Chemical Composition of Some Wild Peanut Species (*Arachis* L.) Seeds

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Oil, protein, ash, and carbohydrate contents, iodine value, and fatty acid and sterol compositions were studied in seeds of *Arachis trinitensis*, *A. chiquitana*, *A. kempff-mercadoi*, *A. diogoi*, *A. benensis*, *A. appressipila*, *A. valida*, *A. kretschmeri*, *A. helodes*, *A. kuhlmannii*, *A. williamsii*, *A. sylvestris*, *A. matiensis*, *A. pintoi*, *A. hoehnei*, *A. villosa*, and *A. stenosperma*. Oil content was greatest in *A. stenosperma* (mean value = 51.8%). The protein level was higher in *A. sylvestris* (30.1%) and *A. villosa* (29.5%). Mean value of oleic acid varied between 30.6% (*A. matiensis*) and 46.8% (*Arachis villosa*), and linoleic acid oscillated between 34.1% (*A. villosa*) and 47.4% (*A. appressipila*). The better oleic-to-linoleic (O/L) ratio was exhibited by *A. villosa* (1.38). Some species showed higher concentration of behenic acid. The greatest level of this fatty acid was found in *A. matiensis* (6.2%). Iodine value was lower in *A. valida* (99.2). The sterol composition in the different peanut species showed higher concentration of β-sitosterol (mean values oscillated between 55.7 and 60.2%) followed by campesterol (12.4−16.5%), stigmasterol (9.7−13.3%), and Δ^5-avenasterol (9.7−13.4%). The chemical quality and stability of oils (iodine value and O/L ratio) from wild peanut studied in this work are not better than those of cultivated peanut.

Keywords: *Fatty acid; sterol; oil; protein; carbohydrate; wild peanut; Arachis*

INTRODUCTION

At present there are 68 described wild species of *Arachis* native to South America (Krapovickas and Gregory, 1994). Substantial evidence suggests that the genetic base or gene pool of the cultivated peanut, *A. hypogaea* L., does not have the reserve germplasm needed to resist many of the new agricultural problems brought on by pollution, dwindling water supplies, and the necessity for biological control methods against insects and plant pathogens. Wild species of *Arachis* contain new sources of germplasm that can be used to increase variability in the genetic base of cultivated peanut (Stalker et al., 1989).

Leguminous seeds make an important contribution to the diet in many tropical countries. They are a good source of protein, lipid, and fatty acids for human nutrition (Gaydou et al., 1983). The fatty acid composition of endogenous fats plays an important role in determining the shelf life, nutrition, and flavor of food products. The lipids and proteins of cultivated peanut seeds have been widely studied (Ahmed and Young, 1982). However, some germplasm samples of wild peanut species have not been studied yet. The objective of this work was to characterize some chemical components of wild species of *Arachis*.

EXPERIMENTAL PROCEDURES

Plant Material. Sound and mature seeds of *Arachis trinitensis* Krapov. & W. C. Gregory, *A. chiquitana* Krapov., W. C. Gregory & C. E. Simpson, *A. kempff-mercadoi* Krapov., W. C. Gregory & C. E. Simpson, *A. diogoi* Hoehne, *A. benensis* Krapov., W. C. Gregory & C. E. Simpson, *A. appressipila* Krapov. & W. C. Gregory, *A. valida* Krapov. & W. C. Gregory, *A. kretschmeri* Krapov. & W. C. Gregory, *A. helodes* Martius ex Krapov. & Rigoni, *A. kuhlmannii* Krapov. & W. C. Gregory, *A. williamsii* Krapov. & W. C. Gregory, *A. sylvestris* (A. Chev.) A. Chev., *A. matiensis* Krapov., W. C. Gregory & C. E. Simpson, *A. pintoi* Krapov. & W. C. Gregory, *A. hoehnei* Krapov. & W. C. Gregory, *A. villosa* Benth., and *A. stenosperma* Krapov. & W. C. Gregory were provided by the INTA (Instituto Nacional de Tecnología Agropecuaria) peanut germplasm bank of Manfredi, Córdoba, Argentina. All species used in this work were cultivated in the same crop year (1993/1994), season, and place (INTA, Manfredi). All seeds had the same conditions for decreasing environmental effects in the result expected. The data collection and classification are presented in Table 1. Wild peanut species were named according to the taxonomic classification of peanut that was reported by Krapovickas and Gregory (1994).

Determination of Oil, Ash, Protein, and Carbohydrate Contents. Three samples each containing five seeds from each cultivar were examined for oil, protein, and ash. These seeds were selected at random.

Seeds were milled and oil was extracted for 16 h with petroleum ether (boiling range = 30−60 °C) in a Soxhlet apparatus. The extracted oils were dried over anhydrous sodium sulfate, and the solvent was removed under reduced pressure in a rotary film evaporator. Oil percentage was determined by weight difference.

Ash and nitrogen contents were determined according to an AOAC (1980) method. Ash was performed by incineration in a muffle furnace at 525 °C. The nitrogen content was estimated according to the Kjeldahl method and converted to protein percentage by using the conversion factor 5.46 (Young and Hammons, 1973). Carbohydrate content was estimated by difference of the other components using the following formula: carbohydrate content = 100% − (% protein + % oil + % ash).

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10.1021/jf9901744 CCC: $19.00
Published on Web 03/02/2000

Table 1. Collection Data of Wild Species of Peanut (*Arachis*)

species	collection no.[a]	section
A. sylvestris	VSW 6676	*heteranthae*
A. pintoi	GK 12787	*caulorrhizae*
A. chiquitana	KSSc 36027	*procumbentes*
A. appressipila	KG 30009	*procumbentes*
A. kretschmeri	IRFL 2273	*procumbentes*
A. matiensis	V 6407-2	*procumbentes*
A. trinitensis	Wi 1117	*arachis*
A. kempff-mercadoi	KG 30090	*arachis*
A. diogoi	KG30101	*arachis*
A. benensis	KG 35007	*arachis*
A. valida	KGPSc 30147	*arachis*
A. helodes	KG 30036	*arachis*
A. kuhlmannii	KG30034	*arachis*
A. williamsii	Wi 1118	*arachis*
A. hoehnei	V 9094-2	*arachis*
A. villosa	S 862	*arachis*
A. stenosperma	VS 7762	*arachis*

[a] Voucher specimens have been deposited at Museo Botánico de Corrientes (CTES), Argentina.

Fatty Acid Composition. Fatty acid methyl esters were prepared by transmethylation with a 3% solution of sulfuric acid in methanol, as previously described (Jellum and Worthington, 1966). The fatty acid methyl esters of total lipids were analyzed on a Shimadzu GC-R1A gas chromatograph equipped with a flame ionization detector (FID). An AT-Wax superox II (Alltech, Deerfield, IL) capillary column (30 m × 0.25 mm i.d.) was used. Column temperature was programmed from 180 °C (held for 10 min) to 240 °C (4 °C/min). Injector temperature was 250 °C. The carrier (nitrogen) had a flow rate of 1 mL/min. The separated fatty acid methyl esters were identified by comparing their retention times with those of authentic samples, which were purchased from Sigma Chemical Co. Quantitative analysis of the fatty acids was performed using an internal standard. Iodine values were calculated from fatty acid composition (Hashim et al., 1993) using the following formula: IV = (% oleic × 0.8601) + (% linoleic × 1.7321) + (% eicosenoic × 0.7854).

Sterol Composition. Sterols of the unsaponifiable matter from 5 g of oil (after saponification with alcoholic 1 M potassium hydroxide, Sigma Chemical Co., ACS reagent grade) were purified by preparative thin-layer chromatography (TLC). TLC was performed on silica gel 60 G (20 × 20 cm, 0.5 mm layer thickness) plates using chlororoform/diethyl ether (9:1 v/v) as the developing solvent. The approximate relative R_f values of the 4-desmethylsterols fraction was 0.27. The unsaponifiable matter was dissolved in chloroform (5%), and 150 mL was deposited as a streak of 15 cm length on the plate. Cholesterol (Sigma Chemical Co.), used as standard, was spotted on the left- and right-hand sides of the plate. The corresponding band of 4-desmethylsterols was scraped off the plate and extracted with chloroform (Gaydou et al., 1983). Purified sterols were analyzed on a Shimadzu GC-R1A gas chromatograph equipped with an FID. A Shimadzu CBP1 capillary column (25 m × 0.25 mm i.d.) was used. Column temperature was programmed from 200 to 300 °C (4 °C/min). Injector temperature was 320 °C. The carrier (nitrogen) had a flow rate of 1 mL/min. Standard sterols (Sigma Chemical Co.) were run to use retention times in identifying sample peaks. The amount of sterols was determined using an internal standard. The data were calculated using an integrator on the chromatograph.

Statistical Analyses. All analyses for each wild peanut species were done in triplicate. An analysis of variance was performed on the data, and means were separated using the test of Tukey (Montgomery, 1991).

RESULTS AND DISCUSSION

Oil, protein, ash, and carbohydrate contents and iodine values are shown in Table 2. Peanuts are characterized by high oil and protein contents and low carbohydrates and ash. Knowledge of these components is important in the end products of the industry (Ahmed and Young, 1982). The highest oil, protein, and carbohydrate contents were in *A. stenosperma* (mean value = 51.8%), *A. sylvestris* (mean value = 30.1%), and *A. helodes* (mean value = 23.3%), respectively. Significant differences were found in these contents. As shown by the results of Table 2, the species of different sections showed similarities. However, *A. sylvestris* of the section heteranthae was characterized by the highest protein level and lowest oil content in relation to the species of other sections studied in this work. The variation range of oil percentage (45.7−51.8%) was similar to that of other species of wild peanut previously reported (Stalker et al., 1989), although the studied species and environmental conditions were different. Ash percentages were ∼2.5%, and they did not exhibit significant differences among the species.

Table 2. Mean Oil, Protein, Ash, and Carbohydrate Contents and Iodine Value of Wild Peanut Species[a]

species	protein	oil	carbohydrate	ash
A. sylvestris	30.1 a ±0.60	45.7 c ±1.15	21.7 ab ±0.70	2.5 a ±0.15
A. pintoi	27.1 abcd ±1.29	49.7 abc ±1.31	21.4 ab ±1.23	2.5 a ±0.12
A. chiquitana	28.1 abcd ±1.67	47.3 abc ±1.84	22.4 ab ±3.12	2.5 a 0.15
A. appressipila	26.4 bcd ±0.50	50.4 abc ±0.82	20.6 ab ±1.31	2.6 a ±0.06
A. kretschmeri	27.4 abcd ±0.70	48.8 abc ±1.67	21.4 ab ±1.08	2.5 a ±0.10
A. matiensis	28.9 abc ±1.00	46.2 bc ±1.51	23.1 a ±0.47	2.5 a ±0.12
A. trinitensis	26.6 bcd ±1.30	49.9 abc ±0.75	21.1 ab ±0.72	2.4 a ±0.06
A. kempff-mercadoi	25.8 cd ±1.01	50.8 ab ±1.61	20.9 ab ±0.74	2.6 a ±0.06
A. diogoi	28.6 abc ±1.45	47.0 abc ±2.17	22.5 ab ±0.62	2.6 a ±0.15
A. benensis	27.1 abcd ±1.01	48.5 abc ±1.99	21.8 ab ±0.91	2.6 a ±0.11
A. valida	25.8 cd ±0.85	51.1 a ±2.01	20.7 ab ±1.05	2.4 a ±0.15
A. helodes	29.0 abc ±0.70	45.8 c ±1.37	23.3 a ±0.46	2.3 a ±0.06
A. kuhlmannii	27.8 abcd ±0.81	49.4 abc ±1.22	20.3 ab ±0.51	2.5 a ±0.06
A. williamsii	28.7 abc ±1.11	48.7 abc ±1.66	20.1 ab ±0.64	2.5 a ±0.10
A. hoehnei	28.6 abc ±1.22	47.1 abc ±1.90	21.8 ab ±0.74	2.5 a ±0.06
A. villosa	29.5 ab ±1.68	48.6 abc ±1.49	19.4 b ±0.91	2.5 a ±0.10
A. stenosperma	25.0 c ±0.68	51.8 a ±1.57	20.0 ab ±0.59	2.5 a ±0.06

[a] Expressed as percentages (g/100 g) on dry matter basis. Means followed by the same letter within each column are not significantly different at $P = 0.05$.

The fatty acid composition is presented in Table 3. Palmitic (16:0), stearic (18:0), oleic (18:1), linoleic (18:2), arachidic (20:0), eicosenoic (20:1), behenic (22:0), and lignoceric (24:0) acids were detected. Only stearic acid did not exhibit significant differences among peanut species. Oleic and linoleic acids were the principal components (Table 3). Oleic acid was predominant in *A. villosa* (46.8%), *A. valida* (41.6%), and *A. kuhlmannii* (42.5%). The other species showed lower oleic and higher linoleic concentrations. This was the principal difference with respect to the fatty acid composition of peanut cultivars previously published (Branch et al., 1990;

Table 3. Fatty Acid Composition, Oleic to Linoleic Ratio (O/L), and Iodine Value (IV) of Wild Peanut Species[a]

	fatty acid composition (g/100 g of total fatty acids)									
species	16:0	18:0	18:1	18:2	20:0	20:1	22:0	24:0	O/L	IV
A. sylvestris	10.0 ab ±0.47	1.6 a ±0.26	39.5 bcd ±1.70	41.2 cdefg ±0.92	1.0 bc ±0.23	1.9 abc ±0.40	3.2 efg ±0.36	1.6 ab ±0.35	0.96 cde ±0.07	106.8 abcd ±0.43
A. pintoi	9.9 ab ±0.36	1.7 a ±0.20	35.5 def ±0.80	44.7 abcd ±1.31	1.3 abc ±0.20	1.5 bc ±0.26	4.0 cdef ±0.36	1.5 ab ±0.21	0.79 efgh ±0.04	109.0 ab ±1.40
A. chiquitana	10.2 ab ±0.65	2.2 a ±0.42	36.3 de ±1.41	44.9 abc ±0.40	0.9 c ±0.35	1.8 abc ±0.60	2.4 fg ±0.67	1.3 ab ±0.31	0.81 efgh ±0.03	110.4 a ±1.32
A. appressipila	10.0 ab ±0.57	2.3 a ±0.42	30.8 g ±1.42	47.4 a ±1.76	1.3 abc ±0.25	2.1 abc ±0.75	4.2 bcdef ±1.20	2.0 ab ±0.35	0.65 h ±0.06	110.2 a ±1.25
A. kretschmeri	9.8 b ±0.78	1.9 a ±0.36	37.5 bcde ±2.20	40.1 fg ±1.32	1.27 abc ±0.25	2.9 ab ±0.35	4.9 abcde ±0.35	1.7 ab ±0.32	0.94 cde ±0.09	104.0 cdef ±0.61
A. matiensis	9.6 b ±0.36	1.9 a ±0.36	30.6 g ±1.11	44.6 abcd ±1.26	1.3 abc ±0.20	3.2 a ±0.31	6.2 a ±0.42	2.3 a ±0.46	0.69 gh ±0.04	106.1 bcd ±1.45
A. trinitensis	10.5 ab ±0.92	2.6 a ±0.42	35.1 f ±0.91	45.3 ab ±1.06	1.0 c ±0.38	1.3 c ±0.46	2.0 g ±0.42	1.9 ab ±0.36	0.78 efgh ±0.58	109.6 ab ±2.02
A. kempff-mercadoi	10.4 ab ±0.87	1.8 a ±0.49	37.4 bcde ±1.55	43.3 bcdef ±1.85	1.1 bc ±0.21	2.5 abc ±0.36	2.1 g ±0.57	1.1 b ±0.59	0.87 defg ±0.08	109.1 ab ±2.23
A. diogoi	10.3 ab ±0.51	1.6 a ±0.29	36.4 cde ±0.86	44.2 abcde ±2.04	1.0 bc ±0.32	2.33 abc ±0.51	3.0 fg ±0.70	1.2 ab ±0.44	0.83 defgh ±0.06	109.6 ab ±2.40
A. benensis	11.1 ab ±0.59	2.4 a ±0.62	31.6 fg ±1.79	43.3 bcdef ±1.15	1.8 ab ±0.26	2.3 abc ±0.55	5.8 ab ±0.76	1.77 ab ±0.35	0.73 fgh ±0.06	104.0 cdef ±0.99
A. valida	9.8 b ±0.90	1.8 a ±0.49	41.6 b ±1.60	35.7 h ±1.33	2.0 a ±0.25	2.1 abc ±0.62	5.4 abcd ±0.65	1.7 ab ±0.45	1.17 b ±0.09	99.2 g ±0.49
A. helodes	10.4 ab ±0.62	2.2 a ±0.46	40.5 bc ±1.15	40.6 efg ±1.28	1.3 abc ±0.40	1.4 c ±0.53	2.7 fg ±0.35	1.0 b ±0.53	1.00 bcd ±0.06	106.2 bcd ±0.87
A. kuhlmannii	10.2 ab ±0.60	2.0 a ±0.31	41.5 b ±1.60	37.9 gh ±1.76	1.3 abc ±0.36	2.1 abc ±0.40	3.7 defg ±0.76	1.4 ab ±0.46	1.10 bc ±0.10	102.9 defg ±1.37
A. williamsii	11.7 a ±0.59	1.8 a ±0.42	35.5 def ±1.00	39.8 fg ±0.72	1.47 abc ±0.25	2.3 abc ±0.76	5.7 abc ±0.35	1.7 ab ±0.31	0.89 def ±0.04	101.3 efg ±0.95
A. hoehnei	9.6 b ±0.20	1.9 a ±0.20	38.1 bcde ±0.85	42.1 bcdef ±0.80	1.2 abc ±0.10	1.7 bc ±0.30	4.0 cde ±0.35	1.4 ab ±0.21	0.90 def ±0.04	107.1 abc ±0.46
A. villosa	10.7 ab ±0.21	2.5 a ±0.25	46.8 a ±1.22	34.1 h ±1.00	1.3 abc ±0.15	1.3 c ±0.17	2.1 g ±0.40	1.1 b ±0.15	1.38 a ±0.08	100.3 fg ±0.80
A. stenosperma	10.5 ab ±0.21	1.7 a ±0.15	38.0 bcde ±1.00	40.8 defg ±1.07	1.2 abc ±0.15	2.1 abc ±0.15	4.1 bcdef ±0.31	1.7 ab ±0.15	0.93 cde ±0.05	104.9 cde ±1.10

[a] Means followed by the same letter within each column are not significantly different at $P = 0.05$.

Table 4. Sterol Composition of Wild Peanut Species[a]

	sterol composition (g/100 g of total sterols)						
species	cholesterol	campesterol	stigmasterol	β-sitosterol	Δ^5-avenasterol	Δ^7-stigmasterol	Δ^7-avenasterol
A. sylvestris	1.7 a ±0.25	14.7 ab ±1.35	10.2 a ±1.25	56.3 a ±1.11	13.1 ab ±1.01	1.9 a ±0.42	2.1 a ±0.35
A. pintoi	1.5 a ±0.36	13.7 ab ±1.12	11.3 a ±1.30	59.7 a ±1.50	10.5 abc ±1.54	1.8 a ±0.60	1.5 a ±0.36
A. chiquitana	1.1 a ±0.49	15.9 ab ±1.39	10.2 a ±2.32	57.6 a ±2.52	11.7 abc ±1.30	1.4 a ±0.26	2.0 a ±0.42
A. appressipila	1.0 a ±0.35	15.9 ab ±0.72	13.3 a ±0.87	55.7 a ±0.96	10.7 abc ±0.85	1.4 a ±0.38	1.9 a ±0.32
A. kretschmeri	1.1 a ±0.26	15.0 ab ±1.57	11.5 a ±1.55	59.1 a ±1.91	9.7 c ±0.90	1.6 a ±0.42	1.9 a ±0.35
A. matiensis	1.2 a ±0.30	16.4 a ±1.60	9.7 a ±1.80	60.2 a ±1.71	10.0 abc ±0.81	1.0 a ±0.31	1.5 a ±0.45
A. trinitensis	0.8 a ±0.40	12.4 b ±1.86	13.0 a ±1.57	60.1 a ±0.67	10.3 abc ±1.29	1.5 a ±0.26	1.8 a ±0.45
A. kempff-mercadoi	1.1 a ±0.42	14.7 ab ±1.60	11.1 a ±1.99	57.3 a ±1.00	12.1 abc ±1.04	1.9 a ±0.60	1.8 a ±0.55
A. diogoi	1.0 a ±0.42	15.4 ab ±1.45	11.1 a ±1.84	57.6 a ±0.95	11.8 abc ±1.10	1.4 a ±0.45	1.6 a ±0.35
A. benensis	1.3 a ±0.40	14.1 ab ±1.17	12.4 a ±0.70	56.2 a ±1.45	12.1 abc ±1.35	1.9 a ±0.47	2.0 a ±0.56
A. valida	1.0 a ±0.25	14.6 ab ±1.47	12.8 a ±1.14	57.8 a ±1.65	10.5 abc ±1.20	1.5 a ±0.32	1.8 a ±0.31
A. helodes	0.9 a ±0.49	16.1 ab ±1.05	10.3 a ±1.65	59.5 a ±1.93	10.7 abc ±0.93	1.2 a ±0.38	1.3 a ±0.45
A. kuhlmannii	1.3 a ±0.30	15.4 ab ±1.21	10.1 a ±1.36	57.5 a ±0.55	13.4 a ±0.96	1.0 a ±0.38	1.4 a ±0.38
A. williamsii	1.3 a ±0.31	16.5 a ±1.15	9.8 a ±1.10	59.6 a ±2.10	9.8 bc ±1.07	1.3 a ±0.31	1.6 a ±0.35
A. hoehnei	1.0 a ±0.31	15.0 ab ±1.12	10.9 a ±1.66	58.1 a ±0.71	12.2 abc ±1.25	1.3 a ±0.47	1.7 a ±0.40
A. villosa	0.9 a ±0.40	15.6 ab ±1.08	11.3 a ±0.85	58.5 a ±2.35	10.8 abc ±1.00	1.1 a ±0.40	1.8 a ±0.35
A. stenosperma	1.0 a ±0.40	14.1 ab ±1.33	12.6 a ±0.68	57.0 a ±1.70	12.4 abc ±1.05	1.4 a ±0.38	1.5 a ±0.47

[a] Means followed by the same letter within each column are not significantly different at $P = 0.05$.

Grosso and Guzmán, 1995a). However, the wide variation of the oleic and linoleic acid percentages in the investigated species was also found in other species of *Arachis* (Stalker et al., 1989). The species (*A. appressipila* and *A. matiensis*) of the section procumbentes were characterized by a high level of linoleic acid and a low oleic/linoleic ratio. On the other hand, some species of the section arachis (*A. villosa*, *A. valida*, *A. kuhlmannii*, and *A. helodes*) exhibited a high content of oleic acid and a high oleic/linoleic ratio. In general, the percentages of fatty acids did not allow many similarities and differences among sections to be established. Behenic acid showed high values in some wild peanut species. *A. matiensis* had 6.2%. This fatty acid in high level is not recommended in the oil industry because this could produce muddiness in the oil when the temperature is low (between 0 and 4 °C). The differences among species investigated in this work were probably not due to climatic conditions because all samples of species were cultivated in the same year, growing season, and locality. However, the differences observed with data previously reported could be due to these causes.

Iodine value and oleic-to-linoleic ratio (O/L) are both indicators of peanut oil stability and shelf life (Ahmed and Young, 1982). Higher O/L ratios and lower iodine values suggest better stability, longer shelf life, and higher quality of the oils (Branch et al., 1990). All wild species of peanut had in relation to iodine value and O/L ratio, lower stability and quality of their oils than the U.S. peanut cultivars (Branch et al., 1990). The O/L ratio ranged between 0.65 (*A. appressipila*) and 1.38 (*A. villosa*) (Table 3). Only the O/L ratio of *A. villosa* was higher than that of most Argentinean cultivars (Grosso et al., 1994). The variations observed between the results of this work and those of other works could be due to differences in climatic conditions, soil moisture, and air temperature during maturation of peanut seed (Ahmed and Young, 1982). In relation to iodine value, *A. valida* (99.2) and *A. villosa* (100.3) had lower values. *A. villosa* showed low iodine value and high O/L ratio among the studied species. This could indicate better stability and quality in its oils.

The sterols are components of unsaponifiable lipids and are important to identify blends of fats and oils (Belitz and Grosch, 1987). Tocopherols and sterols are also of interest because of their antioxidant activities (Dutta and Appelqvist, 1996). The following sterols were detected (Table 4): cholesterol, campesterol, stigmasterol, β-sitosterol, Δ^5-avenasterol, Δ^7-stigmasterol, and Δ^7-avenasterol. The sterol composition in the different peanut species showed higher concentration of β-sitosterol (mean values oscillated between 55.7 and 60.2%) following by campesterol (12.4−16.5%), stigmasterol (9.7−13.3%), and Δ^5-avenasterol (9.7−13.4%). These results exhibited similarity with those of aboriginal peanut cultivars previously reported (Grosso and Guzmán, 1995b). Some significant differences among the peanut species were found in campesterol and Δ^5-avenasterol contents. The sterol composition did not permit characterization of the section of wild peanut, at least in the number of species that were studied in this work.

The chemical quality and stability of oils (iodine value and O/L ratio) from wild peanut species studied in this work are not better than thsoe of cultivated peanut except in *A. villosa*, the oil stability of which is similar to that of cultivated peanut from Argentina. Therefore, crop improvement will not be possible by utilizing these wild species. However, the chemical composition data of peanut species are important because they contribute to the characterization of germplasm bank materials.

ACKNOWLEDGMENT

We thank Antonio Krapovickas and José R. Pietrarelli for identification of the samples and R. Sanchez for providing the plant material.

LITERATURE CITED

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Received for review February 12, 1999. Revised manuscript received September 9, 1999. Accepted October 5, 1999. We thank CONICET, CONICOR, and SECYT-UNC for financial support of this project.

JF9901744