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FORAGE YIELDS AND PLANT
CHARACTER CORRELATIONS IN THIRTY DIGITARIAS

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INTRODUCTION

It is well know that Pangola grass (*Digitaria decumbens* Stent), has positively contributed to the grassland agriculture of many tropical and subtropical countries of the world. Serious diseases and pests found on Pangola grass pasture sreported (3, 5, 6, 9, 22), justify the expansion of the *Digitaria* germ plasm in order to earch for phenotypes which could be used for forages or superior parents for their utilization in a breeding program. Fortunately, the *Digitaria* germ plasm has been significantly increased in Florida, Puerto Rico and in many other countries of the Caribbean due largely to the plant exploration and systematic research conducted by A. J. OAKES in South Africa in the early 1960's, (7).

In Florida, Puerto Rico and other countries detailed studies on the morphology, taxonomy and agronomy of these *Digitarias* have been conducted (1, 3, 8, 10-20); the main objective has been to develop new technique aiming to produce through hybridization and selection, superior forages with better agronomic qualities than found in Pangola grass.

The purpose of the present investigation was to evaluate and compare 29 *Digitarias* and Pangola grass for total yield and a series of plant characters during the period of one year at Río Piedras, Puerto Rico. All possible correlations among yield and three independent variables were also computed to study the possibility of utilizing these plant characters as a tool in the future selection of superior phonotypes.

The superior *Digitarias* from this study, if found to be fertile, will be utilized in an improved pasture program through the use of hybridization.

MATERIALS AND METHODS

Over 200 *Digitaria* accessions, most of them from the U. S. D. A. collection (7), were space-planted in a 3 × 3 feet nursery at Río Piedras, Puerto Rico. All grasses were planted vegetatively after they were released from a quarantine period.

The species distribution in this nursery was as follows : *D. decumbens* Stent., *D. eriantha* Steud., *D. gazensis* Rendle., *D. pongiflora* (Retz.)Pers., *D. macroglossa* Henr., *D. pentzii* Stent., *D. polevansii* (Stent.), *D. setivalva* Stent., *D. smutsii*, *D. swasilandensis* Stent., *D. valida* Stent., and *Digitaria* sp.

The main objective of this space-planted nursery was to search for superior phenotypes which could be used as forage grasses or as potential parent in a breeding program. All accessions were evaluated using visual ratings for the following plant characters : ground cover ability and/or vigor, growth type (bunch, decumbent, prostrate, etc.,), reaction to the attack of diseases, especially rust, caused by *Puccinia cahuensis* Ell and Fv., reaction to the attack of the yellow aphid (*Sipha flava Forbes*) and flowering habit. The best accessions, selected, thirty in total, their U. S. D. A. (United States Department of Agriculture) and P. R. P. I. (Puerto Rico Plant Introduction) numbers, are shown in table 1.

The 30 *Digitarias* were planted on a « Vega Alta » clay loam at Río Piedras using a randomized complete block design with four replications on January, 1966. A complete fertilizer, 14-4-10, was applied at a rate of 2,400 pounds per acre per year in six equal applications after each 60-days harvest interval. Each plot was 9 × 25 feet. A center row of 42″ × 25′ was weighed ; samples from each plot were sent to the Central Analytical Laboratory for dry matter and nitrogen percent determination. The crude protein content was calculated using the factor 6.25 times N.

Prior to each 60-day harvest all plots were evaluated using visual ratings of 1 to 9, nine being the best condition.

With total green weight (Y_1), total dry matter (Y_2) and total protein pounds (Y_3), the following plant characters were correlated : ground cover ability and/or vigor X_1) ; resistance to the attack of rust caused by *P. cahuensis*, (X_2), and resistance to the attack of the yellow aphid, *Sipha* flava (X_3). Also all possible correlations between the dependent and independent variables were made during the six harvests.

RESULTS AND DISCUSSION

The green weight yields (pounds per acre per year) produced by each *Digitaria* are shown in table 2. Selection number 16, *D. setivalva*, was the lowest producer with 55,577 pounds while selection number 5, *D. milanjiana* had the highest yields with 124,764 pounds. No significant difference was observed between selections number 5, 24, 30, 15, 22, 4, 28 and 14 at the 5 present level. All of these grasses were significantly better than the remainder 22 *Digitarias* at the 5 percent level.

All possible interrelationships among green weight yields and the three independent variables are shown in table 3. Positive significant correlations, although low, were observed between total green weight and two of the independent variables, $Y_1 X_1$, $r = 34$ and $Y_1 X_3$, $r = 12$. A significant negative correlation was observed between total green weight and resistance to the rust attack, $Y_1 X_2$, $r = 16$. The correlation coefficients for each of the six harvests are also shown in table 3. Except in the second harvest, positive significant correlations were observed between green weight and ground cover ability. The highest negative correlations between green weight and rust resistance were observed during the 4th and 5th harvests which were

made on the last part of November, 1966 and January, 1967 respectively. A significant correlation ($r = 28$), was observed between green weight and aphid resistance on harvest six.

During the period of April 1966 to March 1967 a total of 71.71 inches were recorded in the Río Piedras Station. The total precipitation (inches), every 60 day interval during the duration of the experiment was as follows : April-May, 1966 : 14.05, June-July, 1966 : 10.89, August-September, 1966 : 17.48, October-November, 1966 : 13.57, December, 1966 : January, 1967 : 11.00 and February-March, 1967 : 4.72. It can be observed from this rainfall data that the lowest precipitation was recorded on the last 60 days of the duration of the experiment or on harvest number six. Also the highest positive correlation was observed between green weight and insert resistance ($r = 28$), as compared to the remainder five harvests. A positive relationships exist between the highest yielder *Digitarias* and resistance to the attack of the yellow aphid at Río Piedras.

The data in table 4 and figure 1 show the dry matter yields for the thirty *Digitarias*. The bi-monthly comparison for each *Digitaria* is also shown in figure 2. It can be seen clearly that in the July harvest the highest yields were obtained for all the grasses. Selection number 24, *D. eriantha*, had the highest yields with 40, 484 pounds of dry matter. This selection proved to be significantly better than the remainder 29 *Digitarias* at the 5 percent level to include selection number 30 or common Pangola grass.

The dry matter yield of selection number 24 was higher than that reported for Pangola grass at Río Piedras by VICENTE-CHANDLER *et al* (21) when this grass was cut every 60 days and 800 pounds of nitrogen were applied.

In table 5 the correlation coefficients between the dry matter yields of the 30 *Digitarias* and the three independent variables are shown. The partial correlations between the dependent variable (Y) and the independent variables (X), followed a pattern similar to that observed in table 2.

The comparisons for the total protein yields of the 30 *Digitarias* are shown in table 6. Selection 24, *D. eriantha* was the highest yielder. It produced 2,449 pounds of crude protein per acre per year. No significant difference at the 5 percent level was observed among the top nine *Digitarias* ; their yields ranged from 1,897 to 2,449 pounds of crude protein per acre per year. The correlation coefficients among protein yields and the three independent variables are shown in table 7. The correlation coefficient between total protein pounds per acre and ground cover ability and or vigor, $Y_1 X_1$ ($r = 25$), was significant at the 5 percent level. The correlation coefficient between total protein pounds and rust resistance, was as in previous case negative and significant at the 5 percent level.

Utilizing the same *Digitarias* and the same field experiment reported on this paper, LIU (5), concluded that the rust disease observed on these *Digitarias* and on Pangola grass is a variant of *P. oahuensis* ; it was identified tentatively by him as *P. oahuensis* var. *Digitaria decumbensis*. This author concluded that a great number of *Digitaria* clones as P. I. 6 438 and 6 535 exhibited a high degree of resistance to the Pangola rust. According to our results, these two selections, P. I. 6 438 and P. I. 6 535 also showed a high degree of resistance to rust (table 8), but they were not immune to it. They both had a mean value of 8.4 throughout the year.

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None of the 30 *Digitarias* exhibited complete resistance to rust or to the yellow aphid attack (table 8).

Selection number 24, *D. eriantha*, had a rating of 9.0 in regard to ground cover ability and/or vigor throughout the duration of the experiment. This selection also was the highest yielder in regard to total dry matter and protein. On the other hand, Selection number 24 exhibited a poor resistance to rust attack, throughout the year, a mean value of 5.8.

The data provided in table 8 undoubtedly help to explain the negative correlations obtained between the total yield of these *Digitarias* and rust resistance. The highest yielders and hence the most vigorous and probably the most succulent selections were also the most susceptible to rust in this experiment.

SUMMARY

A large number of introductions belonging to the genus *Digitaria* mostly from the OAKES Collection, were evaluated at Rio Piedras, Puerto Rico, for a period of one year. All introductions were studied in a 3 × 3 feet spaceplanted nursery for a series of plant characters using visual ratings.

From this original nursery, the best 29 *Digitarias* and Pangola grass were planted at Rio Piedras using a randomized complete block design. The total green weight, dry matter and protein yields per acre yearly were determined. All grasses were harvested every 60 days ; prior to each cutting all plots were evaluated using visual ratings of 1 to 9, nine being the best condition. With total green weight (Y_1), total dry matter (Y_2) and total protein pounds (Y_3), the following plant characters were correlated : ground cover ability and or vigor (X_1) ; resistance to the attack of rust caused by *Puccinia oahuensis* Ell and Ev. (X_2) ; and resistance to the attack of the yellow aphid, *Sipha flava* Forbes (X_3).

Although low, significant positive correlations were obtained between $Y_1 X_1$ ($r = 0.34$), $Y_1 X_3$ ($r = 0.12$), $Y_2 X_1$ ($r = 0.29$), $Y_2 X_3$ ($r = 0.10$) and $Y_3 X_1$ ($r = 0.25$). Significant negative correlations were obtained between total yield and disease resistance ; $Y_1 X_2$ ($r = 0.16$), $Y_2 X_2$ ($r = 0.12$) and $Y_3 X_3$ ($r = 0.14$). A possible explanation to these negative correlations is that when the grasses were rated after each 60-day interval, the more vigorous and hence the most succulent grasses were also the most susceptible to the rust disease studied.

Dry matter yields ranged from 15,841 to 40,484 pounds per acre yearly. One selection, *D. eriantha* (P. R. P. I. 5277), outyielded the other *Digitarias* including Pangola grass at the 5 % level.

RÉSUMÉ

CORRÉLATION ENTRE LE RENDEMENT ET DIVERS CARACTÈRES D'APPRÉCIATION
POUR 30 CIGITARIA

Un nombre important d'espèces du genre *Digitaria* provenant essentiellement de la collection OAKES a été expérimenté à Rio Piedras sur une période de un an. L'écartement de plantation était de 90 × 90 cm dans un essai où les caractères ont été repérés par notation visuelle, de 1 à 9.

De cette première plantation on a sélectionné 29 *Digitarias* qui ont été mis en comparaison avec le Pangola en essai bloc randomisé. On a déterminé : rendement matière verte (Y_1) ; matière sèche (Y_2) ; protéine (Y_3) par ha, en récoltant à 60 j. Les notations étaient faites avant chaque récolte ; degré de couverture du sol et/ou vigueur (X_1) ; résistance à la rouille *Puccinia oahuensis* Ell. et Ev. (X_2) ; résistance aux attaques de *Sipha flava* Forbes (X_3).

Bien que faibles, des corrélations positives significatives ont été obtenues entre : $Y_1 X_1$ ($r = 0.34$) ; $Y_1 Y_3$ ($r = 0.12$) ; $Y_2 X_1$ ($r = 0.29$) ; $Y_2 X_3$ ($r = 0.10$) et $Y_3 X_1$ ($r = 0.25$). D'autre part les corrélations négatives sont les suivantes : $Y_1 X_2$ ($r = -0.16$) ; $Y_2 X_2$ ($r = -0.12$) et $Y_3 X_3$ ($r = -0.14$). On pourrait estimer que ces corrélations négatives sont liées à la plus grande sensibilité des plantes les plus succulentes à la rouille, ces plantes étant aussi les plus vigoureuses.

Les rendements en matière sèche sont compris entre 17,5 et 45,7 T/ha. Une sélection, *D. eriantha* (P. R. P. I. 5277) a dépassé les autres y compris le Pangola de façon significative.

LITERATURE CIDED

1. BASKIN (J. W.), SCHANK (S. C.) and WEST (S. H.). — Studies on germination and dormancy of *Digitaria milanjiana* (Rendle) Stapf, from tropical Africa, *Proc. Soil Crop Sci. Soc.*, 27 : 90-96, 1967.

2. DEGRAS (L.). — Introduction et étude de variétés de *Digitaria* aux Antilles, *Ann. Amélior. Plantes*, 18 : 159-169, 1968.

3. DIRVEN (J. G. P.) and VAN HOOD (H. A.). — Destructive disease of Pangola grass, *Tijdschrift Plantenziekten*, 66 : 344-349, 1960.

4. HODGES (E. M.), KILLINGER (G. B.), McCALEB (J. E.), RUELKE (O. C.), ALLEN (R. J. Jr), SCHANK (S. C.) and KRETSCHMER (A. E. Jr). — Pangolagrass, *Agric. Expt. Sta. Univ. Fla. Bull.* 718, 31 p., 1967.

5. LIU, Lii-Jang. — Occurrence of Rust of Pangola Grass in Puerto Rico, *J. Agric. Univ. P. R.* 53 : 132-139, 1969.

6. NESTEL (B. L.) and CREEK (M. J.). — Pangolagrass, *Herg. Ags.* 32 : 1-7, 1962.

7. OAKES (A. J.). — *Digitaria* collection in South Africa, *Trop. Agr.* 42 : 323-331, 1965.

8. OAKES (A. J.) and LANGFORD (W. R.). — Cold tolerance in *Digitaria*, *Agron. Jour.* 59 : 387-388, 1967.

9. RODRIGUEZ (J. P.), RIVERA-BRENES (L.). — « El Cultivo de la Yerba Pangola en Puerto Rico », *Bul. 161*, Est. Exp. Agr. Univ. P. R., Febrero, 1962.

10. SCHANK (S. C.). — Improving Pangola grass. Sunshine State Agricultural Research Report, 8 : 14-15, 1963.

11. SCHANK (S. C.) and TAN (N. V.). — Improvement of forage grasses by interspecific hybridization within the genus *Digitaria*. Proc. 61st Ann. Conv. Assoc. South. Agr. Workers, 62 : 63, 1964.

12. SCHANK (S. C.) and DECKER (H. F.). — The Florida Garden of *Digitaria* introductions. Sunshine State Agricultural Research Report, 10 : 8-9, April issue, 1965.

13. SCHANK (S. C.), DECKER (H. F.), KILLINGER (G. B.) and ALLEN (R. J. Jr). — Agronomic and cytotaxonomic comparisons between *Digitaria decumbens* and *D. pentzii*, *Crop Science* 6 : 82-83, 1966.

14. SCHANK (S. C.), DUELL (R. W.), STEENMEIJER (H. P.) and DECKER (H. F.). — Cientificos buscan progenitores de la Pangola para superar esterilidad, *La Hacienda* 62 : 66-67 (June issue), 1967.

15. SCHANK (S. C.) and DECKER (H. F.). — Cytological investigations in the genus *Dibitaria*, *Proc. Soil Crop. Sci. Soc.* 27 : 96-101, 1967.

16. SCHANK (S. C.). — Breeding grasses for resistance to pangolagrass stunt virus, Sunshine State Agricultural Research Repotr, 13 : 5-7, 1968.

17. SCHANK (S. C.) and EDWARDSON (J. R.). — Cytological examination of Pangola grass (*Digitaria decumbens* Stent.) infected with stunt virus, Crop Sci. 8 : 118-119, 1968.

18. SHAMBULINGAPPA (K. G.). — Studies on pachytene chromosomes in the genus *Digitaria*, *Genetica*, 38 : 381-387, 1968.

19. SHAMBULINGAPPA (K. G.). — Cytomorphological and Sterility Studies in *Digitaria polevansii*, Stent. *J. Agr. Univ. P. R.*, 53 : 106-112, 1969.

20. VEGA-LUNA, MAYO SCHANK (S. C.) and RUELKE (O. C.). — Seed-set temperature relationships as measured in a *Digitaria milanjiana* cross, *Proc. Soil Crop Sci. Soc.*, 27 : 101-106, 1967.
21. VICENTE-CHANDLER (J.), FIGARELLA (J.) and SILVA (S.). — Effects of nitrogen fertilization and frequency of cutting on the yield and composition of Pangola grass in Puerto Rico, *J. Agr. Univ. P. R.*, 45 (1) : 37-45, 1961.
22. WILSON (P. N.), FEWKES (D. W.) and EMSLEY (M. G.). — Note on a heavy infestation of Pangolagrass (*Digitaria decumbens* Stent) by the sugar-cane froghopper (*Aeneolamia varia saccharina. Distant*), *Trop. Agr.* 39 : 49-51, 1962.

TABLE 1

Thirty Digitarias *selected at Rio Piedras, P. R.,*
from a space-planted nursery and their Plant Introduction (P. I.) numbers

Selection Number	Species	Plant Introduction Number	
		U. S. D. A.	P. R. P. I.
1	D. milanjiana	299 655	6 464
2	D. milanjiana	299 695	6 427
3	D. milanjiana	299 696	6 429
4	D. decumbens		5 125
5	D. milanjiana	299 699	6 543
6	D. milanjiana	299 667	6 610
7	D. milanjiana subsp. eylesiana	299 716	6 482
8	D. milanjiana	299 681	6 494
9	D. milanjiana subsp. eylesiana	299 713	6 613
10	D. milanjiana subsp. eylesiana	299 736	6 658
11	D. milanjiana subsp. eylesiana	299 727	6 628
12	D. milanjiana subsp. eylesiana	299 703	6 378
13	D. milanjiana subsp. eylesiana	299 709	6 391
14	D. milanjiana subsp. eylesiana	299 730	6 415
15	D. milanjiana subsp. eylesiana	299 731	6 416
16	D. setivalva	299 791	6 471
17	D. setivalva	299 804	6 537
18	D. smutsii	299 808	6 373
19	D. smutsii	299 828	6 434
20	D. milanjiana subsp. eylesiana	299 728	6 408
21	D. decumbens	299 601	6 438
22	D. decumbens	279 651	5 124
23	D. swazilandensis	299 837	6 535
24	D. eriantha		5 277
25	D. valida	299 875	6 433
26	D. pentzii	299 742	6 405
27	D. pentzii	299 752	6 439
28	Digitaria sp.	299 892	6 402
29	Digitaria sp.	296 210	6 523
30	D. decumbens	111 110	

TABLE 2

Comparison for the total green weight yield for thirty Digitarias

Selection No.	Lbs/acre/year	Statistical Significance*
5	124,764	
24	122,832	
30	114,277	
15	113,792	
22	113,513	
4	110,711	
28	108,321	
14	108,114	
21	101,343	
20	100,704	
23	97,394	
26	96,911	
19	95,965	
29	95,840	
27	94,431	
7	93,177	
11	91,634	
6	87,801	
18	87,367	
2	86,705	
17	78,491	
8	76,137	
12	73,863	
13	70,138	
10	68,834	
1	68,186	
3	65,259	
25	64,851	
9	63,666	
16	55,577	

* Significance determined by Duncan's new multiple range test. Any two means not spanned by the same vertical line are significantly different at the 5 % level.

TABLE 3

Correlation coefficients between green weight yield ground cover ability and/or vigor, resistance to rust attack, and resistance to the yellow aphid attack for thirty Digitarias

	Ground cover ability an/or vigor (X_1)	Resistance to rust attack (X_2)	Resistance to the yellow aphid attack (X_3)
Total green weight/A/year (Y_1)......	0.34*	— 0.16*	0.12*
Green weight yield, 1st harvest	0.38*	0.16	0.06
— — 2nd —	0.02	— 0.11	0.02
— — 3rd —	0.18*	— 0.04	0.06
— — 4th —	0.32*	— 0.27*	0.09
— — 5th —	0.46*	— 0.22*	0.15
— — 6th —	0.38*	— 0.12	0.28*

* Significant at the 5 % level.
Df for total green weight A year — 716.
Df for green weight lbs on each of the six harvests = 116.

TABLE 4

Comparison for the total dry matter yield for thirty Digitarias

Selection No.	Lbs/Acre/year	Statistical Significance*
24	40,484	
23	32,444	
30	31,657	
22	31,597	
4	31,522	
5	30,676	
21	30,263	
19	29,307	
27	28,212	
14	27,674	
11	26,868	
15	26,594	
2	26,455	
28	25,907	
29	25,832	
20	24,961	
6	24,702	
26	24,379	
18	23,931	
7	23,816	
17	23,020	
12	21,700	
13	21,028	
3	20,511	
1	19,136	
10	18,703	
8	18,529	
9	17,957	
25	17,026	
16	15,841	

* Significance determined by Duncan's new multiple range test.
Any two means not spanned by the same vertical line are significantly different at the 5 % level.

TABLE 5

Correlation coefficients between dry matter yield,
ground cover ability and/or vigor, resistance to rust attack,
and resistance to the yellow aphid attack for thirty Digitarias

	Ground cover ability and/or vigor (X_1)	Resistance to rust attack (X_2)	Resistance to the yellow aphid attack (X_3)
Total dry matter yield/A/year (Y_g)..	0.29*	— 0.12*	0.10*
Dry matter yield, 1st harvest	0.24*	0.09	— 0.01
— — 2nd —	0.03	— 0.02	0.04
— — 3rd —	0.16	— 0.01	0.70
— — 4th —	0.40*	— 0.29*	0.20*
— — 5th —	0.41*	— 0.18*	0.13
— — 6th —	0.33*	— 0.06	0.23*

* Significant at the 5 % level.
Df for total dry matter/acre/year = 716.
Df for dry matter lbs on each of the six harvests = 116.

TABLE 6

Comparison for the total protein yield for thirty Digitarias

Selection No.	Lbs/Acre/year	Statistical Significance*
24	2,449	
5	2,255	
29	2,081	
28	2,071	
19	2,031	
23	2,016	
11, 22	1,956	
30	1,897	
4	1,857	
15	1,847	
21	1,767	
27, 14	1,757	
20	1,752	
7, 6	1,688	
18	1,643	
12	1,553	
26	1,513	
2	1,508	
17	1,488	
1	1,469	
8	1,394	
3	1,384	
10	1,359	
25	1,329	
9	1,205	
13	1,170	
16	1,090	

* Significance determined by Duncan's new multiple range test.
Any two means not spanned by the same vertical line are significantly different at the 5 % level.

TABLE 7

*Correlation coefficients between protein yield,
ground cover ability and/or vigor, resistance to rust attack
and resistance to the yellow aphid attack for thirty* Digitarias

	Ground cover ability and/or vigor (X_1)	Resistance to rust attack (X_2)	Resistance to the yellow aphid attack (X_3)
Total protein lbs/A/year (Y_3)	0.25*	— 0.14*	0.03
Protein lbs, 1st harvest	0.25*	— 0.07	— 0.02
— 2nd —	— 0.01	— 0.11	— 0.10
— 3rd —	0.06	— 0.04	0.01
— 4th —	0.20*	— 0.20*	0.05
— 5th —	0.26*	— 0.01	0.05
— 6th —	0.26*	0.00	0.17*

* Significant at the 5 % level.
Df for total protein lbs/A/year = 716.
Df for protein lbs on each of the six harvests = 116.

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TABLE 8

Visual rating means* for ground cover ability and/or vigor,
(X₁) resistance to rust attack, (X₂) and resistance to the yellow aphid attack,
(X₃) on thirty Digitarias at Rio Piedras, Puerto Rico

Selection Number	Visual Ratings (Means)		
	X_1	X_2	X_3
1	6.7	6.2	7.8
2	8.0	6.5	6.4
3	5.3	6.5	4.0
4	8.6	5.3	6.9
5	8.1	8.1	5.5
6	7.0	7.5	5.8
7	6.8	7.9	5.8
8	7.0	7.4	5.7
9	6.9	7.1	4.8
10	5.8	6.5	3.3
11	7.0	7.6	5.3
12	5.8	7.7	6.3
13	6.8	7.3	4.2
14	8.1	7.3	6.8
15	7.3	7.6	6.1
16	3.2	5.6	4.2
17	8.3	7.9	7.1
18	7.5	8.0	5.2
19	8.7	6.0	6.6
20	7.3	7.5	5.8
21	8.7	8.4	7.8
22	8.9	5.7	7.5
23	8.9	8.4	7.5
24	9.0	5.8	7.3
25	5.9	7.3	5.1
26	8.5	7.6	6.0
27	8.8	8.3	7.8
28	8.3	8.1	3.9
29	7.1	5.4	5.6
30	8.8	5.3	7.2

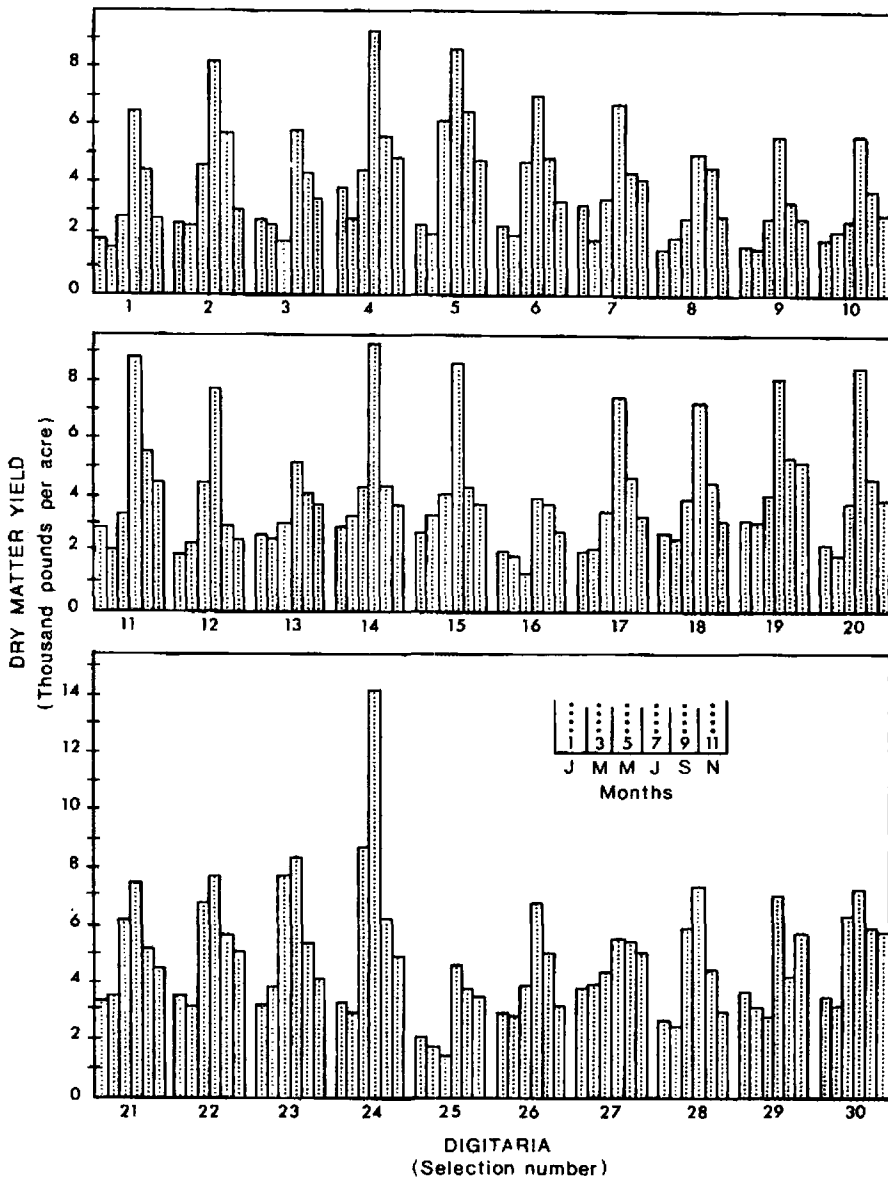* From a total of 24 ratings per selection, made every 60-days and during the period of one year.

FIG. 1. — Bi-monthly comparison of 20 *Digitaria* during the period of one year at Rio Piedras, Puerto Rico.
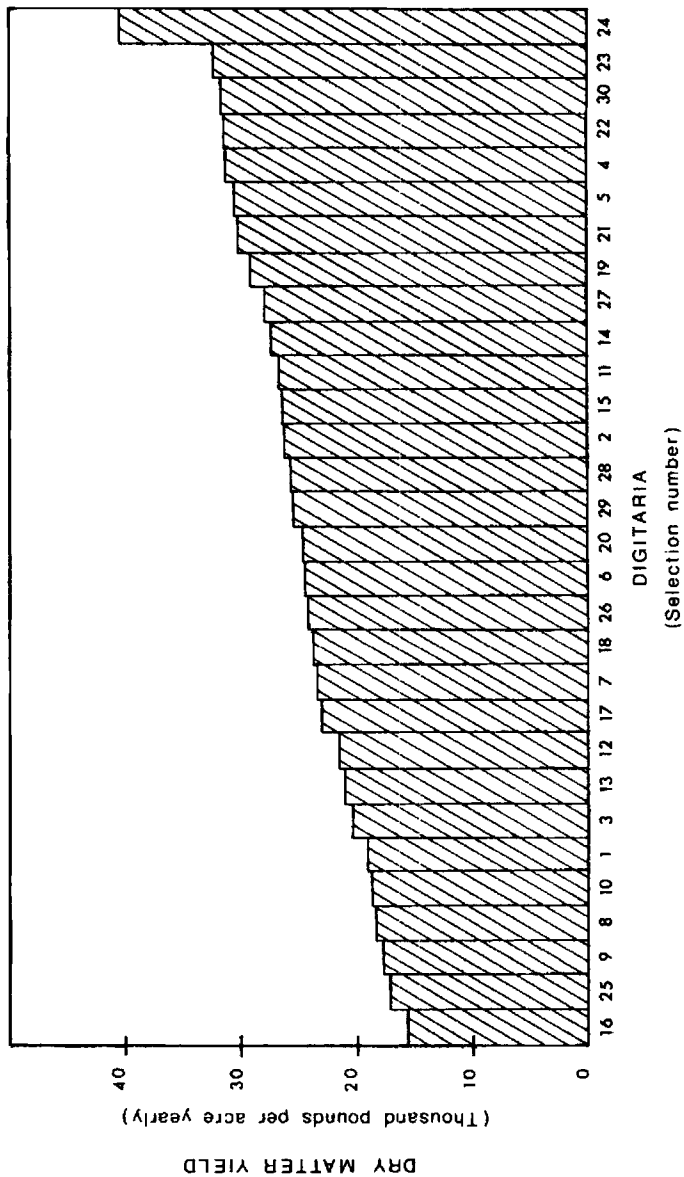
FIG. 2. — Total dry matter yields of 30 *Digitaria* during the period of one year at Rio Piedras, Puerto Rico.