twigs or branches of different shrubs of trees, i.e. Santha (Dodonaea viscosa Linn) or Shisam (Dalbergia sissoo Roxb.) or Basooti (Adhatoda vasica Nees) are used based on their availability. These branches are densely placed vertically on the inner side of already prepared circular frame covering almost half the height of the structure. The second half of bamboos are fitted exactly over the first (fixed on the outer side) by firmly fixing the twigs in between both halves and tied at many places with the help of iron wire. Same process is repeated at the remaining height so as to complete the entire round wall.

Generally, slanting roofs are made. Firstly, the skeleton of frame the roof is made using bamboo pieces of the required length. The slanting skeleton so designed is placed over the structure prepared and patches of Saccharum grass (Erianthus munja Jesw.) is placed layer by layer over it giving it shape of a thatched hut. Any other local method can also be used to prepare the roof. The wall of the structure is a cut 1.20×1 m dimension at any convenient place to make a doorway. Now, the Fuhadaha is ready for filling.

If the material required is not locally available with the farmer, he can construct the structure with the nominal expenditure of Rs 700.00 aprox. The cost of
inputs has been estimated on the basis of existing cost of the material in the villages of Jammu region.

Maintenance of the structure is done by keeping the surrounding clean. Roof is made sloppy and fresh layers of Saccharum are placed on the roof of the structure periodically. Iron wires are checked from time to time and replaced if found broken. Periodically the structure is repaired. Anti-termites are used to save the wooden poles and precautions and taken against fire hazards.

Discussion
Indigenous technologies are the dynamic mechanisms of creativity and innovativeness. These technologies and knowledge system may appear simple but they represent mechanism to solve problems of local people in unique ways. It was observed that farmers of Jammu region use indigenously constructed structure for safe storage of dry fodder using locally available material. It is a cost-effective and locally adaptable means of storing dry fodder for feeding livestock during the slack seasons. It is adapted to the culture and environmental conditions with high durability and sustainability. Further improvement of this structure and wide publicity/applicability beyond Jammu region may help in long duration preservation of this technique of dry fodder storage. Testing of scientific efficiency of such type of indigenous technologies is a crucial process for the validation of such type of knowledge. Looking to this issue, further attention should be given to the efficiency level of Fuhadaha in terms of farmer’s knowledge and experience to refine it.

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