



# JUNCAO TECHNOLOGY: PRODUCTION OF PENNISETUM GIGANTEUM

## CONTEXT

- ❑ Dairy production holds a preponderant place in the agricultural and economic sector of Madagascar;
- ❑ The Vakinankaratra region has been the leading milk producing area for years but it is now facing many problems. The quantity and quality of milk continues to decline;
- ❑ Livestock feeding ensures the promotion of milk production and provides a better balance in the food ration of residents, contributing to the fight against food insecurity;
- ❑ Research carried out in China on Juncao demonstrates its strong potential as fodder to ensure the nutrition of ruminants (cattle, goats, sheep, etc.) throughout the year. Juncao's biomass production can reach up to 150 tons per hectare per year and even more;
- ❑ In animal feed, we have the choice of using it as green fodder, in the form of silage and in the form of pellets.



# COLLABORATION

- ❑ The collaboration between China and Madagascar and to introduce Juncao seed through the MTIJC company which will develop Juncao technology;
- ❑ FIFAMANOR, which has 50 years of experience in the dairy sector in Madagascar, has the expertise and skills to develop cultural techniques and the use of Juncao to promote cattle feeding in Madagascar;
- ❑ MTIJC in partnership with FIFAMANOR will jointly carry out the following activities: exchange of expertise, cultivation installation, consolidation of the results obtained, dissemination and transfer of acquired knowledge.

# ACTIVITY 1: JUNCAO CULTURE

- ❑ The area of Juncao cultivated is 87 ha since 2018 to date in FIFAMANOR plots. MTIJC: 30ha, Green Title 47 ha and FIFAMANOR 10 ha;
- ❑ January 2018: 10 ha installation with short stem cuttings imported directly from China. Two Chinese experts came for technical assistance with the installation;
- ❑ December 2018: 10 ha installation with short stem cuttings and stump chips from the first installation;
- ❑ December 2019: 10 ha installation with the entire stem from the first installation;
- ❑ These crops are intended for feeding cattle either as green fodder or for the manufacture of silage bales; or for seed.



## RESULTS OBTAINED

- ❑ The plant adapts very well to the pedo-climatic conditions of FIFAMANOR dons in the Vakinankaratra region (presence of cold seasons: frost). Thus, the cultivation of this Juncao can be possible by everyone in the Madagascar region since the Juncao has a preference for the hot and humid climate where it can grow all year round;
- ❑ The growth and development of Juncao is significant compared to other varieties of pennisetum existing in FIFAMANOR such as relaza, kizozi. There is a big difference in biomass;
- ❑ The establishment of a technical cultivation sheet according to the purpose of the cultivation (fodder, silage, seed). We can obtain 4 cuts if green and 2 cuts if for silage;
- ❑ The resulting green fodder is appreciated by cattle and increases the cow's milk production with the existing nutritional value. It can be used as a staple food for ruminants;
- ❑ During the health quarantine of the 165 cows, the supply of green fodder was provided by Juncao for 1 month, then the use of silage was tested among the beneficiaries of the green titles.

## ACTIVITY 2: JUNCAO SILAGE BALE PRODUCTION

The materials used for manufacturing are imported from China:

- ❑ The crusher;
- ❑ The baling machine;

Silage bale stages:

- ❑ Cutting: 3 to 4 months after installation;
- ❑ Grinding;
- ❑ Drying if humidity is high;
- ❑ Pressing and wrapping;
- ❑ Preservation: fermentation process.



## RESULTS OBTAINED

- ❑ The manufacturing of 20,000 balls over these four years of installation, the majority of which was produced in 2019;
- ❑ Juncao silage is appreciated by cattle and increases milk production significantly given the nutritional value represented by Juncao silage after analysis in the FIFAMANOR laboratory and tests carried out with FIFAMANOR cows;
- ❑ The establishment of a technical sheet on the use of silage bales for feeding ruminants;
- ❑ The silage bale is a means of providing for the feeding of ruminants during the forage lean period (dry season), breeders can maintain milk production throughout the year and sell the maximum amount of milk at a better price ;
- ❑ The silage bale is easily transportable and can be stored; however, care must be taken with humidity when baling, at the cutting stage, tearing of the packaging, etc.

## ACTIVITY 3: OTHERS

### JUNCAO SEED PRODUCTION

- ❑ Most of the Juncao seed is used for the extension of the Juncao farm to FIFAMANOR whether it is a cutting or a stump;

### ECONOMIC EVENTS:

- ❑ Milk Fair (MDB)
- ❑ International Agricultural Fair (FIA) (MINAE)
- ❑ Livestock and Animal Production Fair (MPE)
- ❑ FIERMADA Fair (Professional)







# FUTURE PROSPECTS



- ❑ The multiplication and sale of cuttings, the extension of areas to be planted
- ❑ The diffusion and popularization of Juncao technology throughout Madagascar
- ❑ Strengthening collaboration between Chinese and Madagascar research centers
- ❑ Research and strengthening of partnership with actors in the milk value chain
- ❑ Technical and financial support from the Chinese government and the Malagasy State
- ❑ Strengthening partnership with other stakeholders: protection of watersheds, fight against erosion; desertification, climate change,...
- ❑ Job creation through new income-generating activities through the transfer of Juncao technologies such as mushroom cultivation, bioenergy, pelleted feed, etc.
- ❑ The creation of a Juncao platform



**FIFAMANOR**



**MISAOTRA  
THANKS  
XIE XIE**