



Table to accompany the talk “**San Pedro**”
presented by **Keeper Trout** at the
Women’s Visionary Congress 28-30 July 2011

“species”	Collection number	%M	Form	Origin	Reference
			(a)	(a) = dry green parenchyma only	
			(b)	(b) = dry whole plant (aerial part)	
			(c)	(c) = fresh plant	
			(d)	(d) = extract	
<i>Trichocereus bridgesii</i> (AKA <i>Echinopsis lageniformis</i>)					
	na	0.18%	(a)	Horticulture, Gillette	Ogunbodede <i>et al.</i> 2010
	na	>0.25	(b)	Horticulture, European	Agurell 1969b
	na	0.56%	(a)	La Paz, Bolivia	Serrano 2008
f. <i>monstrose</i>	na	0.48%	(a)	Horticulture, California	Ogunbodede <i>et al.</i> 2010
<i>Trichocereus cuzcoensis</i> (AKA <i>Echinopsis cuzcoensis</i>)					
	na	0.0%	(a)	Cotaruse, Arequipa, Peru	Serrano 2008
	na	0.0%	(a)	Huaytampo, Cuzco, Peru	Serrano 2008
	na	0.0%	(a)	Huacarpay, Cuzco, Peru	Serrano 2008
	na	0.0%	(a)	Capacmarca, Cuzco, Peru	Serrano 2008
	na	0.005- 0.05%	(c)	Horticulture Germany	Agurell <i>et al.</i> 1971
				+ results were also reported in Lindgren <i>et al.</i> 1971	
<i>Trichocereus pachanoi</i> (AKA <i>Echinopsis pachanoi</i>)					
	na	0.00%	(a)	El Alisal, San Marcos, Cajamarca, Peru	Cjuno <i>et al.</i> 2009
	na	0.109- 2.375%	(b)	Horticulture Switzerland (6 specimens)	Helmlin & Brenneisen 1992
	na	5%	(a)	Cultivated Lima Botanical Garden	Cruz Sanchez 1948

***Trichocereus pachanoi* (AKA *Echinopsis pachanoi*) continued**

<i>na</i>	0.15- 0.155%	(b)	Horticulture California	Pummangura <i>et al.</i> 1982a
<i>na</i>	2.06%	(b)	Horticulture Italy	Gennaro <i>et al.</i> 1996
<i>na</i>	0.331%	(b)	Horticulture California	Crosby & McLaughlin 1973
<i>na</i>	0.9%	(d)	Drug plant from Peru	Turner & Heyman 1960
<i>na</i>	0.025%+	(c)	Horticulture European	Agurell 1969b
<i>na</i>	0.04%- 0.067%	(c)	Horticulture European	Agurell 1969a
<i>na</i>	0.067%- 0.079%	(c)	Horticulture European	Bruhn & Holmstedt 1976a
<i>na</i>	1.2%	(b)	Huancabamba, Peru witches market material from Claudine Friedberg	Poisson 1960
<i>na</i>	4.5	(a)	Witches market material, Peru	Gonzales Huerta 1960
<i>na</i>	0.78%	(b)	Chiclayo, Peru	Reyna Pinedo & Flores Garcés 2001
<i>na</i>	1.4%	(b)	Barranca, Peru	Reyna Pinedo & Flores Garcés 2001
<i>na</i>	0.23%	(a)	Moyán, San Vicente, Lambayeque, Peru	Cjuno <i>et al.</i> 2009
<i>na</i>	0.28%	(a)	Puykate, Ferreñafe, Lambayeque, Peru	Cjuno <i>et al.</i> 2009

***Trichocereus pachanoi* (AKA *Echinopsis pachanoi*) continued**

na	0.45%	(a)	Kuntur Wasi, San Pablo, Cajamarca, Peru	Cjuno <i>et al.</i> 2009
na	0.94%	(a)	Tocmoche, Chota, Cajamarca, Peru	Cjuno <i>et al.</i> 2009
na	1.14%	(a)	Laquipampa, Ferreñafe, Lambayeque, Peru	Cjuno <i>et al.</i> 2009
na	0.54%	(a)	<i>cv peruvianus</i> Huancabamba	Ogunbodede <i>et al.</i> 2010 (Note 1) shorter spines
na	1.2%	(a)	<i>cv peruvianus</i> Huancabamba	Ogunbodede <i>et al.</i> 2010 (Note 1) longer spines
na	0.00%	(a)	Cataratas, Otuzco, La Libertad, Peru	Cjuno <i>et al.</i> 2009
na	0.38%	(a)	Yanasara, Sánchez Carrión, La Libertad, Peru	Cjuno <i>et al.</i> 2009
PCH <i>et al.</i> 6212	0.82%	(a)	Clone collected Rio Marañon, La Libertad Dept., Peru	Ogunbodede <i>et al.</i> 2010
na	1.4%	(a)	<i>cv. Juuls Giant</i> (Note 2)	Ogunbodede <i>et al.</i> 2010
na	4.7%	(a)	Matucana, Peru (Note 3)	Ogunbodede <i>et al.</i> 2010

Note 1 These variants were grown by two different commercial propagators using the same seed stock that was collected by Dick Van Geest at Huancabamba, Peru during the 1960s.

Note 2 *cv. Juuls Giant* was assigned a trade name name to differentiate it from the predominate *pachanoi* cultivar also being propagated commercially by Cactus Gems (Jim Daniel). It is suspected to have originated in a UC expedition but losing its labeling during transportation back to the US a few decades ago. Daniel got it from Tom Juul, hence the name.

Note 3 The Matucana *pachanoi* was obtained from a collector providing material to Peruvian witches' markets. The plant collector has requested anonymity.

***Trichocereus pallarensis* (Name invalid. Probably f. *Echinopsis pachanoi*)**

FR 676	0.47%	(a)	Ritter seed via H. Winter	Ogunbodede <i>et al.</i> 2010
--------	-------	-----	------------------------------	-------------------------------

***Trichocereus peruvianus* (AKA *Echinopsis peruviana*)**

<i>na</i>	0.0%	(b)	Harvested in Peru	Djerassi <i>et al.</i> 1955 (Note 4)
<i>na</i>	0.0%	(b)	Horticulture European commercial	Agurell 1969b (Note 5)
<i>na</i>	0.056%	(na)	Commercial product	Health Canada 2004 (Note 6)
<i>na</i>	0.25%	(a)	Chavin de Huantar, Huari, Ancash, Peru	Cjuno <i>et al.</i> 2009
KK242	0.24%	(a)	Grown from a cutting sent by Knize in Peru.	Ogunbodede <i>et al.</i> 2010
KK 242	0.817%	(b)	Horticulture California Knize seed grown by Abbey Garden	Pardanani <i>et al.</i> 1977

Note 4 This assay was flawed for mescaline but the material was reported devoid of any alkaloid.

Note 5 Agurell found tyramine was the major alkaloid with three minor alkaloids.

Note 6 An unidentified alkaloid was the major (0.093%):10 others were present.

***Trichocereus puquiensis* (AKA *Echinopsis peruviana* var. *puquiensis*)**

<i>na</i>	0.11%	(a)	Incuyo, Parincochas, Ayacucho, Peru	Serrano 2008/ Cjuno <i>et al.</i> 2009
<i>na</i>	0.13%	(a)	Chumpi, Parincochas, Ayacucho, Peru	Serrano 2008/ Cjuno <i>et al.</i> 2009
PCH 1256a	0.13%	(a)	Clone was collected in Ayacucho Dept., Peru "across canyon from Pachan"	Ogunbodede <i>et al.</i> 2010

***T. puquiensis* (AKA *Echinopsis peruviana* var. *puquiensis*) continued**

<i>na</i>	0.28%	(a)	Chaviña, Lucanas, Ayacucho, Peru	Serrano 2008/ Cjuno <i>et al.</i> 2009
<i>na</i>	0.50%	(a)	Vado, Lucanas, Ayacucho, Peru	Serrano 2008/ Cjuno <i>et al.</i> 2009

***T. riomizquiensis* (Name invalid. Probably f. *Echinopsis pachanoi*)**

FR 856	0.4%	(a)	NMCR via Rivière de Caralt	Ogunbodede <i>et al.</i> 2010
--------	------	-----	----------------------------------	-------------------------------

***T. santaensis* (AKA *Echinopsis santaensis* Probably f. *Echinopsis pachanoi*)**

<i>na</i>	0.31%	(a)	Mancos, Yungay, Ancash, Peru	Cjuno <i>et al.</i> 2009
OST 92701	0.32%	(a)	Horticulture, California Seed from Santa Valley, Ancash Dept., Peru	Ogunbodede <i>et al.</i> 2010

***T. scopulicola* (AKA *Echinopsis scopulicola*) Probably now extinct in the wild.**

FR 991	0.85%	(a)	NMCR via Rivière de Caralt	Ogunbodede <i>et al.</i> 2010
--------	-------	-----	----------------------------------	-------------------------------

***T. schoenii* (Now lumped as synonym of *Echinopsis cuzcoensis*)**

<i>na</i>	0.22%	(a)	Cotahuasi, La Unión, Arequipa, Peru	Serrano 2008/ Cjuno <i>et al.</i> 2009
<i>na</i>	0.20%	(a)	Pampacola, Castilla, Arequipa, Peru	Serrano 2008/ Cjuno <i>et al.</i> 2009
<i>na</i>	0.14%	(a)	Huambo, Arequipa , Peru	Serrano 2008/ Cjuno <i>et al.</i> 2009

References mentioned

- Agurell, Stig 1969a *Lloydia* 32 (1): 40-45. "Identification of Alkaloid Intermediates by Gas Chromatography-Mass Spectrometry. I. Potential Mescaline Precursors in *Trichocereus* Species."
- Agurell, Stig 1969b *Lloydia* 32 (2): 206-216. "Cactaceae Alkaloids I."
- Agurell, Stig *et al.* 1971 *Lloydia* 34 (2): 206-216. "Cactaceae Alkaloids. X. Alkaloids of *Trichocereus* species and some other cacti."
- Cjuno, Mihail [sic] *et al.* 2007 *Quepo* 21: 32-38. "Estudio de *Echinopsis schoenii*."
- Cjuno, Mijail *et al.* 2009 *Quepo* 23: 38-45. "El género *Trichocereus*, Ecología y Contenido Mescalínico."
- Cruz Sánchez, Guillermo 1948 PhD Thesis; Instituto de Farmacología y Terapéutica Universidad Nacional Mayor de San Marcos, Lima, Peru. "Estudio Farmacológico de la *Opuntia cylindrica* [sic]." (pp. 10-36)
- Djerassi, Carl *et al.* 1955 *Journal of the American Chemical Society* 77 (5): 1200-1203. "Terpenoids. XI. Investigation of Nine Cactus Species. Isolation of Two New Triterpenes, Stelatogenin and Machaeric Acid."
- Gennaro, M. Carla, *et al.* 1996 *Analytical Letters* 29 (13): 2399-2409. "Determination of Mescaline in Hallucinogenic Cactaceae By Ion-Interaction HPLC."
- Gonzalez Huerta, Ines 1960 *Revista del Viernes Médico* [Lima] 11 (1): 133-137. "Identificación de la Mescalina Contendida en el *Trichocereus pachanoi* (San Pedro)."
- Health Canada 2004 was apparently unpublished gcms posted online.
- Helmlin, Hans-Jörg & Rudolf Brenneisen 1992 *Journal of Chromatography* 593: 87-94. "Determination of psychotropic phenylalkylamine derivatives in biological matrices by high-performance liquid chromatography with photodiode-array detection."
- Lindgren, Jan-Erik *et al.* 1971 *F.E.B.S. Letters* 13 (1): 21-27. "Detection of biochemical intermediates by mass fragmentography: Mescaline and tetrahydroisoquinoline precursors."
- NMCR historical data was acquired via personal communication.
- Ogunbodede, Olabode *et al.* 2010 *Journal of Ethnopharmacology* 131: 356-362. "New mescaline concentrations from 14 taxa/cultivars of *Echinopsis* spp. (Cactaceae) ("San Pedro") and their relevance to shamanic practice"

Pardanani, Jasoda H. *et al.* 1977 *Lloydia* 40 (6): 585-590. "Cactus Alkaloids. XXXVI. Mescaline and related compounds from *Trichocereus peruvianus*."

Pummangura, S. *et al.* 1982a *Journal of Natural Products* 45 (2): 224-225. "Cactus Alkaloids. LI. Lack of Mescaline Translocation in Grafted *Trichocereus*"

Poisson, Jacques 1960 *Annales Pharmaceutiques Françaises* 18: 764-765. "Présence de mescaline dans une Cactacée péruvienne."

Reyna Pinedo, Víctor & Flores Garcés, José 2001 *Quepo* 15: 28-37. "El uso del "San Pedro" (*Echinopsis pachanoi*) en medicina tradicional peruana."

Serrano, Carlos 2008 *Quepo* 22: 29-35. "Avances en la Fitogeografía Química del género *Trichocereus* en el sur del Perú."

Turner, William J. & Jack J. Heyman 1960 *Journal of Organic Chemistry* 25: 2250-2251. "The Presence of Mescaline in *Opuntia cylindrica* [sic]."

The data in this table was assembled by Keeper Trout.
Any variation in facts between this and Ogunbodede *et al.* 2010
most likely reflects a correction or inclusion of additional data.
Please bring any errors to my attention.



This document is copyright free.

For more information & images visit:

www.troutsnotes.com
&
www.largelyaccurateinformationmedia.com

Contact us at
pachanot@gmail.com