

DIVERSITY

A News Journal for the International Plant Genetic Resources Community

Vol. 8, No. 1, 1992

Bush Announces
Asia-U.S. Partnership
on Biodiversity

New PGR Programs
Emerge for
Europe. IBPGR

Monsanto and USAID
Collaborate on African
Biotechnology Project

AAAS Features
Paul Ehrlich on
Ag Research Needs

PGR Lobbying
Heats Up for
Earth Summit

FAO Launches
Animal Germplasm
Conservation Effort

Debate Continues on
Crop Networks Concept

USSR Potato Collection

A Biodiversity Policy
for the United States?

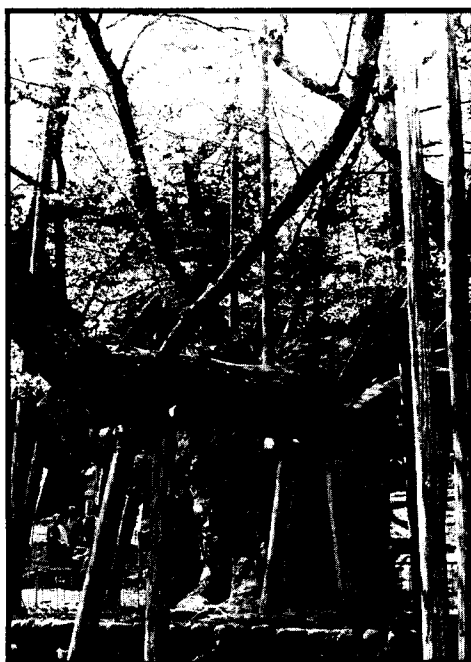
SPECIAL REPORT:
*Global Biodiversity
Strategy*

Interest Builds
on New Crops Research

PROFILE:
W-6 Plant Introduction at
Pullman, Washington

VIEWPOINTS:
The Environmentalization
of PGR:
Risks and Benefits

IN REVIEW:
*Cornucopia: A Source
Book of Edible Plants*



CIMMYT
RECIPIENT
JUL. 7 1992
SIU - LIBRARY



620082

Mexican Prize for the Giant Maize of Jala Source of Community Pride and Genetic Resources Conservation

by G. Michael Listman and Felipe Pineda Estrada

On the day of the contest, farmers come from fields scattered throughout the valley of Jala, Nayarit, in west-central Mexico. They arrive on foot, on horseback, by mule; some even take taxis that drive the rugged rock-and-pothole roads to the valley's farthest corners. All, though, are carrying bundles of colossal, green ears of maize and have a single intent in mind: winning the 500,000 peso prize for the largest maize ear.

While they may not realize it, these contestants and the event they take part in are promoting genetic resources conservation. The maize ears in question can reach 45 cm (18 in) in length and are of the gigantic *Jala* landrace, a legendary plant that typically grows to more than four meters and was reportedly harvested on horseback by the valley's past generations. Sharing the fate of many native Mexican maize races, *Jala* is rapidly being replaced by hybrids and improved varieties that are both more productive and better suited to changing local uses. Unlike many others, though, the *Jala* landrace could well be grown in its native habitat for some time to come, thanks to its unique role in the annual *Feria del Elote*, or Green Maize Fair of Jala village.

Fair Preserves Jala Maize and Culture

Maíz de humedo, as valley inhabitants refer to it, is planted in April, some two-and-a-half months before other maize in the area. Thus the emergence in August of green ears on the landrace coincides with yearly festivities in honor of the town's patroness, La Virgen de la Asunción. Jala mayor, Carlos Carrillo Santana, decided in 1981 to build on the religious celebration and create a regional fair, in hopes of stemming the disappearance of *maíz de humedo* and of traditional culture in general. "We promote the preservation of *Jala* maize," says Jala Mayor Carrillo, "as well as cultural activities, such as folk dancing and art exhibits, that bring the community together."



Green ears for the Jala maize contest are registered at the police station.

(Photo courtesy of G.M. Listman)

For a variety of reasons, the contest for the largest ear is one of the main events of the fair. Sponsored jointly by the Mexican Secretary of Agriculture and Water Resources (SARH) and the municipal government of Jala, the competition draws dozens of participants, nearly a thousand spectators, and media coverage that includes regional newspapers and national TV. This notoriety is part of the event's appeal to farmers, who are proud to show off a local product for which they feel largely responsible. Another undeniable incentive to compete is the prize: first place is awarded the peso equivalent of about US\$170 and two runners-up receive proportionate amounts, a respectable purse considering that the daily wage for field laborers in the area is about US\$4. Finally, one senses that Jala farmers, as those everywhere, take a certain pleasure in producing a bigger and better crop than the individual "the next field over."

Contest Motivated Farmer Conservation

Thus, although *maíz de humedo* still turns up in households and local markets as an ingredient for *pozole* (a sort of maize-and-pork stew) and tortillas, or as the popular steamed ears peddled at small stands throughout the village beginning in August, the contest is clearly a prime motivation for many in the valley to continue planting small stands of the giant maize, when they might otherwise sow only im-

proved varieties or cash crops.

"I grow *maíz de humedo* mainly for the contest, although I also like its grain for *pozole*," said Jesus Grande Ventura, first-place winner from 1985 to 1989. Like most of his counterparts in the valley, Señor Grande sows the greater part of his maize

"We promote the preservation of Jala maize as well as cultural activities that bring the community together," says Mayor Carrillo.

land to *Tampiqueño*, a popular Mexican landrace that was introduced long ago in the region, and increasingly to hybrid x *Tampiqueño* crosses. He and fellow farmers purchase commercial seed every few seasons and allow the plants to cross with maize already in the field, a home-grown breeding strategy that delivers many of the benefits of hybrids at a much lower cost than buying hybrid seed each year.

Those benefits include higher yields, earlier maturity, denser kernels—worth more per bushel and less vulnerable to storage pests than the grain of *maíz de humedo*—and an enhanced ability to stand up under heavy wind and rain where the landrace tends to fall over, according to local farmers.

Demand for Tamale Husks Leads to Replacing *Maíz de Humedo*

But SARH extension worker, Isidro Montalvo Cobos, cites an additional factor that has accelerated the replacement of *maíz de humedo*: the lively demand in Mexico and the USA for husks to wrap tamales. "There are 18 husk processing and packaging plants in Jala," explained *ingeniero* Montalvo. Whereas the landrace yields a little over a ton of husks per hectare, some new hybrids can give twice that much, according to the extensionist. He said that the USA's expanding Latino populace furnishes a lucrative market for the dried coverings, and their value often exceeds that of maize grain. "In good fields," *ingeniero* Montalvo said, "crews from the packaging plants will actually pay you to harvest your crop, leaving you the grain and taking the husks."

This agrobusiness is part of a general agricultural upswing that, together with improved basic education, promises to transform the relatively isolated area.

CIMMYT LIBRARY

G. Michael Listman and Felipe Pineda Estrada are science writer/editor and research assistant, respectively, in the Maize Program of the International Maize and Wheat Improvement Center (CIMMYT), Mexico.

38935

Señor Grande believes future generations of Jala will abandon farming and leave the valley to seek their fortunes elsewhere. "When we were young, we didn't have time to study, we had to work the fields," he said, motioning to his farmland. "Now these (farmhouses) are just dormitories. As soon as our children have wings, they fly away, and there is no holding them down."

Giant Size Unique to Jala Due to Genetics and Volcanic Soil

If the children of Jala bear out Señor Grande's prediction, they will succeed where the landrace has failed: beyond the valley, *maíz de humedo* simply refuses to develop to its normal dimensions, and repeated attempts to introduce it elsewhere have met with frustration. When asked about this, many Jala residents say that minerals from the nearby volcano, El Ceborro, which last erupted in 1870, are what makes their maize grow so large. Researchers, on the other hand, believe the landrace's size is part of its genetic endowment, but also recognize that the plant interacts remarkably well with its native environment.

"Jala Valley lies 1,000 meters above sea level and has fertile, volcanic soils, ample moisture, and an annual mean temperature of 20-22°C—ideal conditions for the long season, high moisture requirements of *maíz de humedo*," said Dr. Suketoshi Taba of the International Maize and Wheat Improvement Center (CIMMYT), a nonprofit research and training organization headquartered in Mexico and serving the agricultural research programs of over 100 developing countries. Dr. Taba, head of the CIMMYT maize germplasm bank, recently visited Jala to explore the status of the landrace, discuss conservation approaches with farmers, politicians, and regional extension workers, and attend the maize ear contest.

"*Maíz de humedo* is in the same category as traditional practices, music, and handicrafts," said Dr. Taba. "It is an achievement of folk culture."

CIMMYT Conserves *Maíz de Humedo* Germplasm

CIMMYT, one of the 16 international agricultural research centers of the Consultative Group on International Agricultural Research (CGIAR), maintains collections of thousands of Latin American and Caribbean maize landraces, including *maíz de humedo*, for use by breeders worldwide. With funding from the U.S. Agency for International Development (USAID) and

the U.S. Department of Agriculture (USDA) through the National Seed Storage Laboratory, Fort Collins, Colorado, the Center is collaborating with maize genebanks throughout Latin America to regenerate and protect important endangered collections housed in those banks. Finally, as a complement to its leading role in the *ex situ* preservation of maize genetic resources, CIMMYT works with programs in developing countries to monitor maize landraces and wild relatives in their native habitats. The Center thus helps to keep colleagues and decisionmakers apprised of the status of such maize genetic resources, so that appropriate measures may be taken if they become imperiled. Beyond this, however, genotype-community relationships such as Jala's are of great interest to the Center.

"We feel that we can learn something from observing how people preserve, use, modify, and promote native maize races which form part of their cultural heritage," explained Dr. Taba. "These plants are often more than just a food staple."

The special role of *maíz de humedo* was readily apparent during preparations for the maize ear contest. As participants began to arrive at the town square in the late afternoon, their bundles of green ears were registered and stacked near a rifle rack in the police station adjoining the square. The length of some ears was two-thirds that of shotguns in the rack. After dropping off their entries, the farmers stood outside and chatted in small groups. A frequent topic was the tardiness of this cycle's rains, which had seriously affected the growth of the landrace.

"It's been a bad season," remarked contestant José Elías Partida, a farmer of nearby Coapan village. "There won't be many big ears."



Steaming green ears on a Jala street corner.
(Photo courtesy of G.M. Listman)

"There Is Always Next Year"

As night fell on the square, an outdoor stage with a loudspeaker system was set up in a corner opposite the Ferris wheel. Spectators gathered, contestants and judges took their places, and photojournalists jostled for position. Around 8 p.m. Mayor Carrillo cleared his throat in the microphone and announced the start of the contest. For the next two hours, participating farmers were called to the stage amid photo flashes that occasionally resembled a fireworks display. *Ingeniero* Montalvo measured the length of each entry from first to last grain with a metal ruler and counted the number of rows of kernels (in case of a tie, the ear with more rows would win). As data were tallied, a local poet declaimed a lengthy ode to maize.

These contestants and the event they take part in are promoting genetic resources conservation.

Finally the dramatic moment arrived and Sr. Isabel Rafael Moncada of Jala, Nayarit, was declared the winner. Moncada, who grows approximately one hectare of the landrace, proudly held up his entry of 33 cm and 16 rows and received the prize from the queen of the fair, handshakes from judges and the mayor, and applause from the crowd. Many farmers in the audience shook their heads in disappointment—not at losing, but because the ears were uncharacteristically small this time.

The congratulations for winners, complaints by some losers about contest management, and the oft spoken consolation of "there is always next year" gradually receded into the night air as the assemblage dispersed. The varied and earnest commentary was evidence of the widespread interest that the contest arouses and an assurance that, for now, *maíz de humedo* will continue to raise its towering presence over the valley's fields.

For additional information, contact: Dr. Suketoshi Taba, Head, Maize Germplasm Bank, CIMMYT, Apdo. Postal 6-641, Mexico 06600, D.F. Mexico. Tel: (52-5) 761-3311. FAX: (52-595) 41069. ☎

Further Reading

Kempton, J.H. 1924. Jala maize: A giant variety from Mexico. *Journal of Heredity* 14-15:337-344.
Wellhausen, E.J., L.M. Roberts, and E. Hernandez X., in collaboration with P.C. Mangelsdorf. 1952. *Races of maize in Mexico: Their origin, characteristics and distribution*. Cambridge: Harvard University.