Agronomic Evaluation of 20 Accessions of *Chloris gayana* During Maximum and Minimum Precipitation in Colombia

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Tropentag 2015

1. THE MESSAGE

- Large parts of the livestock sector are managed with extensive grazing systems and many times with native forage materials available in the grasslands or degraded that do not allow an adequate use of the land, resulting in a low carrying capacity.
- The introduction of new forage materials, which are adapted to adverse conditions and provide excellent nutritional quality is necessary.

Picture 1. Initial establishment of materials in plates in greenhouses and **2.** Established in the field.

2. INTRODUCTION

- Perennial native to SE tropical Africa.
- The available information indicates that this grass can be considered as a forage option for regions with long periods of drought.

Picture 3. Panoramic trial.

3. METHODS

- Productive parameters of a collection of 20 accessions of *Chloris gayana* requested from the International Livestock Research Institute (ILRI), with two control materials, *B. brizantha* CIAT 26110 cv. Toledo and *Brachiaria* hybrid CIAT 36087 cv. Mulato II, were evaluated at the International Center for Tropical Agriculture – CIAT, in Cali, Colombia. Data was collected from August 2014 to March 2015 in two seasons, one with maximum and one with minimum precipitation.
- Plots of 3 x 2.5 m were established with 3 replications; agronomic evaluation included vigour, plant height, susceptibility to pests and diseases, nutrient deficiencies and dry matter yield, every 6-weeks regrowth; phenological and seed production observations in an additional replication.

4. RESULTS

- The average production in dry season varied between 32.6 and 70.1 t/on DM ha-1, where the best accessions were ILRI 13330, ILRI 981, ILRI 13053, ILRI 10225 with a production of 70.1, 66.4, 61.5, 59.7 t/on DM ha-1, respectively.
- In wet season the forage production varied between 24.3 and 46.8 t/on DM ha-1, where the top four materials were ILRI 18498, ILRI 7384, ILRI 15570, 15573 ILRI with a production of 46.8, 41.38, 41.07, 40.84 t/on DM ha-1, respectively.

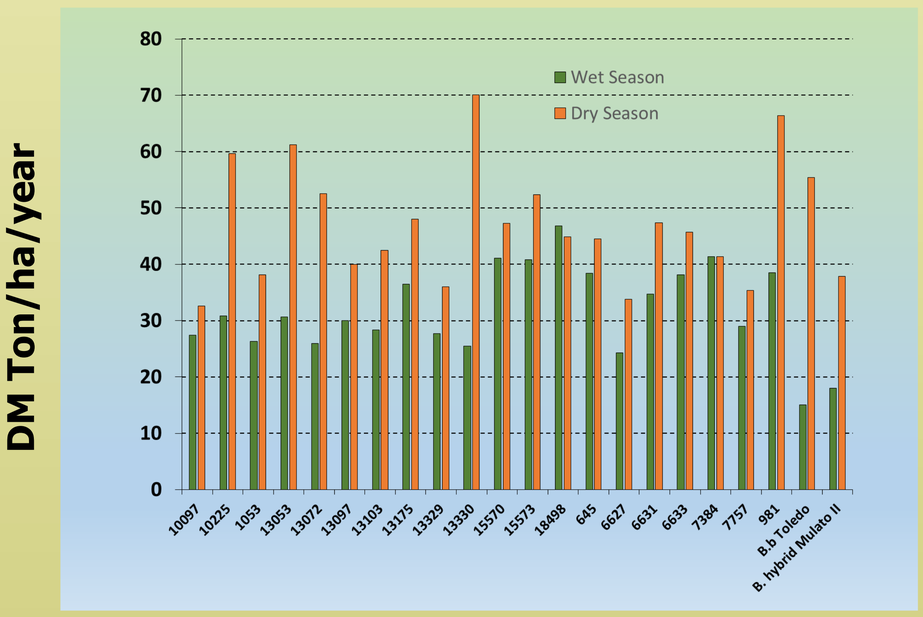

Figure 1. DM yield after 6 weeks of growth in the wet and dry season (mean of two cuts) of the *Chloris gayana* collection.

5. CONCLUSIONS

- *Chloris gayana* is a good forage alternative due to its excellent biomass production during both the rainy and the dry season.
- Studies of nutritional quality and persistence of selected accessions under frequent cutting and under grazing are suggested.
- Regional testing of promising accessions of *C. gayana* germplasm is indicated.
- The high seed production allows natural re-vegetation of the material during rainy season, but also make it less palatable.

Picture 4. Plant characteristics.

Funding of this project by INIFAP (Mexico) is gratefully acknowledged.