Evaluation of *Paspalum* spp. with adaptation to poorly drained soils in the tropical Americas

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Problem and Approach

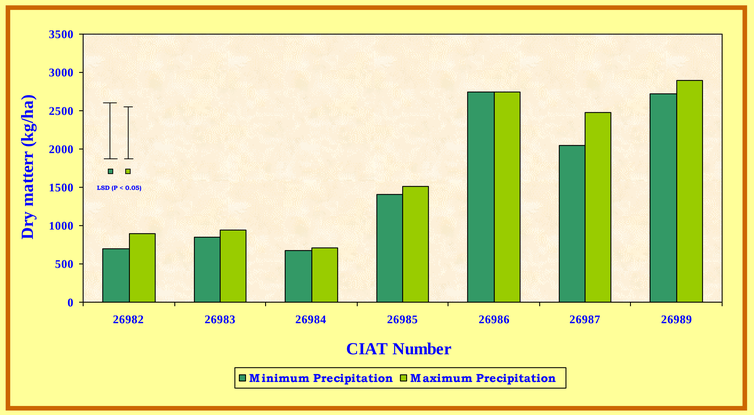
- Large areas of poorly drained soils in the savannas of tropical America
- Widely distributed forages are known for their adaptation to (spittlebug) poorly drained conditions and their tolerance to the major pest of grasses in Tropical America.

Material and Methods

- Collection of accessions of *Paspalum* species from CENARGEN-EMBRAPA, Brazil.
- Planted vegetatively in rows at a distance of 50 cm, November 1996 at Santander de Quilichao, Cauca, Colombia. The site is located at an elevation of 990 masl with an annual rainfall of 1800 mm. The soil is a poorly drained Ultisol, with a pH of 4.2 and an organic matter content of 6.9% in the top soil (0-20cm).
- Randomized Complete Block Design with three replications.
- Fertilization was 40 kg/ha P at establishment, annual maintenance dressing of 22 kg/ha P, 40 kg/ha K, 20 kg/ha Mg and 20 kg/ha S.
- Evaluation for Dry Matter (DM) production every 6 weeks.
- Quality analysis of samples from periods of minimum and maximum rains and analysed for *In-vitro* dry matter digestibility and total N.

Results and Discussion

- Dry matter (DM) yields of 6 week regrowths 670 to 2800 kg/ha and 714 to 2900 kg/ha for the periods of minimum and maximum rainfall, respectively.
- In both seasons the order of accessions was the same, CIAT 26986 followed by 26989, 26987 and 26985 (Figure 1).
- Accessions maintained similar levels of productivity throughout the year, thus offering the possibility for a relatively stable forage supply.
- Resistance of *Paspalum* spp. to frequent cutting.
- Large variations in quality of *Paspalum* accessions, with the best accessions showing digestibility and protein values that are similar to other tropical grasses (Table 1).
- In contrast to other studies, *Paspalum plicatulum,* at least in terms of protein and digestibility compares favorably with the other *Paspalum* species.



Conclusions

- Through this study we have confirmed the high potential of *Paspalum* spp for seasonally waterlogged soils in the Latin American tropics. On the basis of dry matter production and quality parameters, we selected *Paspalum atratum* CIAT 26986, *Paspalum plicatulum* CIAT 26989 and *Paspalum guenoarum* CIAT 26985 for further testing under grazing and more detailed studies on forage quality and acceptability by grazing animals. Further regional testing, with and without legumes with farmer participation is suggested.

Table 1. Forage quality of a collection of *Paspalum* spp. in periods of maximum and minimum rainfall, Santander de Quilichao, Cauca, Colombia.

	Minimum rainfall		Maximum rainfall	
Accession No CIAT	**IVDMD**	**CP**	**IVDMD**	**CP**
	(%)			
Paspalum sp. 26982	52.28	10.25	52.36	8.69
Paspalum sp. 26983	54.11	10.23	51.03	8.01
Paspalum sp. 26984	55.29	12.77	52.40	9.42
P. guenoarum 26985	61.43	12.19	57.58	8.48
P. atratum 26986	59.61	9.24	59.38	7.21
P. arundinellum 26987	34.22	7.68	35.13	6.80
P. plicatulum 26989	58.49	9.85	58.77	7.73
LSD (P ≤ 0.05)	6.7	1.47	3.2	0.74

Further Reading

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