Table 21.1 Studies on the Diet of Howlers

Species	Study site	Year	Study length (months/hours)	Sampling method	Group size	Rainfall (mm)	Forest size (ha)	Time feeding (%)[b]	Plant items in diet (%)					No. species	No. families	%TFS[e]	>50% TFT[f]	Sources fruits	Sources leaves	Refs.[g]
									Fruits	Leaves		Flowers	OFI[d]							
										All[c]	Young									
A. belzebul	Pacatuba, MG, Brazil	1985-1986	14/–	Scan	7	2,176	271	6.5	59.0	13.3	6.0	27.6	0.2	47	21	–	–	38	6	1
A. belzebul	Pacatuba, MG, Brazil	1998-1999	11/–	Scan	–	2,176	271	12.3	20.1	46.1	6.2	11.6	–	–	–	–	–	–	–	2
A. belzebul	Estação Científica Ferreira Penna, PA, Brazil	1997-1998	10/–	Scan	9	2,250	33,000	31.4	35.1	60.5	–	4.4	–	–	–	–	–	–	–	3
A. belzebul	Paranaíta, MT, Brazil	1999-2000	10/–	Scan	8	2,174	10,000	20	55.6	25.6	19.8	5.7	13.2	67	24	38.0	10	35	27	4
A. belzebul	Cauaxi, PA, Brazil	2000	10/1,203	Scan	6	2,000	20,000	18.8	43.4	45.0	–	11.3	0.4	–	–	–	–	–	–	5
All *A. belzebul* [h]					7.5 (6-9)	2,155.2 (2,000-2,250)	12,708.4 (271-33,000)	17.8 (6.5-31.4)	42.6 (20.1-59)	38.1 (13.3-60.5)	10.7 (6-19.8)	12.1 (4.4-27.6)	4.6 (0.2-13.2)	57 (47-67)	22.5 (21-24)	38	10	36.5 (35-38)	16.5 (6-27)	
A. caraya	Parque Nacional de Brasília, BSB, Brazil	1984	4/–	–	–	1,520	30,000	–	–	–	–	–	–	12	11	–	–	2	11	6
A. caraya	Ribeirão Preto, SP, Brazil	1980-1983	26/480	–	16	1,400	8.8	–	38.7	52.7	–	8.7	–	32	15	–	–	11	19	7
A. caraya	Riachuelo River, Corrientes, Argentina	1994-1995	2/200	Ad libitum	6	1,200	10	–	–	–	–	–	–	–	–	–	–	–	–	8
A. caraya	Riachuelo River, Corrientes, Argentina[‡]	1981-1982	15/528	Focal	7	1,200	7, 10, 12	–	29.0	71.0	–	–	–	23	17	~93	2	11	17	9
A. caraya	Isla Guáscara, Corrientes, Argentina[‡‡]	1981	3/58	Focal	10	1,200	40	–	–	–	–	–	–	12	10	–	–	5	12	10
A. caraya	El Piñalito, Misiones, Argentina[*]	2006-2007	12/734	Scan	10.8	1,952	3,796	–	19.0	64.0	25.0	6.0	10.0	56	–	40.4	9	7	9	11
A. caraya	Estabelecimento N.S[a] Conceição, RS, Brazil	2005-2006	12/699	Scan	13	1,500	0.7	14.9	12.3	82.4	–	2.7	2.6	14	13	61.7	2	9	12	12
A. caraya	Estância Casa Branca, RS, Brazil	1989-1990	12/745	Scan	16	1,500	2	–	28.9	60.9	15.6	2.7	7.5	27	18	77.4	3	20	18	13
A. caraya	Several locations in RS, Brazil	1989-90/2005-07	36/2,274	–	–	1,500	–	–	–	–	–	–	–	–	–	–	–	–	–	14
A. caraya	Isla Brasilera, Argentina[*]	1998-2000	17/1,680	Scan	18.5	1,230	141	18.9	19.0	64.0	13.0	12.0	5.0	22	13	–	–	17	12	15
A. caraya	San Cayetano, Corrientes, Argentina [‡]	2005-2008	–	Focal/scan	6.75	1,230	–	–	–	–	–	–	–	–	–	–	–	–	–	16
A. caraya	Ilha Mutum, PR, Brazil	2004-2005	12/306	Scan	10	1,250	1,050	–	24.0	65.0	–	10.0	1.0	18	14	79.5	2	9	14	17
A. caraya	Rancho Praia Grande, PR, Brazil	2004-2005	12/288	Scan	12	1,250	–	–	46.0	49.0	–	4.0	1.0	18	11	84.4	3	9	13	18
A. caraya	N. Esperança and N. Querência, MS, Brazil	2002-2003	15/–	Scan	6	1,250	6,267	14.7	35.5	51.7	3.7	12.9	–	–	–	–	–	–	–	19
A. caraya	Corrientes, Argentina	–	–	–	6	1,200	12	15.2	26.7	70.5	–	0.8	2.0	–	–	–	–	–	–	20
A. caraya	Rancho Guaycolec, Formosa, Argentina	1988-1989	–	–	–	1,300	300	13.3	21.2	72.8	–	2.7	3.3	–	–	–	–	–	–	21
A. caraya	Tupanciretã, RS, Brazil	2006-2007	12/830	Scan	4.5	1,700	0.3	19	2.0	85.0	–	11.0	2.0	17	13	95.5	1	6	15	22
A. caraya	Corrientes, Argentina	1992-1993	20/421	Ad libitum	8.5	1,645	15	–	43.5	50.5	26.0	5.3	0.6	–	–	–	–	–	–	23
All *A. caraya*					10.1 (4.5-18.5)	1,390.4 (1,200-1,952)	2.974.5 (0.3-30,000)	16 (13.3-19)	26.6 (2-46)	64.6 (49-85)	16.7 (3.7-26)	6.6 (0.8-12.9)	3.5 (0.6-10)	22.8 (12-56)	13.5 (10-18)	73.2 (40.4-95.5)	3.1 (1-9)	9.6 (2-20)	13.8 (9-19)	
A. guariba	El Piñalito, Misiones, Argentina[*]	2006-2007	12/660	–	7.5	1,952	3,796	–	24.0	62.0	24.0	6.0	7.0	40	–	50.0	5	7	9	24
A. guariba	Montes Claros, MG, Brazil	1983-1984	10/–	Scan	7	1,250	970	15.6	15.6	70.6	18.0	8.4	5.4	–	–	–	–	–	–	25
A. guariba	Cantareira, SP, Brazil	1979	–	–	–	1,400	5,400	–	29.4	70.6	–	–	–	13	9	–	–	4	11	26
A. guariba	Sta. Genebra, SP, Brazil	1991-1992	12/718.5	Scan	6	1,366	250	18.5	5.0	76.0	59.0	12.0	8.0	68	30	49.3	6	12	60	27
A. guariba	Sta. Genebra, SP, Brazil	1988-1991	45/–	All ocurrence	–	1,366	250	–	15.0	75.0	–	10.0	–	52	24	37.0	9	18	42	28
A. guariba	Montes Claros, MG, Brazil	2003	6/–	Ad libitum	8	1,250	970	–	–	–	–	–	–	–	–	–	–	–	–	29
A. guariba	Mata Doralice, PR, Brazil [†]	2001-2002	12/122	Ad libitum	4.33	1,148	170	–	47.9	50.3	–	1.4	0.3	42	21	60.4	4	11	5	30
A. guariba	Fazenda Barreiro Rico, SP, Brazil	2001-2002	12/–	Scan	6	1,284	1,450	–	8.0	80.7	–	7.5	3.7	–	–	–	–	–	–	31
A. guariba	Parque Estadual Itapuã, RS, Brazil	–	–	–	8.5	1,200	35	20	36.0	54.0	27.0	10.0	0.0	45	–	–	6	32	37	32
A. guariba	Aracuri, RS, Brazil	1993-1994	13/765	Ad libitum	6	1,200	70	19	29.0	59.0	26.0	12.0	–	43	–	–	4	–	–	33
A. guariba	Fazenda Rio Claro, SP, Brazil	1992-1993	12/408	Scan	3.5	1,385	165	10	21.0	76.0	10.0	0.0	–	34	18	46.2	6	11	31	34
A. guariba	Floresta Nacional de Três Barras, SC, Brazil	–	–	–	7	1,300	4,458.5	19	34.0	38.0	–	–	–	–	–	–	–	–	–	35
A. guariba	Mata Boa Vista, RJ, Brazil	1993-1994	17/700	Scan	4	1,400	80	13	12.0	72.0	–	10.0	6.0	–	–	–	–	–	–	36
A. guariba	Ribeirão Cachoeira, SP, Brazil	1995-1996	12/228	Scan	8	1,409	234	16	12.0	74.0	–	9.0	6.0	–	–	–	–	–	–	37

Table 21.1 (*cont'd*)

Species	Study site	Year	Study length (months/hours)	Sampling method	Group size	Rainfall (mm)	Forest size (ha)	Time feeding (%)[b]	Plant items in diet (%)					No. species	No. families	%TFS[e]	>50% TFT[f]	Sources fruits	Sources leaves	Refs.[g]
									Fruits	Leaves		Flowers	OFI[d]							
										All[c]	Young									
A. guariba	Parque Estadual Intervales, SP, Brazil	1998-1999	12/918.3	All ocurrence	6	1,707	49,888	17	23.0	74.0	37.0	1.0	2.0	95	–	–	5	34	72	38
A. guariba	Chácara Payquerê, PR, Brazil *	2003-2004	12/393	Ad libitum	5	1,600	700	–	–	–	–	–	–	–	–	–	–	–	–	39
A. guariba	Chácara Payquerê, PR, Brazil	2002-2003	12/76.5	Scan	6	1,600	700	–	41.0	57.0	–	1.7	0.3	34	20	–	–	20	21	40
A. guariba	Floresta da Cicuta, RJ, Brazil ‡	2002	5/165	All ocurrence	5.75	1,600	131	–	7.0	81.0	–	2.0	10.0	–	–	–	–	–	–	41
A. guariba	Montes Claros, MG, Brazil	1983	2/100	–	–	1,250	880	–	5.0	88.0	–	–	–	–	–	–	–	–	–	42
A. guariba	Sapiranga, RS, Brazil	1981	–/–	–	–	1,300	–	–	–	–	–	–	–	13	10	–	–	10	8	43
A. guariba	Fontes do Ipiranga, SP, Brazil	–	44/–	Feces	–	1,368	526.4	–	–	–	–	–	–	76	34	–	–	52	2	44
A. guariba	Morro da Extrema, RS, Brazil	2002-2003	12/609	Scan	12	1,300	27	12	19.0	66.0	–	4.0	–	–	–	–	–	–	–	45
A. guariba	Morro da Extrema, SP, Brazil	1998-1999	7/454	Scan	9.5	1,310	27	28.2	28.3	57.6	31.5	6.4	3.9	35	21	54.7	6	11	30	46
A. guariba	Lami, SP, Brazil	1998-1999	7/415	Scan	8.5	1,310	12	34.5	40.4	46.1	21.6	8.3	2.6	26	19	65.2	3	11	20	46
A. guariba	Campo de Instrução de Sta. Maria, RS, Brazil	2005	12/654	Scan	7	1,700	1.8	–	17.8	67.0	41.9	7.8	–	52	–	47.7	6	8	44	47
A. guariba	Campo de Instrução de Sta. Maria, RS, Brazil	2005	12/623	Scan	6	1,700	20	–	35.3	58.8	44.3	5.2	–	48	–	60.1	3	5	42	47
A. guariba	Campo de Instrução de Sta. Maria, RS, Brazil	2005	12/577	Scan	5	1,700	977	–	8.8	78.3	51.1	10.0	–	48	–	51.5	5	14	42	47
A. guariba	Barra do Ribeiro, RS, Brazil	2007	5/243	Focal	6.5	1,350	5	17.1	34.3	53.3	–	12.2	–	38	24	56.1	5	10	32	48
A. guariba	Ipê, RS, Brazil	2007-2008	12/636	Scan	6	1,900	2.2	20	15.0	78.0	–	2.0	5.0	42	22	56.0	4	13	41	49
A. guariba	Cantareira, SP, Brazil	–	–	–	9	1,400	7,900	21	15.0	55.0	50.0	29.0	–	41	–	–	6	–	–	50
A. guariba	Camaquã, RS, Brazil	2004/2005	13/–	Focal	5	1,200	10	30	29.5	70.5	38.9	–	–	–	–	–	–	–	–	51
All *A. guariba*					6.7 (3.5-12)	1,426 (1,148-1,952)	2,670.2 (1.8-49,888)	19.4 (10-34.5)	22.5 (5-47.9)	66.3 (38-88)	34.3 (10-59)	7.7 (0-29)	4.3 (0-10)	44.3 (13-95)	21 (9-34)	52.9 (37-65.2)	5.2 (3-9)	15.7 (4-52)	30.5 (2-72)	
A. macconelli	Petit Saut hydro-eletric dam, French Guiana	–	<1/70	Scan	5	2,600	–	26	–	55.0	–	–	45.0	–	–	–	–	–	–	52
A. macconelli	Les Nourages, French Guiana	1989	6/–	Feed frecuency	6	3,125	100,000	–	42.0	56.9	55.7	0.7	0.5	77	27	–	–	43	29	53
A. macconelli	Les Nourages, French Guiana	1988-1990	19/1,540	Feed frecuency	6	3,125	100,000	–	25.5	57.0	54.0	12.6	4.9	195	47	16.5	~40	97	96	54
A. macconelli	Saut Pararé, French Guiana	1977-1985	21/–	Stomach conts.	–	3,125	100,000	–	45.8	53.4	–	0.4	0.5	–	–	–	–	–	–	55
A. macconelli	Raleighvallen-Voltzbert Reserve, Surinam	1976-1977	12/–	–	–	2,375	56,000	–	69.0	28.6	14.3	2.4	–	–	–	–	–	–	–	56
All *A. macconnelli*					5.7 (5-6)	2,870 (2,375-3,125)	89,000 (56,000-100,000)	26	45.6 (25.5-69)	50.2 (28.6-57)	41.3 (14.3-55.7)	4 (0.4-12.6)	12.7 (0.5-45)	136 (77-195)	37 (27-47)	16.5	~40	70 (43-97)	62.5 (29-96)	
A. palliata	Isla Agaltepec, VER, Mexico	1989-1990	10/1,500	Focal	18	2,029	8.3	24	59.0	28.9	–	–	12.1	28	15	60.4	3	–	–	57
A. palliata	Isla Agaltepec, VER, Mexico	1989-1996	74/2,303	Focal	19.5	2,029	8.3	27	39.5	29.4	–	–	31.1	36	15	66.0	3	18	32	58
A. palliata	Isla Agaltepec, VER, Mexico	1989-1990	10/1,500	Focal	10	2,029	8.3	22.7	52.5	26.6	–	–	20.9	32	15	61.6	4	–	–	59
A. palliata	Isla Agaltepec, VER, Mexico	1997	10/630	Focal	57	2,029	8.3	16.9	31.0	33.0	–	–	37.0	30	13	45.9	6	–	–	59
A. palliata	Isla Agaltepec, VER, Mexico	1997-1998	11/300	Focal	59	2,029	8.3	29	21.4	57.1	48.5	5.3	16.3	56	23	43.2	7	15	52	60
A. palliata	Playa Escondida, VER, Mexico	1997-1998	11/300	Focal	7	3,500	40	25.9	57.3	36.9	32.6	0.2	5.6	49	26	66.8	3	22	42	60
A. palliata	Arroyo de Lisa, VER, Mexico	2000-2001	11/300	Focal	6	3,500	1.3	24.2	51.2	36.6	33.5	2.1	10.0	35	19	62.2	3	17	29	60
A. palliata	Barro Colorado Island, Panama	1932	5/–	Ad libitum	–	2,730	1,600	–	–	–	–	–	–	56	29	–	–	20	29	61
A. palliata	Barro Colorado Island, Panama	1974-1976	14/480	Scan	11	2,730	1,600	16.2	36.9	53.4	–	9.3	–	73	32	43.7	7	25	59	62
A. palliata	Barro Colorado Island, Panama	1974-1976	14/540	Scan	11	2,730	1,600	16.2	46.7	43.6	–	9.6	–	73	32	63.9	3	22	58	62
A. palliata	Hacienda La Pacifica, Costa Rica	1972-1973	14/2,078	Focal	13	1,431	9.9	21.3	12.5	63.6	44.2	18.2	5.7	62	25	44.7	6	15	51	63
A. palliata	Hacienda La Pacifica, Costa Rica	–	–/–	–	–	1,431	9.9	–	–	–	–	–	–	–	–	–	–	–	–	63
A. palliata	Sta. Rosa, Costa Rica	1983-1985	17/393	Focal	40	1,527	10,800	15.7	28.5	49.0	17.4	22.5	–	11	4	64.9	3	5	5	64
A. palliata	Sta. Rosa, Costa Rica	1996-1998	18/1,380	Scan	7.5	1,527	10,800	11.6	28.6	41.5	27.6	29.5	0.4	37	18	64.3	3	17	27	65

Table 21.1 (*cont'd*)

Species	Study site	Year	Study length (months/hours)	Sampling method	Group size	Rainfall (mm)	Forest size (ha)	Time feeding (%)[b]	Plant items in diet (%)					No. species	No. families	%TFS[e]	>50% TFT[f]	Sources fruits	Sources leaves	Refs.[g]
									Fruits	Leaves		Flowers	OFI[d]							
										All[c]	Young									
A. palliata	Refugio de Fauna Silvestre Curu , Costa Rica	1990	1/31	–	–	2,738	60	–	0.0	94.2	0.0	5.8	0.0	–	–	–	–	–	–	66
A. palliata	Barro Colorado Island, Panama §§	1966-1968	14/–	–	–	2,730	1,600	–	62.8	27.4	21.2	5.9	–	27	13	–	–	20	9	67
A. palliata	Barro Colorado Island, Panama **	1967-1968	6/407	Scan	–	2,730	1,600	21.6	38.8	53.7	–	5.6	1.8	–	–	–	–	–	–	68
A. palliata	Isla Ometepe, Nicaragua	1999	4/350	Focal/scan	7.1	1,550	4	21.5	11.0	54.0	–	33.0	–	–	–	–	–	–	–	69
A. palliata	Yumká, Tabasco, Mexico	2000-2001	7/302	Focal	28	2,159	33	13.2	15.0	72.0	38.0	13.0	–	21	13	–	3	5	20	70
A. palliata	Rancho Huber, Veracruz, Mexico	2003-2004	12/–	–	–	3,800	244.1	14	46.0	49.0	–	5.0	0.0	–	–	–	–	–	–	71
A. palliata	Montepío-G3, Veracruz, Mexico	2003-2004	12/–	–	–	3,800	63.8	14	23.0	77.0	–	0.0	0.0	–	–	–	–	–	–	71
A. palliata	Ruiz Cortinez, VER, Mexico	2003-2004	12/–	–	–	3,800	7.2	22	40.0	60.0	–	0.0	0.0	–	–	–	–	–	–	71
A. palliata	Flor de Catemaco, VER, Mexico	2004-2005	8/400	Focal	4	3,500	90	25.6	41.0	55.0	10.0	–	1.0	26	16	79.5	2	–	–	72
A. palliata	Montepío-T1, VER, Mexico	2002-2003	11/140	Focal	10	3,800	63.8	8	16.0	81.0	–	–	–	14	11	86.0	2	–	–	73
A. palliata	Montepío-T2, VER, Mexico	2002-2003	11/176	Focal	19	3,800	63.8	9	18.0	80.0	–	–	–	19	9	73.4	3	–	–	73
A. palliata	Sta. Martha, VER, Mexico	1986-1987	12/–	Focal	10	3,800	10	28	30.0	–	–	–	–	7	–	98.8	1	–	–	74
A. palliata	Sta. Martha, VER, Mexico	1996-1997	12/–	Focal	22	3,800	8	40	13.0	61.0	–	26.0	–	40	18	56.4	5	–	–	75
A. palliata	Rancho Huber, VER, Mexico	2006-2007	13/480	Focal	9	4,900	244	24.2	49.4	48.3	32.8	1.0	1.3	–	–	–	–	–	–	76
A. palliata	Ruiz Cortinez, VER, Mexico	2006-2007	13/480	Focal	8	4,900	7.2	17.9	39.1	58.3	49.6	2.2	0.4	–	–	–	–	–	–	76
A. palliata	EBT Los Tuxtlas, VER, Mexico	1977-1982	12/–	–	16	4,500	700	–	–	–	–	–	–	19	11	–	–	19	–	77
A. palliata	EBT Los Tuxtlas, VER, Mexico	1977-1978	12/883	Focal	14	4,500	700	–	51.0	49.3	39.3	0.2	–	27	16	79.6	2	12	24	78
A. palliata	EBT Los Tuxtlas, VER, Mexico	–	–	Focal	16	4,500	700	–	53.0	46.0	36.0	–	1.0	–	–	–	–	–	–	79
A. palliata	La Venta, TAB, Mexico	2001	5/448.5	Focal	15	1,800	6	–	19.0	76.0	57.0	5.0	–	31	17	57.5	4	9	30	80
A. palliata	F1, Los Tuxtlas, VER, Mexico	1994-1995	7/~840	Focal	6	4,900	3.7	12	29.0	65.0	56.0	0.4	6.0	44	19	82.8	3	–	–	81
A. palliata	F1, Los Tuxtlas, VER, Mexico	1999-2000	7/~840	Focal	6	4,900	2.2	13	20.0	80.0	78.0	0.1	0.1	33	17	82.4	2	–	–	81
A. palliata	F1, Los Tuxtlas, VER, Mexico	1999	6/–	Focal	5	4,900	3.2	24.3	1.9	98.1	81.9	0.0	0.0	–	–	–	–	–	–	82
A. palliata	F2, Los Tuxtlas, VER, Mexico	1999	6/–	Focal	7	4,900	35	16.4	44.1	45.2	34.2	10.7	0.0	–	–	–	–	–	–	82
A. palliata	F3, Los Tuxtlas, VER, Mexico	1999	6/–	Focal	8	4,900	250	28	71.8	23.5	22.5	4.7	0.0	–	–	–	–	–	–	82
A. palliata	Sta. Rosa, Costa Rica	1991-1992	11/577	Focal	5.7	1,527	10,800	23	14.3	58.5	31.8	27.3	–	37	16	74.9	3	5	25	83
A. palliata	Sta. Rosa, Costa Rica	1991-1992	11/532	Focal	11.7	1,527	10,800	23	18.0	63.0	33.8	19.0	–	30	18	71.7	3	17	28	83
A. palliata	Sta. Rosa, Costa Rica	1991-1992	11/628	Focal	20	1,527	10,800	24	22.3	58.0	36.3	19.8	–	29	18	72.2	3	7	25	83
A. palliata	Sta. Rosa, Costa Rica	1992	7/193	Focal	6	1,527	10,800	24	23.5	50.0	24.5	26.5	–	35	21	55.6	4	8	30	83
A. palliata	Cuero y Salado, Honduras	2000-2001	12/81	Focal	7	3,050	8,615.75	36.1	13.9	82.8	64.2	3.3	–	15	12	79.7	2	3	15	84
A. palliata	Cuero y Salado, Honduras	2000-2001	12/32.9	Focal	6	3,050	8,615.75	39.4	13.0	81.1	59.2	5.9	–	14	13	72.7	3	3	14	84
A. palliata	Finca La Luz, Mombacho, Nicaragua	1999-2000	14/396	Focal	25.9	1,490	650	11.1	29.0	58.0	19.0	10.0	3.0	50	~17	55.5	5	17	34	85
A. palliata	Finca La Luz, Mombacho, Nicaragua	1999-2000	14/451	Focal	15.3	1,490	650	13.5	42.0	50.0	22.0	5.0	3.0	43	~14	67.3	3	14	33	85
A. palliata	Finca La Luz, Mombacho, Nicaragua	1999-2000	14/461	Focal	20.2	1,490	650	15.4	34.0	56.0	38.0	8.0	2.0	45	~15	70.4	2	13	30	85
A. palliata	F1, Los Tuxtlas, VER, Mexico	–	12/–	Focal	7	4,900	3.6	17	38.0	62.0	–	1.0	–	–	–	–	–	–	–	86
A. palliata	La Selva, Heredia, Costa Rica	1991-1992	15/140	Scan	22	3,962	46,000	25	17.0	72.0	57.0	11.0	–	95	42	42.9	7	32	75	87
A. palliata	La Selva, Heredia, Costa Rica	1991-1992	15/208	Scan	12	3,962	46,000	27	29.0	65.0	57.0	6.0	–	65	36	67.3	2	24	49	87
A. palliata	Montepío 2, VER, Mexico	2009-2010	12/207	Focal	16	4,900	100	14.8	15.9	39.7	–	0.5	–	–	–	–	–	–	–	88
A. palliata	Balzapote, VER, Mexico	2009-2010	12/197	Focal	10	4,900	10	20.2	25.6	39.4	–	0.3	–	–	–	–	–	–	–	88
A. palliata	Chomes, Puntareas, Costa Rica	2005	6/–	Scan	8	1,725	–	27.7	26.0	39.8	31.5	29.0	5.1	19	8	65.7	3	4	16	89
A. palliata	Parque Nacional Palo Verde, Costa Rica	2005	6/–	Scan	38	1,725	19,804	35.7	26.0	45.0	41.5	28.0	0.2	24	9	70.8	3	6	22	89
All *A. palliata*					15.2 (4-59)	3,066.9 (1,431-4,900)	3,911.3 (1.3-46,000)	21.3 (8-40)	31.1 (0-71.8)	55.5 (23.5-98.1)	38.7 (0-81.9)	9.9 (0-33)	5.9 (0-37)	36.5 (7-95)	18.2 (4-42)	66.2 (42.9-98.8)	3.5 (1-7)	14.1 (3-32)	32 (5-75)	

Table 21.1 (*cont'd*)

Species	Study site	Year	Study length (months/hours)	Sampling method	Group size	Rainfall (mm)	Forest size (ha)	Time feeding (%)[b]	Plant items in diet (%)					No. species	No. families	%TFS[e]	>50% TFT[f]	Sources fruits	Sources leaves	Refs.[g]
									Fruits	Leaves		Flowers	OFI[d]							
										All[c]	Young									
A. pigra	El Tormento, CAM, Mexico*	2002	10/360	Focal	–	1,380	500	32.6	42.2	42.0	–	6.3	4.5	24	17	59.2	4	12	20	90
A. pigra	Cockscomb Basin Wildlife Sanctuary, Belize‡	1994	12/1,540	–	–	2,420	40,000	18	34.0	58.0	29.0	6.0	3.0	20	12	54.6	5	13	16	91
A. pigra	Tikal, Guatemala	1974	<1/84	Scan	7	1,350	56,700	22	–	–	–	–	–	7	6	96.5	1	4	7	92
A. pigra	Tikal, Guatemala	1973	3/1,147	–	–	1,350	56,700	–	–	–	–	–	–	2	1	–	1	2	1	93
A. pigra	Monkey River, Belize‡	2000-2001	8/368	Focal	–	2,500	52	17.5	38.8	56.7	25.8	4.5	–	28	21	59.2	4	7	25	94
A. pigra	Monkey River, Belize§	2002	4/149	Focal	–	2,500	52	15.3	0.0	99.7	85.3	0.3	–	15	10	83.9	2	0	15	94
A. pigra	Monkey River, Belize‡	2004	6/290	Focal	2	2,500	52	18	37.0	59.0	20.0	3.0	1.0	12	10	84.8	2	–	–	95
A. pigra	Monkey River, Belize	2004	6/290	Focal	3	2,500	52	20	22.0	70.0	27.0	7.5	0.5	11	9	81.2	3	–	–	95
A. pigra	Monkey River, Belize	2004	6/290	Focal	6	2,500	52	13	32.5	65.0	32.5	2.5	0.5	10	8	88.9	2	–	–	95
A. pigra	Monkey River, Belize	2004	6/290	Focal	4	2,500	52	15	67.0	29.0	24.0	3.5	0.5	12	9	83.6	2	–	–	95
A. pigra	Monkey River, Belize†	1999	2.5/125.7	Focal	10.7	2,500	52	16.3	68.0	30.0	–	2.0	–	21	16	64.0	4	11	15	96
A. pigra	Monkey River, Belize††	1999-2001	11/662	Focal	6.6	2,500	52	18.6	40.2	59.9	–	–	–	35	–	60.5	4	–	–	97
A. pigra	Baboon Santuary, Belize**	1999	12/–	Scan	6	1,650	1.25-75	–	–	–	–	–	–	–	–	–	–	–	–	98
A. pigra	Baboon Santuary, Belize**	1994-1995	12/1,160	Focal	5.9	1,955	25-50	24.4	40.8	45.1	37.2	10.2	3.4	74	10	42.8	7	19	20	99
A. pigra	Baboon Santuary, Belize	1995-1996	12/252	Scan	5	1,988	83	–	24.0	52.0	–	24.0	–	43	18	54.1	5	11	34	100
A. pigra	Baboon Santuary, Belize	1995-1996	12/252	Scan	7	1,988	24	–	20.0	68.0	–	11.0	–	44	–	64.3	3	17	36	100
A. pigra	Baboon Santuary, Belize	1995-1996	12/216	Scan	5	1,988	3.5	–	33.0	54.0	–	13.0	–	37	–	77.4	3	10	33	100
A. pigra	Baboon Santuary, Belize	1995-1996	12/264	Scan	5	1,988	1.25	–	34.0	57.0	–	9.0	–	51	–	65.3	4	19	39	100
A. pigra	Baboon Santuary, Belize	1995-1996	12/204	Scan	8	1,988	4.5	–	36.0	62.0	–	2.0	–	43	–	55.1	5	12	38	100
A. pigra	Baboon Santuary, Belize	1995-1996	12/216	Scan	6	1,988	121	–	63.0	33.0	–	4.0	–	32	–	85.1	1	8	24	100
A. pigra	Leona Vicario, Balancán, Mexico	2002-2003	12/499	Focal	9	1,906	0.2	19.6	17.4	55.7	49.2	5.3	21.6	15	8	65.8	4	7	13	101
A. pigra	Calakmul, CAM, Mexico†	2003	8/~201.6	Scan	6.3	1,750	147,915	–	–	–	–	–	–	10	8	96.3	1	–	–	102
A. pigra	Ejidos near Calakmul, CAM, Mexico*	2003	8/~134.4	Scan	6	1,750	12.8	–	–	–	–	–	–	16	13	80.6	3	–	–	102
A. pigra	Calakmul, CAM, Mexico	2001-2002	4/1,752	Feed.bouts	9	1,750	147,915	23	78.0	16.8	–	1.9	3.3	–	–	–	–	–	–	103
A. pigra	Calakmul, CAM, Mexico	2001-2002	4/1,752	Feed.bouts	10	1,750	147,915	23.2	62.0	20.0	–	18.0	–	–	–	–	–	–	–	103
A. pigra	Calakmul, CAM, Mexico	2001-2002	4/1,752	Feed.bouts	3	1,750	147,915	22.5	59.0	39.4	–	1.6	–	–	–	–	–	–	–	103
A. pigra	C G27 Calakmul, CAM, Mexico	2006	2/103	Focal	9	1,300	147,915	17.2	79.1	19.6	17.3	0.0	1.2	11	7	–	2	–	–	104
A. pigra	C G9 Calakmul, CAM, Mexico	2006	2/103	Focal	5	1,300	147,915	23.5	58.1	39.9	39.1	1.6	0.4	17	9	–	2	–	–	104
A. pigra	A GAA Álamo, CAM, Mexico	2005	2/103	Focal	4	1,400	96	21.6	0.0	72.8	51.3	2.4	24.7	34	21	–	3	–	–	104
A. pigra	A GR Álamo, CAM, Mexico	2005	2/103	Focal	7	1,400	96	22.1	13.1	77.0	69.3	4.5	5.4	24	13	–	4	–	–	104
A. pigra	Subestación, CAM, Mexico	2005	2/103	Focal	6	1,400	5.78	9.5	13.1	16.1	12.8	68.6	2.3	12	9	–	3	–	–	104
A. pigra	Oxcabal, CAM, Mexico	2006	2/103	Focal	5	1,400	7.99	16.3	62.5	24.7	24.2	0.9	11.9	12	8	–	2	–	–	104
A. pigra	Atascadero, CAM, Mexico	2005	1/103	Focal	4	1,400	1.14	7.2	0.0	100.0	100.0	0.0	0.0	14	9	–	3	–	–	104
A. pigra	Chilar, CAM, Mexico	2006	2/103	Focal	8	1,400	<1	10.5	41.7	37.8	28.3	19.7	0.8	4	2	–	1	–	–	104
All *A. pigra*					6.2 (2-10.7)	1,873.2 (1,300-2,500)	33,621.4 (0.2-147,915)	18.6 (7.2-32.6	38.5 (0-79.1)	50.4 (16.1-100)	39.6 (12.8-100)	8.3 (0-68.6)	5 (0-24.7)	23 (2-74)	10.6 (1-21)	71.6 (42.8-96.5)	3 (1-7)	10.1 0-19	22.4 (1-39)	
A. seniculus	Finca Merenberg, La Plata, Colombia	1976	10/340	Focal	9	1,942	270	12.7	42.3	52.0	44.5	5.4	0.1	33	17	73.1	4	12	28	105
A. seniculus	Hato El Frío, Apure, Venezuela	1975-1976	13/–	Dissection/scan	7.5	1,424	1,000	21.8	–	–	–	–	–	40	18	–	–	–	–	106
A. seniculus	Fazenda Esteio, AM, Brazil	1984-1985	5/491	Scan	8	2,900	13	22	13.5	56.0	39.0	4.0	27.0	93	30	–	–	22	93	107
A. seniculus	Río Peneya, Colombia	1971-194	–	Ad libitum	–	3,000	1,000	–	–	–	–	–	–	–	–	–	–	–	–	108
A. seniculus	Tiputini, Orellana, Ecuador	2005-2008	–	Camera traps	–	2,800	1,700,000	–	–	–	–	–	–	–	–	–	–	–	–	109
A. seniculus	Isla Iguana, Lago Guri, Venezuela	1999-2001	9/325	All ocurrence	6	1,100	0.6	–	2.0	73.0	52.0	14.0	11.0	–	–	–	–	–	–	110

Table 21.1 (*cont'd*)

Species	Study site	Year	Study length (months/hours)	Sampling method	Group size	Rainfall (mm)	Forest size (ha)	Time feeding (%)[b]	Plant items in diet (%)					No. species	No. families	%TFS[e]	>50% TFT[f]	Sources fruits	Sources leaves	Refs.[g]
									Fruits	Leaves		Flowers	OFI[d]							
										All[c]	Young									
A. seniculus	Isla Danto Machado, Lago Guri, Venezuela*	1999-2001	9/347	All ocurrence	6.5	1,100	190	–	22.0	55.0	26.0	18.0	5.0	–	–	–	–	–	–	110
A. seniculus	Tinigua, Meta, Colombia	1990-1991	13/672	Focal/scan	–	2,604	500	23	39.0	51.0	–	4.0	7.0	–	–	–	–	–	–	111
A. seniculus	Otún-Quimbaya, Colombia	2001	6/119.4	Scan	5	2,712	489	–	25.4	57.3	–	17.3	–	21	11	67.4	4	8	17	112
A. seniculus	Otún-Quimbaya, Colombia	2001	6/136.4	Scan	10	2,712	489	–	36.7	59.2	–	4.0	–	27	11	63.4	3	6	22	112
A. seniculus	Otún-Quimbaya, Colombia	2001	6/132	Scan	8	2,712	489	–	65.5	34.5	–	0.0	–	12	10	96.0	1	3	11	112
A. seniculus	Mamirauá, AM, Brazil	–	–	–	8	2,300	1,240,000	6	47.0	46.0	20.0	2.0	5.0	26	–	–	2	8	20	113
A. seniculus	A0 Yotoco, Valle del Cauca, Colombia	2004-2005	12/–	Focal	8	1,500	559	22.1	30.1	67.0	59.7	–	2.9	–	–	–	–	–	–	114
A. seniculus	A9 Yotoco, Valle del Cauca, Colombia	2004-2005	12/–	Focal	5	1,500	559	23.1	13.3	82.9	76.7	–	3.8	–	–	–	–	–	–	114
A. seniculus	Hacienda San Juan del Carare, Colombia	2008-2009	9/~475	Scan	–	3,496	65.87	7	35.1	61.4	22.8	0.8	2.5	–	–	–	–	–	–	115
A. seniculus	Estación Biológica de Cahuana, Peru[§§]	1979-1992	–/–	Ad libitum	5.5	3,000	720	–	40.0	53.0	–	6.0	–	–	–	–	–	–	–	116
All *A. seniculus*					7.2	2,300.1	184,146.5	17.2	31.7	57.6	42.6	6.9	7.1	36	16.2	75	2.8	9.8	31.8	
					(5-10)	(1,100-3,496)	(0.6-1,700,000)	(6-23.1)	(2-65.5)	(34.5-82.9)	(20-76.7)	(0-18)	(0.1-27)	(12-93)	(10-30)	(75-96)	(1-4)	(3-22)	(11-93)	
All *Alouatta*					9.9	2,211.4	30,596.4	19.7	31.4	56.7	36.2	8.4	5.6	35	16.4	65.6	3.6	14.7	27.8	
					(2-59)	(1,100-4,900)	(0.2-1,700,000)	(6-40)	(0-79.1)	(13.3-100)	(0-100)	(0-68.6)	(0-45)	(2-195)	(1-47)	(16.5-98.8)	(1-10)	(0-97)	(1-96)	

[a] Length = months, observation hours.

[b] % Time feeding = proportion of daily activity time dedicated to feeding.

[c] All = Includes mature and young leaves, leave buds, bracts, petioles, pulvini and tendrils.

[d] OFI = other food items.

[e] %TFS = percentage of feeding time dedicated to feed from top five plant species

[f] >50% TFT = number of plant species contributing >50% of total feeding time.

[g] References: 1. Bonvicino (1989); 2. Camargo et al. (2008); 3. de Souza et al. (2002); 4. Pinto (2000), Pinto and Setz (2004); 5. Pinto et al. (2003); 6. Lindenberg and Santini (1984); 7. Alves and Guix (1992); 8. Bravo and Zunino (2000); 9. Rumiz et al. (1986); 10. Rumiz et al. (1986); 11. Agostini et al. (2010); 12. Prates (2007), Prates and Bicca-Marques (2008); 13. Bicca-Marques and Calegaro-Marques (1994a, b, c); 14. Bicca-Marques et al. (2009); 15. Bravo and Sallenave (2003); 16. Pavé et al. (2009); 17. Ludwig et al. (2008); 18. Ludwig et al. (2008); 19. Rímoli et al. (2008); 20. Zunino (1986, 1989); 21. Arditi (1992); 22. Muhle (2008); 23. Guidice and Mudry (2000); 24. Agostini et al. (2010); 25. Mendes (1989); 26. Silva (1981); 27. Chiarello (1993), Chiarello (1994); 28. Galetti et al. (1994); 29. Almeida-Silva et al. (2005); 30. Aguiar et al. (2003); 31. Martins (2008, 2009); 32. Cunha (1994); 33. Biedzicki de Marques (1996); 34. Martins (1997); 35. Perez (1997); 36. Limeira (1997); 37. Gaspar (1997); 38. Steinmetz (2000, 2001); 39. Miranda et al. (2005); 40. Miranda and Passos (2004); 41. Alves and Zaú (2007); 42. Young (1983); 43. Chitolina and Sander (1981); 44. Kuhlmann (1975); 45. Koch and Bicca-Marques (2007); 46. Fialho (2000); 47. Fortes (2008); 48. Pereira (2008); 49. Guzzo (2009); 50. Lunardelli (2000); 51. Damé (2006); 52. de Thoisy and Richard-Hansen (1997); 53. Simmen and Sabatier (1996); 54. Julliot and Sabatier (1993), Julliot (1996); 55. Guillotin et al. (1994); 56. Mittermeier and van Roosmalen (1981); 57. Serio-Silva (1995); 58. Serio-Silva et al. (2002); 59. Rodríguez-Luna et al. (2003); 60. Asensio et al. (2007); 61. Carpenter (1934); 62. Milton (1980); 63. Glander (1978b, 1981); 64. Chapman (1987a, b; 1988); 65. Welker (2004); 66. Tomblin and Cranford (1994); 67. Hladik and Hladik 1969); 68. Smith (1977); 69. Devos (2000); 70. García del Valle et al. (2001), Muñoz et al. (2002); 71. B. Hervier (unpublished data *in* Cristóbal-Azkarate and Arroyo-Rodríguez 2007); 72. Shedden-González and Rodríguez-Luna (2010); 73. Bravo-Xicoténcatl (2003); 74. Jiménez-Huerta (1992); 75. García-Orduña (2002); 76. Dunn et al. (2009, 2010); 77. Estrada and Coates-Estrada (1984), Estrada et al. (1984); 78. Estrada (1984); 79. Estrada and Coates-Estrada (1986); 80. Fuentes et al. (2003); 81. González-Picazo et al. (2001); 82. Juan et al. (2000); 83. Larose (1996); 84. Snarr (2006); 85. Williams-Guillén (2003); 86. Juan et al. (1999), Ortiz-Martínez et al. (1999); 87. Stoner (1996); 88. Cuende-Fantón (2010); 89. Martínez-Esquivel (2010); 90. Barrueta (2003); 91. Silver and Marsh (2003); 92. Schlichte (1978); 93. Coelho et al. (1976); 94. Behie and Pavelka (2005); 95. Bridgett (2006); 96. Loudon (2000); 97. Pavelka and Knopff (2004); 98. Marsh and Loiselle (2003); 99. Silver et al. (1998); 100. Marsh (1999); 101. Pozo-Montuy and Serio-Silva (2006, 2007); 102. Rivera and Calmé (2006); 103. Rizzo (2004); 104. Coyohua-Fuentes (2009); 105. Gaulin and Gaulin (1982); 106. Braza et al. (1983); 107. Neves and Rylands (1991); 108. Izawa (1975); 109. Blake et al. (2010); 110. López et al. (2005); 111. Stevenson et al. (2000, 2002); 112. Giraldo et al. (2007); 113. Queiroz (1995); 114. Palma et al. (2011); 115. Aldana-Saavedra (2009); 116. Soini (1992).

[h] Averages and ranges for each species and for the genus.

* Averages for two groups; † Averages for three groups; ‡ Averages for four groups; § Averages for five groups; ** Averages for six groups; †† Averages for eight groups; ‡‡ Averages for ten groups; §§ Averages for an unspecified number of groups.