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NPPC

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Semtokha: Thimphu

EARLY HARVESTING RESULTS IN:

- High level of immature, unfilled, partly filled cobs,
- Low field yield
- High grain moisture

LATE HARVESTING RESULTS IN:

- Low field yield due to damage by insects, mould, birds, rodents and wild animals

STORAGE

Maize can be stored either in cobs or shelled in various storage structures or containers for different lengths of time. Storage period can be short-term (4-5 months), season-long (6-9 months) and long term (>9months) .

GOOD PRACTICES FOR STORAGE OF MAIZE COBS/GRAINS :

- Cobs or grains should be dry, clean, undamaged, free from infestation and matured.
- No rain water or seepage water should touch the stored maize
- Clean storage area, store, bags or sacks and clean surroundings

- Adopt the practice of “First in first out”, that is, cobs or grains stored first should be removed first
- On dry, sunny days provide adequate ventilation and on humid, wet days keep the storage closed

When using sacks for storage, the grain sacks should be stacked on palates so that they will not touch the ground for seepage water to reach the grains.

- Adopt insect control practices
- Adopt rodent control practices
- Prevent and control mould growth in stored grains

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INTRODUCTION

Maize drying is a vital operation which involves removal of moisture from the cobs/grains. It is carried out because high moisture grain will deteriorate rapidly due to grain respiration and heating, germination of grains, mould (fungal) growth and subsequent incidence of mycotoxins (e.g.. Aflatoxin) and increase insect multiplication and damage. The optimum moisture content of maize should be 14% or less.

TYPES OF DRYING

Sun drying

It is a popular method of drying grains where spread grain is exposed to direct sunlight until the desired grain moisture content is achieved. It is low energy cost. The good practices that have to be followed in sun drying are as follows:

- Clean the drying surface properly before spreading the grain to prevent contamination with impurities.
- De-husked cobs should be spread on a ground cover such as a plastic sheet or any other suitable material to prevent seepage moisture from the ground reaching the cobs.

- Start the drying operation in the morning to get maximum sun shine hours of the day.
- Spread the cobs as thinly as possible on the drying floor, but not more than 5 cm thick, to achieve faster
- Grains absorb moisture during nighttime when the relative humidity of the air increases. In order to minimize this phenomenon, heap the cobs on the drying floor and cover the heaps with plastic sheet or any other protective material such as straw bags until the



Right stage for maize harvesting

grains are spread on the following day. During sudden rains, heap the cobs or grains on the drying floor and cover the heaps with plastic sheet or any other moisture barrier.

Smoking

The insect infestation is reduced when hung above the fire as the heat reduces the moisture content and the chemicals in smoke deters insect from laying eggs.

Air Drying

The maize cobs are hung along the roof of the house to expose it to air and hence the moisture content is minimized.

Harvesting

The correct stage of maturity for harvesting of maize is:

- When silks of ears have dried to a golden brown.
- Kernels should be well filled & plump milk stage. .
- 90 – 115 days after planting.
- Cobs should be at least 5” long.
- 20 days after the appearance of the first silk strands.