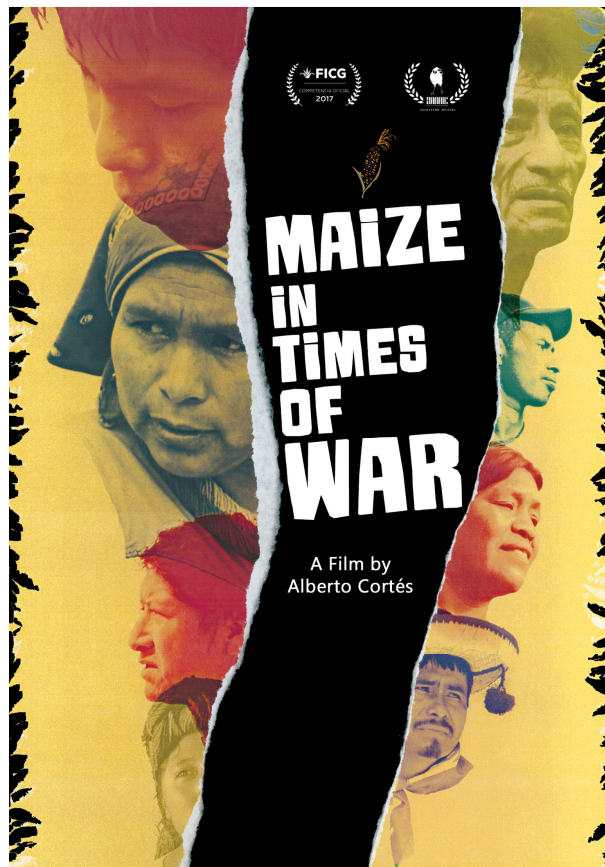




MAIZE IN TIMES OF WAR (EL MAÍZ EN TIEMPOS DE GUERRA)



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Maize in Times of War (El maíz en tiempos de guerra)

Indigenous People in Mexico

This film focuses on four indigenous families living in different parts of Mexico. Two Tzeltal families live in Chiapas, a state in the south of the country. Chiapas borders the states of Tabasco, Oaxaca, and Veracruz, and the country of Guatemala. Much of Chiapas is covered in forest, including rain forest. It is believed to be the poorest state in Mexico, with a poverty rate around 75 percent. The Tzeltal people who live in Chiapas are of Mayan Indian descent. Another family in the film is Wixáři (also called Huichol), and lives in Jalisco, a state in west-central Mexico. Jalisco borders Nayarit, Zacatecas, Aguascalientes, San Luis Potosí, Guanajuato, Michoacán, and Colima. The Wixárika people are descended from the Aztec. The final family is an Ayuuk (Mixe) family living in Oaxaca. Oaxaca is in southern Mexico, and like Chiapas, has a high poverty rate. It borders the states of Puebla, Veracruz, Chiapas, and Guerrero. Much of the state of Oaxaca is mountainous.

All of these families are indigenous. Overall, Mexico's population includes a large number of different indigenous groups. According to the International Work Group for Indigenous Affairs, about 15 percent of the country's total population is comprised of indigenous peoples. These people have long been subject to discrimination and marginalization, including the loss of their lands. In recent years, however, many indigenous groups have organized and fought to regain their autonomy and their ancestral lands. The Zapatista National Liberation Army (EZLN) in Chiapas is one revolutionary group that has fought for land reform and other rights for indigenous people.

Many indigenous people own their land and make decisions communally. In the communal system, comuneros, or members of the indigenous community meet in an asamblea, or assembly, in order to come to a consensus on issues that need to be addressed. Mexico's constitution gives indigenous people the right to self-determination, which includes the right to govern themselves in this way. However, according to the Office of the United Nations High Commissioner for Human Rights, because every state has its own laws, not all indigenous communities are actually able to exercise this right.

The Milpa

The families in the film follow a traditional agricultural system called milpa, which has been used by indigenous people in Mexico for many years. Milpa is sometimes translated as "cultivated field." Farmers start by clearing and burning the area that they intend to cultivate. The ashes are mixed into the soil, and act as a fertilizer. In the milpa system, farmers use the same field for a number of years, then leave it fallow for a longer period of time, while they move on to clear a new field. During the fallow time, the soil slowly regains fertility and ultimately becomes ready to cultivate again.

Unlike some agricultural systems, where farmers plant only one type of crop in a field, the milpa contains a variety of plants such as maize, beans, pumpkin, and tomato. By growing these different plants together, farmers are able to take advantage of the many ways that the plants complement each other. For example, beans put nitrogen into the soil, which the maize needs in order to grow well. The maize benefits the beans by providing a structure for them to climb. Maize and beans are also complementary in terms of nutrition; when eaten together, they provide the body with the amino acids it needs to make proteins.

About Maize

Maize is believed to have originated in Mexico, and it is one of the country's most important crops. Scientists believe that maize began as a wild grass called teosinte, which had small ears and a only a small number of kernels. Time and selective breeding led to the development of larger ears, with more kernels. Many different varieties of maize were also created over time. According to Crop Trust, an organization that works to preserve crop diversity around the world, maize thrives in a variety of conditions and is now the world's most widely grown crop. In Mexico, it is estimated that there are more than 59 different landraces, or varieties, of maize grown. However, Crop Trust notes that this number is much smaller than it was in the past. It says that since the 1930s, Mexico has actually lost 80 percent of its maize varieties.

The different varieties of maize grown today are used to create a variety of different traditional foods. In a working paper by the Global Development and Environment Institute, the authors explain that many different regional foods in Mexico can only be made with specific landraces of maize. They state, "There are strict correlations among native maize landraces and food preparations, e.g., the special tortilla called 'Tlayuda' of the Oaxacan cuisine can only be prepared with the 'Bolita' race; the 'totopo oaxaqueño' is only prepared with the 'Zapalote chico' native landrace." This is one reason that native landraces are so important to Mexico's people.



Transgenic Maize

Transgenic—or genetically-modified—maize is a very controversial subject in Mexico. The world's first genetically modified maize was introduced in 1996, in the United States. Bt corn was engineered with genes from a common bacteria called *Bacillus thuringiensis*, or Bt. The genes made the plant much more resistant to some common pests, such as the European corn borer, that can devastate maize fields. Advocates of this genetically modified variety of maize praised the new technology, insisting that it would greatly reduce the percentage of crops wasted to pests, and would also reduce the amount of pesticides needed. Since then, scientists have developed a number of other genetically modified strains of maize, for example maize with resistance to herbicides. The United States has been quick to adopt all genetically modified crops, including maize. For example, in 2018, 82 percent of U.S. corn acreage was comprised of Bt corn.

Mexico has been more cautious about genetically modified maize. While it imports genetically modified products for consumption, it does not allow them to be grown. The planting of genetically modified crops in Mexico was banned in 1998. From 2009 to 2013, the government did allow some planting for research. However, a 2013 court ruling stopped these pilot plantings. The ruling was upheld in 2017. Researchers report that Mexico's farmers have even been resistant to high-yield hybrid maize seeds, and that adoption of these seeds has never been greater than 30 percent of maize plantings, even with government incentives.

The Future

Debate continues over whether or not genetically modified maize should be grown in Mexico. While maize is a staple part of the diet of most people there, the country is not producing enough to meet its needs. It is estimated to import about a third of its maize. Proponents of genetically modified maize argue that new varieties will be more productive and help reduce Mexico's maize deficit. However, many people are afraid that genetically modified maize will contaminate native landraces. In fact, even importing maize for consumption has resulted in some contamination. In 2001, researchers found material from genetically modified maize in native maize plants. The use of genetically modified seeds would also alter current farming process. At present, farmers select and save seeds from their crops in order to plant the next year. However, genetically modified seeds are patented by their developers, and farmers have to pay to use them. When they do purchase these seeds, they are not allowed to save and replant seeds for the next year. Discussions about genetic modification and anything related to maize in Mexico are extremely contentious because of the importance of this crop. Throughout Mexico's long history, maize has always been a vital part of its people's diet and culture. It is not just something they eat, but a central part of their identity.

Glossary

- **agrarian:** An agrarian way of life is focused on cultivating farmland.
- **Chilón:** A town and a municipality in Chiapas, Mexico.
- **comuneros:** Members of indigenous communities.
- **ejido:** An ejido is a piece of land that is communally farmed.
- **jilote:** An immature ear of maize.
- **mestizo:** A person of both American Indian and European ancestry.
- **metate:** A stone tool used for grinding maize and other materials.
- **milpa:** Sometimes translated as “cultivated field,” a milpa is a traditional agricultural system used by Mexico’s indigenous people. A milpa contains multiple crops growing together, such as maize, beans, pumpkin, and tomato.
- **pozol:** A drink made from fermented corn dough.
- **transgenic maize:** Also called genetically modified maize, this plant contains genes that have been genetically altered, for example to have greater resistance to pests.
- **yoke:** A piece of wood that is fitted to an animal or a pair of animals, allowing them to pull a load such as a plow.
- **Zapatistas:** The Zapatista Army of National Liberation is a nonviolent militant group in Mexico’s state of Chiapas. It fights for the rights of indigenous people



Additional Resources

Books

- Michael Blake (2015). *Maize for the Gods: Unearthing the 9,000-Year History of Corn*. Oakland, CA: University of California Press.
- Abby J. Kinchy (2012). *Seeds, Science, and Struggle: The Global Politics of Transgenic Crops*. Cambridge, MA: The MIT Press.
- Gabriela Mendez Cota (2016). *Disrupting Maize: Food, Biotechnology, and Nationalism in Contemporary Mexico*. New York: Rowman & Littlefield International.
- John E. Staller, Robert H. Tykot, Bruce F. Benz, eds. (2010). *Histories of Maize in Mesoamerica: Multidisciplinary Approaches*. Walnut Creek, CA: Left Coast Press.

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- Antonio Turrent Fernández, Timothy A. Wise, and Elise Garvey (October 2012). "Achieving Mexico's Maize Potential. Global Development and Environment Institute Working Paper No. 12-03." <https://ase.tufts.edu/gdae/Pubs/Wp/12-03TurrentMexMaize.pdf>
- Luis A. Ventura-Martínez (October 12, 2017). "Mexican Legacy: 'La Milpa,' the Birthplace of Maize." <https://allianceforscience.cornell.edu/blog/2017/10/a-mexican-legacy-la-milpa-the-birthplace-of-maize/>

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