

Thème 2 –Enjeux planétaires contemporains

2-B- La plante domestiquée

Small Farmers in Mexico Keep Corn's Genetic Diversity Alive
“Campesinos” are driving the evolution of maize in North America

After presenting the document and its content, discuss the use of this method of selection by comparing it to other current methods or technologies you know.



Mexico's 59 native maize varieties

Edilberto “Beto” García Cuenca started farming the land when he was just a kid. The descendant of a long lineage of “campesinos”—a Spanish term for family farmer—he still grows maize in the small, five-acre plot his mom left him in their hometown of Santa María Zacatepec in the Mexican state of Puebla. He relies on rain to irrigate his crops.

5 During the rainy season, García Cuenca selects the seeds he stored the previous cycle, plants them and cares for the seedlings. Multiply that process by the millions of other campesinos in Mexico and you get billions of genetically different maize plants—each exposed to a wide diversity of environments and subjected to unique selection practices.

10 This evolutionary experiment has been going on for thousands of years. And the efforts of small-scale farmers generate the bulk of corn's genetic diversity in North America. In the face of more aggressive weather threats researchers say the finding comes at a critical time.

15 Commercial corn farmers in Mexico planted around 3.2 million acres during the rainy season; the rest—more than 11.5 million acres—was planted by campesinos. In 2010 alone family farmers in Mexico grew approximately 138 billion genetically different maize plants. The domestication of native maize across a wide range of temperatures, altitudes and slopes has allowed rare mutations to take hold that would otherwise disappear. Bellon (a social scientist) notes: “Campesinos are generating an evolutionary service that is essential for them, for the country and, given the global importance of maize, for the world,” he says.

20 This type of farming, fueled by traditional practices such as saving or sharing seeds from one season to the next, has resulted in Mexico's 59 native maize varieties. This diversity is rarely seen in the U.S.—the world's largest producer of corn. “You go to a farm in Iowa and there may be three million plants, but they're all genetically identical,” says J. Ross-Ibarra, a plant geneticist. Because American farmers buy their seeds instead of cultivating their own, “there's no chance for evolution to do its thing,” he adds.

25 *Adapted from:*

<https://www.scientificamerican.com/article/small-farmers-in-mexico-keep-corns-genetic-diversity-alive>