

Pepitilla in Jala Maize

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In what may have been the early 1800s (Anderson, *Annals Missouri Bot Garden* 33 (2):147-247, 1946, p. 160), there is evidence that Pepitilla shortened Jala's cob (Kempton, Weatherwax files, Indiana University, courtesy N. Robinson, 1950), widened it, beaked the kernels (pointing of the kernel crowns is a feature exclusive to the maize race Pepitilla, teosinte, etc; Kempton, *J Agric Res* 28 (11):1098, 1924 a, and *J Agric Res* 32 (1):39, 1926), and reduced the stalk's scarcely rivaled internode length (Tabloncillo, Jala's parent race, has long internodes; Wellhausen, *Races of Maize in Mexico*, Bussey Institute of Harvard University, Cambridge, MA, 1952), reducing the plant height (Kempton, via Weatherwax files). However, the aboriginal phenotype (plants with a long, narrow cob, unbeaked kernels, long internodes) significantly remained (cf. E. Rice, Ph.D. dissertation, Cornell University, Ithaca, NY, 2004). Thus today there are two phenotypes within extant Jala pools. The aboriginal phenotype is called Humédo (pronounced ew may doe; Kempton 1924 b) while Pepitilla features are "Chino" (pronounced chee no; Anderson 1946; Rice 2004). Pepitilla made Chino in many races (Anderson 1946). Effectively, Chino means strikingly different while somewhat undilutable (cf. Anderson 1946). Humedo maize (germinates on but condensation; includes Chino) is a distinction from Aguas (Rice 2004) maize (planted when the annual rains begin; this means that there are two plantings, likely two varieties, or more). In regard to row quantity, Chino ranges (Rice 2004) into the high-end extreme of Kempton's data, the 16-row representative seen today, although that representative may be more common today because of the second amplification by high-rowed Tampiqueno.

References:

Anderson 1946. *Annals Missouri Bot Garden* 33 (2):147-247

Kempton 1924 a. *J Agric Res* 28 (11):1098

1924 b. *J Hered* 15 (8):337-344

1926. *J Agric Res* 32 (1):39

Kempton 1950. Weatherwax files, Indiana University,
courtesy N. Robinson

Rice 2004. Ph.D. dissertation, Cornell University, Ithaca, NY

Wellhausen 1952. *Races of Maize in Mexico*,

Bussey Institute of Harvard University, Cambridge, MA

The table is derived from the following sources:

Brown, Annals of the Missouri Botanical Garden 35 (3):255-268, 1948
 Duncan and Hesketh, Crop Sci 8 (6):671, 1968
 E. Rice, Ph.D. thesis, Cornell University 2004
 Kempton, J Hered 15 (8):337-344, 1924
 Kempton, J Agric Res 28 (11):1095-1103, 1924 and 32 (1):39-50, 1926
 Kempton, Weatherwax files, Indiana University, 1950, courtesy N. Robinson
 Listman, Diversity 8 (1):14-15, 1992
 Office of Plant Introductions from Mexico, 1918 #147,
 United States Department of Agriculture National Agricultural Library
 call # 1 P6915, generosity of W. Olson
 Wellhausen, Races of Maize in Mexico, Bussey Institute of Harvard University,
 Cambridge, MA, 1952

Criterion	Chapingo Pepitilla	Chula Vista Old Jala (Kempton/Post-Pepitilla)	Chapingo New Jala (post-1930) Post-Tampiqueno
Year	ca. 1945	ca. 1920	ca. 1945
Plant Height - In Situ	"more than that of any other corn" 1918 (11-hr long night)	20' (11-hr LN)	15' (11-hr LN)
Plant Height - Ex Situ	10.2' (11-hr night)(LN)	(10-hr) 17.3' (SN begins) * same as maryland	11.6' (11-hr) (LN)
Leaf Quantity	14.9	27.5	14.4
Quantity of Leaves above Ear	5.1	6	5
Central Spike	10.6"	14.0"	11.2"
Tassel Branch Space	4.6"	8.7"	4.4"
Tassel Branch Quantity	21.8	30.6	17.9
Cob Length - In Situ - Maximum		24"	15" (natural) (18" deliberate; 27-year)
Cob Length - In Situ		20"	
Cob Length - Ex Situ - Maximum		15"	
Cob Length - Ex Situ	4.8"	10.3"	12"
Kernel Rows	15.5(16-36) "Pepitilla is one of the most distinctive Mexican races because of ... its very high row number."	12.7	14.7
Days to Pollen	122	108.5-sic-118.5	134
Weight of One Kernel	.24 g	.56 g (.8 on in-situ 12-row cob)	.51 g

Jala's critical daylength is between 12-3/4 and 13-1/4 hours, 11-1/4 and 10-3/4 nightlength.