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Report
Practical demonstration of forage harvest techniques for silage and hay making

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Introduction

In Morocco, silage making is largely undertaken in big farms engaged in beef production, cattle and goat dairy which incorporate maize and sorghum into their feeding rations. These farms are highly mechanized. Smallholder livestock farmers on the other hand, do not make silage on farm, but purchase it in small bags of 30-50 kg. for feeding by hand. However, smallholder farmers, who are the predominant type in Morocco, have high proportions of small ruminants and farm under extensive conditions with a lower demand on forage quality. These factors make silage making in Morocco a rare occurrence. Other factors contributing to rarity of on farm silage making in Morocco include the following:

- Silage making requires mechanization.
- Silage making is a more expensive than hay making or fresh feeding.
- The ensiling process requires knowledge and skill to ensure good quality silage.

Nevertheless, there is an increasing interest in silage making in Morocco. This is mainly in the Northern part of Morocco, where intensive animal production is the norm.

A field day was organized at Meknès National Agricultural School to demonstrate silage making. Practical demonstrations on small scale maize and sorghum harvesting with a 1-row field chopper and a small silo were held at the ENA Experimental and Educational Farm on 26 August 2019 for ENA farm personnel and students. Other objectives included:

- To improve the knowledge on forage harvesting for silage making.
- Preparing a silo for silage storage.
- Regulation of field choppers.
- Transportation of silage to the silo and silage compaction in the silo.
- Optimization of the ensiling process.

Ensiling Process

Harvesting with a 1-row field chopper attached at the three-point linkage (see Fig. above) from 80 hp tractor has shown good results by chopping material homogenously.




Harvesting sorghum varieties with different dry matter content has an influence on the compaction of plant material in the silo. Plant material with a lower dry matter content is easier to compact compared to material with a higher dry matter content. A main point of discussion was the length of chopped sorghum and maize for an optimal bulk density depending on dry matter content. Another point of discussion was the importance of good compaction in the silo. It was concluded that the compacting capacity in the silo determines the harvest capacity, it is not determined by the harvest capacity of the field chopper.

Way Forward

It was concluded that a 1-row or 2-row field chopper attached to a three-point linkage from a small/medium tractor is a suitable harvest technique for maize and sorghum for smallholder livestock farmers.

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