Establishment and effect of cutting interval on yield and nutritive value of rhizoma perennial peanut in northwestern Puerto Rico[1]

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ABSTRACT

Ten accessions and two commercial varieties of rhizoma perennial peanut (RPP) (*Arachis glabrata* Benth.) were evaluated at the Isabela ARS farm in 1991-92 to determine percentage of ground cover (PGC), green forage yield (GFY), dry matter yield (DMY), rhizome fresh yield (RFY), and effects of 6- and 12-wk cutting intervals (CI) on DMY, crude protein concentration (CPC), and *in vitro* dry matter digestibility (IVDMD). After 36 weeks of growth, no significant differences (P = 0.05) were detected in PGC, GFY, DMY, and RFY among the eight, five, seven, and five most productive RPP, respectively. The DMY/harvest of 17095 and 17097 (2,712 and 2,859 kg/ha) was superior (P = 0.05) at the 6-wk CI; and that of 'Florigraze', 17095 and 17097 (4,052; 4,148 and 4,747 kg/ha) at the 12-wk CI, respectively. There were no differences in CPC among the six and nine RPP with higher values at the two CI and in IVDMD among the seven RPP with higher values at the 6-wk CI, while 17039 and 17044 were superior (P = 0.05) at the 12-wk CI. Accession 17097 showed the greatest overall potential with an extrapolated annual DMY of about 25 and 21 t/ha, CPC of 192 and 155 g/kg, and IVDMD of 587 and 544 g/kg at the two CI, respectively.

Key words: *Arachis glabrata*, rhizoma perennial peanut, cutting interval

RESUMEN

Establecimiento y efecto de intervalo de corte en producción y valor nutritivo de maní rizomatoso perenne en el noroeste de Puerto Rico

Diez accesiones y dos cultivares comerciales de maní rizomatoso perenne (MRP) se evaluaron en la finca Isabela del ARS durante 1991-92 para determinar el porcentaje de cobertura de terreno (PCT), rendimiento de forraje verde (RFV), rendimiento de materia seca (RMS) y rendimiento de rizoma fresco (RRF) y los efectos de intervalos de corte de 6 y 12 semanas en el RMS, concentración de proteína cruda (CPC) y digestibilidad aparente in

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vitro (DAIV). A las 36 semanas de crecimiento no se detectaron diferencias significativas (P = 0.05) en el PCT, RFV, RMS y RRF entre los ocho, cinco, siete y cinco mejores MRP, respectivamente. El RMS por corte de 17095 y 17097 (2,712 y 2,859 kg/ha) fue superior (P = 0.05) en el IC de 6 semanas; y el de Florigraze, 17095 y 17097 (4,052, 4,148 y 4,747 kg/ha) en el IC de 12 semanas, respectivamente. No se detectaron diferencias en CPC entre los seis y nueve MRP superiores en el IC de 6 y 12 semanas, respectivamente, y en DAIV entre los mejores ocho MRP en el IC de 6 semanas, aunque las accesiones *17039* y *17044* fueron superiores (P = 0.05) en el IC de 12 semanas. La accesión 17097 mostro gran potencial como leguminosa forrajera con un valor anual extrapolado de 25 y 21 t/ha; CPC de 192 y 155 g/kg y DAIV de 587 y 544 g/kg a IC de 6 y 12 semanas, respectivamente.

INTRODUCTION

Information regarding both germplasm adaptation and pasture management requirements is needed to expand the use of pasture legumes in the tropics. In the case of the rhizoma perennial peanut (RPP), selections must be made not only on the basis of their productivity and nutritional content but also on their ability to establish quickly and to compete with weeds and, in a mixed pasture, with grasses.

The genus *Arachis* is a member of the Leguminosae-Papilionoideae family (=Fabaceae), tribe Aeschynomeneae, subtribe Stylosanthinae (Rudd, 1981). The best known species of *Arachis* is the common groundnut (*A. hypogaea* L.), which is the most important oil seed in the developing world. *Arachis* species with forage value have been limited to those in the sections Caulorhizae (*A. pintoi* and *A. repens*), Rhizomatosae (*A. glabrata*) or Procumbensae (Valls and Simpson, 1993).

The perennial peanut was introduced into the United States (Florida) in 1936. In 1978, the University of Florida and USDA-SCS released cv Florigraze (Prine et al., 1981, 1986). A second rhizoma peanut cv, Arbrook, introduced into Florida from Paraguay in 1959, was released by the Institute of Food and Agricultural Sciences, University of Florida, in 1985 (Prine et al., 1986, 1990). The current rhizoma peanut area in Florida is over 7,000 ha, with more than 95% of this area planted in Florigraze.[5] According to French et al. (1993), "To date, no other forage legume has consistently demonstrated an ability to rival the rhizoma peanut's forage quality, biomass production, long-term persistence, and broad spectrum of uses under Florida environmental conditions." Widespread adaptation of RPP has been limited by its vegetative propagation requirement and a relatively slow first-year establishment rate. Once established, RPP can be used for hay or grazing and is a persistent forage legume (Ortega-S. et al., 1992).

[5]G. M. Prine, University of Florida, Gainesville, FL, personal communication.

A well-managed RPP crop may cover the ground the first season, but normal production of forage is not usually obtained until the third season; and adequate quantities of rhizome material for planting can be obtained only after the third year of growth (Prine et al., 1986). The slow development of RPP cover is thought to be directly related to poor sprout emergence and survival during stand establishment, but complete stand failure rarely occurs (Williams, 1990).

Seventy-seven *Arachis* accessions, including cv Florigraze and Arbrook, and five *A. repens* selections introduced into Puerto Rico in 1990 make up the basic material for the *Arachis* Collection of the Tropical Agriculture Research Station (TARS). This *Arachis* material was space-planted and evaluated for 16 months at the USDA-ARS farm in Isabela. The accessions and cv exhibited a broad range of variation in leaf color, growth habit, lateral plant spread, and rhizome development. The most promising material, based on preliminary assessments of lateral spread and height, was selected for further evaluation (Table 1).

This study was conducted to evaluate 10 RPP accessions and cv Arbrook and Florigraze from the TARS *Arachis* Collection. Specific objectives were to determine their rate of growth and forage and rhizome yield during the first year, and to determine their yield and nutritive value at two cutting intervals (CI) in the year after establishment.

MATERIALS AND METHODS

The experiments were conducted at the USDA-ARS Isabela farm in northwestern Puerto Rico 18.7°N, 67°W, at an elevation of 138 m. At Isabela, the soil is an Oxisol (Typic Hapludox). Preplanting tests indicated that the soil had a pH of 6.5, 2.5% organic matter, 53 mg/kg P and 0.04 $cmol_c$/kg K. Total precipitation during establishment and the yield study (16 months) was 1,888 mm. During that period, the temperature in the area ranged from 17.1 to 31.7°C. The soil was plowed and harrowed and rototilled twice before planting.

Establishment, forage and rhizome yield during the first year

The experimental design was a randomized complete block replicated four times. Freshly dug rhizome material with top growth from a 1 × 1-m area of the well-established introductory plots was hand-separated into 21 equal sections weighing approximately 250 ± 5 g. Rhizomes, along with attached top growth, were planted on 12 September 1991 at about a 15-cm depth at 0.5-m intervals in rows 0.8 m apart. Plots measured 2 × 4 m with 1.5-m alleys separating each block. Plant spacing was designed so that all plants could grow without competition

TABLE 1.—*Origin, lateral spread and plant height of a 16 mo field planting of cv Arbrook and Florigraze and 10 selected accessions of rhizoma perennial peanut grown at Isabela, P.R., 1991-92.*

TARS Accession No.	USDA PI No.[1] cultivar/other	Origin	16-month growth	
			Lateral spread	Height
			m	cm
17106	cv. Florigraze[2]	Brazil	2.0	28
17107	cv. Arbrook[3]	Paraguay	1.8	25
17033	276233	Paraguay	2.8	36
17039	468182	Brazil	2.0	23
17044	262819	Paraguay	1.9	21
17050	262826	Paraguay	1.9	28
17052	262833	Paraguay	2.0	23
17078	468363	Paraguay	2.0	28
17085	338257	Brazil	2.2	23
17095	338262	Brazil	2.3	18
17097	262839	Brazil	1.8	32
17102	S-18 (identity lost)	Unknown	1.7	22

[1]PI No. = Plant introduction number.
[2]Possible cross between PI Nos. 118457 and 151982.
[3]A selection from PI 262817.

and to facilitate the monitoring of the percentage of ground cover (PGC). The experiment was irrigated twice during the first week of planting and weekly thereafter for the first month to ensure plant survival and avoid moisture stress. Plots were fertilized with 22, 40, 20 and 20 kg/ha of P, K, S and Mg, respectively. Weed control included applications of Bentazon (Basagran[6]) and fluazifop-p-butyl (Fusilade) at the rates of 0.96 and 1.2 kg ai/ha, respectively. The first application was 6 wk after planting (18 October 1991). Plots were hand weeded before the monitoring of the ground cover. Estimates of the PGC were made at 12, 24, and 36 weeks of growth, with a divided (20 × 20 cm) 1-m quadrat frame (Toledo and Shultze-Kraft, 1982). The PGC was measured in the center of each plot. Yield estimates were made on 29 May 1992, using a 1 × 1-m quadrat frame per plot. Material was cut at ground level and weighed. Subsamples of 250 ± 5 g were taken and oven dried to constant weight to determine dry matter yield (DMY). Plant vigor was estimated on the

[6]Trade names in this publication are used only to provide specific information. Mention of a trade name does not constitute a warranty of equipment or materials by the Agricultural Experiment Station of the University of Puerto Rico or the USDA-ARS, nor is this mention a statement of preference over other equipment or materials.

day of harvest by digging rhizomes from a 20 × 20-cm area to a depth of 15 cm in the center of each plot. Rhizome fresh yield (RFY) was determined from 1-m^2 samples taken at random in each plot. Analysis of variance was used to test the statistical significance of variations in PGC, green forage yield (GFY), DMY, RFY, crude protein concentration (CPC), and in vitro dry matter digestibility (IVDMD). Separation of treatment means was accomplished by using Fisher's protected least significant difference (LSD) (P = 0.05) following the procedures of the Statistical Analysis System (SAS Institute, Inc., 1987).

Yield and nutritive value in the year after establishment

The eight-and-a-half-month-old established rhizoma peanut plots were cut back to ground level on 29 May 1992 with special hand shears (sheep shears). After a 2-wk regrowth, Fusilade was applied at the rate of 1.2 kg ai/ha to control Johnsongrass (*Sorghum halepense* (L.) Pers.), a native Bermudagrass (*Cynodon dactylon* (L.) Pers.), and nutsedge (*Cyperus rotundus* L.). The full stands were then divided with a rototiller into two subplots, each measuring 2 × 1.75 m with an 0.5-m alley between them. The experimental design was a split-plot arrangement of a randomized complete block with four replications (Steel and Torrie, 1980). The 10 selected RPP accessions and cv Florigraze and Arbrook were considered the main plots and the cutting intervals (6 and 12 wk) the subplots. The two harvesting treatments were then randomly assigned to the subdivisions. Harvesting of subplots began 6 and 12 wk after cutback and was repeated at these intervals four and two times, respectively. The forage was cut at ground level in a 1 × 1-m quadrat in the center of each plot. The fresh weight was recorded to determine GFY and DMY, and subsamples of 250 ± 5 g were removed and dried to constant weight in a forced air oven at 60°C for a period of 60 hours. After each harvest, the remaining forage in the plots was removed with hand shears. The combined, dried subsamples were ground fine enough in a Wiley mill to pass through a 1-mm sieve, bagged, and stored for laboratory analysis. All ground samples were redried and placed in a $CaCl_2$-containing desiccator immediately before analysis. Total N concentration in combined fractions of the forage was determined by the standard Kjeldahl procedure (A.O.A.C., 1990) in the TARS chemical laboratory. Crude protein concentration was estimated by multiplying total N by 6.25. In vitro dry matter digestibility was determined by using a modification of the two-stage technique of Tilley and Terry (1963).

A combined analysis of variance was performed with accessions and cv as the main plot factor and CI as the subplot factor (Steel and Torrie, 1980) using the PC SAS. Treatment means were separated by using Fisher's protected LSD (P = 0.05).

RESULTS AND DISCUSSION

Environmental conditions at Isabela, especially the amount and distribution of rainfall, varied greatly during this study but had no adverse effect on the establishment of the RPP accessions and cultivars. They produced excellent stands, and no replanting was needed. Monitoring ground cover evaluates effectively the rate of plant growth. All plant material in this experiment was slow to exhibit lateral spread during the first four to eight weeks. At four wk after planting, very little lateral sprout emergence was observed from the rhizomes. This finding agrees with the observation made by Williams (1990) that it takes three to four wk for rhizoma peanut to start sprouting. Williams (1993) suggested that a slow rate of cover was directly related to poor sprout emergence and survival after planting. Both broadleaf and grass weed control, however, is critical for initial establishment of rhizoma peanut. Canudas et al. (1989) reported that when both broadleaf and grass weeds were controlled in the first year of planting, rhizoma peanut PGC developed more quickly. Stands then took 8 to 12 weeks to stabilize lateral sprout emergence. Williams (1993) reported that the stabilization of sprout density (number of live sprouts/m^2) by 12 wk after first-sprout emergence was due to a combination of no new sprouts and no further mortality.

Ground cover at 12, 24 and 36 weeks

Accessions 17097, 17052 and 17102 had greater ground coverage, over 38% at 12 wk of growth; and no differences in PGC were observed among them (Table 2). At 24 wk of growth, there were no significant differences in the PGC of 17095, 17097, Florigraze, 17052 and 17102, which exceeded 70%. At 36 wk, no significant differences were observed among 10 accessions which had a PGC ranging from 99 to 84%. The accessions and the two cv took approximately nine months to develop a full plot cover under the conditions of this experiment. Excellent establishment of the rhizoma peanut with full coverage has been achieved in Florida in a single year; however, a typical planting requires two to three years for complete stand development (Prine, 1985). Williams (1990) indicated that, in the absence of environmental stress, sprout survival of rhizoma peanut is dependent upon unclear and ill-defined intrinsic factors of the planting material such as carbohydrate reserves and rhizome diameter and length. In this study, it could not be determined whether the planting material affected the rate of plant spread.

Rhizome development and forage yield

Differences were detected among accessions for RFY, GFY, and DMY at 36 wk of growth (Table 2). The stand persistence of RPP is as-

TABLE 2.—*Percentage of ground cover (PGC) at 12, 24, and 36 wk of growth and rhizome fresh yield (RFY), green forage yield (GFY), and dry matter yield (DMY) at 36 wk of growth of cv Arbrook and Florigraze and 10 selected accessions of rhizoma perennial peanut grown at Isabela, P. R., 1991-92.*

	PGC			Yield at 36 wk of growth		
TARS Accession No.	12	24	36	RFY	GFY	DMY
	weeks			kg/m²	kg/m²	kg/ha
17106 Florigraze	34.8	74.4	94.6	4.77	0.63	1763
17107 Arbrook	36.7	67.5	96.7	3.57	0.44	1257
17033	35.3	54.6	83.7	2.32	0.66	1828
17039	26.1	55.5	86.5	3.14	0.33	921
17044	29.2	64.5	88.2	4.09	0.37	1094
17050	36.7	59.7	93.1	3.47	0.42	1228
17052	40.0	73.1	93.9	2.86	0.64	1650
17078	25.4	45.1	72.7	3.27	0.33	984
17085	27.9	38.0	59.3	1.43	0.31	875
17095	35.4	80.2	98.5	3.80	0.77	2268
17097	43.8	78.4	98.9	3.44	0.84	2160
17102	38.1	72.4	89.0	2.25	0.45	1334
Mean	37	64	88	3.2	0.52	1447
LSD = 0.05	6	8	11	1.5	0.27	695
CV %	13	9	9	33	36	33

sociated with the development of its rhizomes. Florigraze, 17044, 17095, Arbrook, 17050, 17097, and 17078 exhibited higher values for RFY/unit area, which ranged from 4.77 to 3.27 kg/m². Reed and Ocumpaugh (1991) reported an average rhizome yield of 2.05 kg/m² in selected lines of RPP, well below the mean reported in this study. The variation in rhizome yield among genotypes in the Reed and Ocumpaugh study was the result of genotype × environment interactions and soil conditions which favored the development of rhizomes. The 6:2 ratio of RFY to GFY in this study is high compared to that obtained by other researchers. Saldivar et al. (1992a) reported shoot/rhizome ratios of 1.6-1.8 for the summer growth of RPP, followed by a decline to 0.5-0.7 by November. This finding was attributed to differential partitioning of photosynthate to the rhizome system and also the apparent sensitivity of RPP to shorter day lengths and lower temperatures in the fall, which reduce shoot growth.

No differences were observed in GFY among the five most productive accessions (17097, 17095, 17052, 17033 and cv Florigraze). Their yields ranged from 0.84 to 0.63 kg/m².

DMY at the 36-wk harvest averaged 1,447 kg/ha (Table 2). No differences were observed among the top five accessions (17095, 17097, 17033, Florigraze and 17052), which had yields ranging from 2,268 to 1,650 kg/ha. Lower DMY/harvest was obtained from accessions 17078, 17039 and 17085, and ranged from 984 to 875 kg/ha. The high yield of most of the RPP accessions in this study is indicative of their ability to adapt to the edaphic and climatic conditions at the Isabela site.

Effect of cutting interval

The 6- and 12-wk CI produced significant differences in DMY, CPC, and IVDMD among the RPP (Table 3). As expected, DMY increased with the longer CI. At the 6-wk CI, accessions 17097 and 17095 had significantly higher yields (2,859 and 2,712 kg/ha). Accession 17097's yield was 25% higher than that of Florigraze. At the 12-wk CI, no significant differences (P = 0.05) were observed among the highest producers (accessions 17097 and 17095 and Florigraze) with DMY ranging from

TABLE 3.—*Dry matter yield (DMY), crude protein concentration (CPC), and in vitro dry matter digestibility (IVDMD) of cv Arbrook and Florigraze and 10 selected accessions of rhizoma perennial peanut harvested at 6- and 12-wk cutting intervals (CI) at Isabela, P. R., 1991-92.*

TARS Accession No.	DMY		CPC		IVDMD	
	kg/ha		g/kg			
17106	2288[1]	4052[2]	191[1]	150[2]	591[1]	545[2]
17107	2119	3723	197	153	616	540
17033	2083	3928	169	134	592	541
17039	1953	3587	183	155	585	568
17044	1874	3054	186	161	600	580
17050	2096	3849	193	156	601	540
17052	2187	3603	197	155	596	519
17078	1240	2921	175	146	523	525
17085	1334	2918	163	140	565	536
17095	2712	4148	174	150	561	505
17097	2859	4747	192	155	587	544
17102	2443	3859	192	156	596	537
Mean	2104	3700	184	151	588	540
LSD = 0.05	284	712	6	9	28	28
CV %	21	19	5	6	16	16

[1]= 6-wk CI.
[2]= 12-wk CI.

4,747 to 4,052 kg/ha (Table 3). Accession 17097, the highest yielder at both cutting intervals, theoretically would have the capacity to produce a DMY of about 25,000 and 20,500 kg/ha/yr at 6- and 12-wk CI, respectively. The 12 RPP produced an average of 51 and 44 kg/ha/day of dry matter at the shorter and longer CI, respectively. Apparently, it is more profitable to harvest the RPP at a 6-wk than at a 12-wk CI. For material harvested in the summer in Florida, Romero et al. (1987) reported a DFY of 3,070 for a 6-wk and 8,210 kg/ha for a 12-wk CI, a 167% increase. For the fall harvests, yields were 2,250 and 2,800 kg/ha for the shorter and longer CI, respectively. Data of a 24-wk study in Florida by Beltranena et al. (1981) showed that Florigraze DMY increased from 8.0 to a maximum of 12.4 t/ha as CI increased from 2 to 8 wk. A 12-wk interval supported yield (12 t/ha) similar to that of the 8-wk schedule. According to Van Soest (1982), factors that accelerate the rate of plant growth are an increase in temperature, light and water. Day length apparently affected the RPP accessions in the study since there was a decrease in DMY by the fourth harvest of the 6-wk CI made in November. A similar decrease in DMY was observed for the second (November) harvest of the 12-wk CI. Saldivar et al. (1992b) attributed a reduction in shoot growth in RPP to shorter day length and lower temperatures. Sotomayor-Ríos et al. (1990) reported an estimated yield decrease from 7,119 (February planting) to 2,113 kg/ha (July planting) among accessions of *Stylosanthes guianensis* (Aubl.) Sw. due to the effect of photoperiodism. In that study, total DMY for 6- and 12-wk CI (8,405 and 7,390 kg/ha) indicated 12% higher yields at the 6-wk CI. A 6-wk CI seems to be the most appropriate for harvesting RPP to obtain optimum regrowth under the conditions of this study. A 12-wk interval, however, would be the most suitable for hay production, since 6-wk regrowth material is often too short. This finding agrees with observations made by Beltranena et al. (1981) that Florigraze shoots at a 6-wk CI were too short to cut for hay. Accessions 17097, 17095, and 17102 and cv Florigraze and Arbrook exhibited high DMY for tropical forage legumes with limited fertilization and no liming.

Nutritive value

The mean CPC of above-ground dry matter decreased 33 g/kg at the longer CI (Table 3). No significant differences ($P = 0.05$) were observed among the six accessions having a high CPC at the 6-wk CI (17052, Arbrook, 17050, 17097, 17102, and Florigraze); the CPC ranged from 197 to 191 g/kg. At the 12-wk CI, accession 17044 had the highest CPC (161 g/kg); however, it was not different ($P = 0.05$) from that of Arbrook and five other RPP (Table 3). Romero et al. (1987) found differences in CPC for mixed leaf/stem RPP components, with a mean of 149 and 134 g/kg for 6- and 12-wk summer harvests, respectively, and 174 and 132 g/kg for 6- and 12-wk fall harvests, respectively. Ocumpaugh (1990) reported that the CPC of both leaf and stem components in RPP is largely a function of rainfall, with defoliation treatments having little effect, and noted that there was a tendency for the most immature plant tissues to have higher leaf and stem CPC. These data, however, were taken at the onset of new growth following a drought-induced leaf drop. Beltranena et al. (1981) noted that CPC also decreased as the CI lengthened from 2 wk (22%) to 12 wk (14%), in agreement with the present results. Decreases in CPC in this study were a result of changes in the leaf:stem ratio with maturity. Accessions 17033 and 17085, with the lowest CPC at both CI, exhibited an upright, stemmy, open-growth habit, which is associated with lower CPC. Minson (1984) indicated that the CPC of tropical legumes declines slowly over time; and, when mature, tropical legumes in general contain no more than 9% CP. The CPC of RPP forage is adequate to support efficient beef and milk production if combined with abundant dry matter supplied by associated high-yielding grasses.

There were no differences among the seven accessions with high IVDMD at the 6-wk CI, which ranged from 616 to 591 g/kg. At the 12-wk CI, the IVDMD of two accessions, 17039 and 17044 (568 and 580 g/kg), was higher ($P = 0.05$) than that of the remaining RPP. Leaf and stem components of the RPP material evaluated in Puerto Rico exhibited high IVDMD comparable to that obtained in the studies of Saldivar et al. (1990) and Beltranena et al. (1981). Even though a decrease in IVDMD occurred at the 12-wk harvest, the digestibility of the combined leaf and stem components of the plants studied is somewhat similar to the mean value of 566 g/kg reported by Minson (1984) for a large sample of tropical legumes. Saldivar et al. (1990) reported a rate of decline in in vitro digestible organic matter (IVDOM) of the leaf and stem components of Florigraze; but leaf IVDOM always exceeded 600 g/kg, and stem values were maintained above 500 g/kg. Beltranena et al. (1981) obtained IVDOM mean values of 743 and 640 g/kg for Florigraze by clipping at 2-wk and 10-wk CI, respectively.

The data reported here provide growth rate information on 10 rhizoma peanut accessions and cv Arbrook and Florigraze that should be useful in developing strategies for planting, managing, and utilizing this legume in Puerto Rico and similar areas of the tropics. RPP accessions differ in their rate of establishment. In our study, accessions 17097 and 17095, Arbrook, and Florigraze had 95% or more ground cover at 36 wk after planting. The difference in rhizome development in this study indicates that enough genetic variation exists among accessions of rhizoma peanut to affect their establishment rate and stand persistence. This variability can be further exploited by breeding or selection among the accessions. DMY of 17097 and 17095 accessions and cv Florigraze were statistically equal in productivity at the 12-wk CI. DMY at the 6-wk CI indicates the high recovery rate of most RPP accessions and suggests their possible year-round forage production use in livestock grazing systems in the tropics. At the 12-wk CI, the legume will produce sufficient dry matter for hay production although its forage quality will be lower than that at the 6-wk CI. In our study, two 12-wk CI harvests produced over 8,000 kg/ha of dry matter. In Florida, comparable yields have been reported by Breman (1980) at similar CI. Yield and nutritive value of RPP accessions are sufficiently high to warrant their potential use in special-purpose pastures, protein banks, or in grass-legume associations. The role of rhizoma perennial peanut in tropical livestock production and management systems deserves greater attention and merits long-term investigation.

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