

Storage facilities: Invest in the best

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Seed is a valuable monthly input purchase. Should the quality of seed deteriorate due to inadequate storage conditions, producers risk facing severe yield and financial losses. Inadequate storage can also lead to poor germination and yield, which may then result in complete crop failure.

Seed quality is determined during production, processing and packing, as well as harvest and storage processes. Seed companies such as Sensako go to great lengths to provide producers with high-quality certified seed.

The deterioration of seed quality can mainly be attributed to factors relating to temperature, relative humidity, seed moisture content, micro-organisms and insects. Temperature fluctuation, storage location and circumference, as well as seed moisture content therefore need to be taken into consideration.

Storage conditions

Another major determining factor of the lifespan and quality of seed, is the storage environment. According to Sensako production manager, Wikus Bergh, seed must always be stored in a dry-storage facility and variation between minimum and maximum temperatures should be kept to a minimum.

"Avoid using open storage facilities or a room with poor insulation. The fluctuating humidity and temperature levels in open storage can cause variation in seed moisture content," says Wikus.

Establishing optimal storage conditions include the following actions:

- Store in a dry-storage facility.
- Manage temperatures to avoid excessive heat.
- Avoid temperature fluctuations. Keep temperature as consistent as possible.
- Manage insects and pests effectively.

- Keep the storage facility clean.
- Monitor the moisture content of the seed or grain.

Storage preparation

During the planning or construction of a seed storage facility, ventilation must be kept in mind. There should ideally not be any windows, with only one door that can be sealed and locked. The foundation should be set with stone or cement. Tiled flooring is preferred but in the case of cement flooring, any cracks that form must be sealed properly.

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To prevent insects from lurking in the facility, construction of the flooring, walls and roof should be done in such a manner, that no cracks are formed. All gaps near power outlets, wiring, insulation and doors must be sealed.

Management and sanitation

Management of storage is vital and thorough record-keeping must be ensured. Different types of seed should also be stored separately to avoid cross-contamination.

Frequent inspection for insects, birds, or other pests such as rats and mice, is also crucial. Ensure that there are no leaks in the roof and keep record of temperatures for future reference.

Correct sanitisation is necessary to manage fungi, bacteria, mites, birds, insects and rodents. Any seed that is spilled must be swept and discarded, and the floors and walls must be treated with a residual pesticide on a regular basis. All chemical pest-

management spraying should be done in consultation with a chemical agent.

Storage period

The higher the moisture content, the more the seed will be affected by high temperatures. Minimising temperature and seed moisture content is therefore an effective method of preserving seed quality in storage.

Relative humidity and temperature are the most important aspects in determining how long seed remains in storage. When exposed to consistent levels of humidity, the seed reaches a particular moisture content. The micro-climate within the storage facility has a significant effect on quality; a rise in temperature of only 6°C or an increase of 1% in moisture content can cut shelf life and germination by 50%.

According to Dr Sierk Ybema, an independent seed specialist, there is a direct correlation between the initial seed moisture content and the temperature in the storage facility. The higher the temperature and moisture content, the greater the chance of lower seed quality.

At a temperature of 5°C within the facility and 20% moisture content in the seed, for example, grain can be stored for one year with no effect on quality. However, the period decreases drastically to around 25 weeks if seed with a 25% moisture content is stored at 10°C. Similarly, when stored at 20% moisture content at 25°C, the seed will only last ten weeks.

"Purchasing quality seed with a high yield potential is necessary for the next planting season. It is therefore extremely important that producers ensure this seed is stored under optimum conditions," says Wikus. 🌱

For more information, contact the Sensako head office at 058 303 4690, email customercare@sensako.co.za, or visit www.sensako.co.za.