

Lesson 25. Functional Requirements of Storage

25.1 INTRODUCTION

In the post green revolution era, there is a significant growth in the production and productivity in the Indian agriculture. The country has become self sufficient in food grains and achieved a remarkable growth in the production of pulses, oil seeds and fibres to meet the requirements of the country. Although our farming community toiled hard, they could not get real benefit of the growth in the economy in the absence of a suitable mechanism to ensure a reasonable rate of return to their hard labour and investments. Only a handful of influential farmers, who have the infrastructure to overcome the market fluctuations, could derive the benefits.

Our farming community depends heavily on the borrowed money for the agricultural operations. The borrowings are at an unreasonably high rate of interest, mostly from the money lenders. As a result, they are forced to sell their produce immediately after the harvest although price is very low. Thus, the farmers lose heavily on their investments. This vicious cycle is recurring year after year making the farmers poorer. Today, the country is not having a reasonable infrastructure for providing relief to these farmers. The facility for storage of agricultural produce is inadequate in rural areas. The farmers therefore have to dispose of their produce at an unremunerative price, immediately after the harvest. The creation of storage facilities, through construction of grain godowns in villages will remedy the above situation. The farmers can store their produce in godowns by paying rents, and release the produce to market when the price is reasonable. Meanwhile, the farmers can borrow from a financial institution, in case of need, by pledge of godown receipt. This will help modernization of rural economy, development of banking habit of the farmers and teach the bankers the lesson of development through credit. This facility will not only enable the farmers to break the vicious cycle by generating money from their own produce to pay back a part of the loan and meet some of their day-to-day urgent needs; but also reduce the subsidy burden on the government on procurement of excess produce.

A reasonable spread of agricultural storage godowns linked to financial organizations to provide pledge loan will go a long way in meeting the needs of the farmers as it will not only provide the basic infrastructure for making arrangements for the pledge loan but also preserve the quality and quantity of their produce over a longer period to enable them to sell it when rates are higher for the quality produce to ensure a decent return on their labour and investments. Scientifically designed storage structures reduce the losses and its existence provides confidence to the farmers for raising crops with quality/ costly inputs.

25.2 REQUIREMENTS OF AN IDEAL GRAIN STORAGE STRUCTURE

The object of an ideal grain storage structure is to control and reduce the storage losses from rodents, insects and micro-organisms, birds, moisture and heat to a minimum.

A good storage structure is the one, which can provide protection against all possible causes of damage. A food storage structure, for storing food grains on a large scale, should have the following essential features:

1. It should be easy to clean.

2. It should provide protection from rodents, birds and other animals.
3. It should be waterproof and moisture proof.
4. It should protect the food grains against variations of temperature and humidity.
5. It should have provision for periodical inspection.
6. It should have provision for application of pesticides through spraying or fumigation.
7. It should be located far away from possible sources of infection such as kilns, flour mills, and bone crushing mills, garbage rumps, tanneries, slaughter houses and chemical industries.
8. It should be located at a convenient place from where it is easy to receive issue and transport the food gains. This explains why most of the storage structures are located near railway stations or on highways.

Therefore in designing and constructing storage structure following points shall be borne in mind:

1. All holes, pipes and ducts and other openings shall be guarded by suitable means, such as gratings, etc., in order to prevent the entry of rats and other vermin.
2. The structure shall have smooth, crack free internal surfaces and shall have no unnecessary cavities and projections to prevent the lodgement from insects and vermin. Periodical fumigation and other treatments should be done to eliminate infestation of grains by insects, fungus etc. The structure shall be designed so as to facilitate its sealing for fumigation or have facility to seal a portion where fumigation has to be carried out, or it may be made completely airtight if required.
3. Godowns should have good ventilation arrangement to prevent moisture accumulation in pockets.
4. The structure shall be designed to make it possible to control moisture. Moisture may be controlled by adopting methods of construction using non-hygroscopic material, by sound wall, roof and floor construction, by the use of vapour barriers, and by the use of aeration.
5. The structure shall be so oriented that it will receive the minimum solar radiation. Reflective external surfaces, insulating materials, sun shades, a minimum of glass surfaces, controlled ventilation and aeration, to reduce the internal temperature may be used.

References:

- <http://www.keralaagriculture.gov.in/html/bankableagriprojects/ae/graingodows.htm>