

EXPLORATION, COLLECTING AND DESCRIPTION OF *IN SITU* AGRODIVERSITY OF CHILI (*CAPSICUM ANNUUM* AND *C. CHINENSE*) IN A MEXICAN COMMUNITY

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INTRODUCTION

México is well known as a diversity center and origin of *Capsicum annuum*. Mexican people are closely related to chili culture through their culinary tradition, which has remained since Pre-colombian times. At the Yucatan Península, there is a high diversity of chili landraces from the species *C. annuum* and *C. chinense* linked to traditional dishes based on chili. Chili variability at Yucatan is little known as well as the manners in that farmers distinguish, maintain, and manage it. The objective of present study was to make an exploration and collecting information on traits used by farmer to describe their local varieties of chili preserved on-farm at the community of Yaxcaba, Yucatan, Mexico.

MATERIALS AND METHODS

Yaxcaba, Yucatan, Mexico is a community characterized by a traditional agriculture system under slash-and-burn, locally known as “milpa”. The traditional farming system of Yaxcaba is located in the northeast of Yucatan. It is considered as important zone for on-farm conservation of races of maize such as Nat-tel and Dzit bacal, squash species as *Cucurbita argyrosperma* and *Cucurbita moschata*, common bean and chili (*C. annuum* and *C. chinense*) that constitutes farming milpa system. At 62 households, information was gathered on name and number of varieties cultivated, places where are growing (farmer plot, home garden, pot or into orchard), morphological criteria used to distinguish each variety, and human use (cooking, special dishes or medicinal use). Survey was run in Spanish and Maya from July to December, 1999. In addition, a morphological description per landraces of characteristics of plant, flowers, and fruits was made.

RESULTS

Farmers from Yaxcaba named and described eight different phenotypes (morphotypes) of local varieties classified within *Capsicum annuum* and *Capsicum chinense*. For example, habanero is *C. chinense* and the others belong a *C. annuum*, locally known as dulce, xcat'ic, ya'ax ic, cha'huá, pico paloma and maax. The last morphotype mentioned, maax

was classified as *C. annuum* var. *aviculare*, which is also known as piquin, chiltepin, or tilchile in other regions of Mexico.

The ya'ax ic variety is being cultivated by 38% of the farmer, followed by habanero (17%). The less frequent was pico paloma which is sown by 1% of farmers. Pico paloma seems to be a recent introduction and is relatively little known by the farmers of this region (Figure 1).

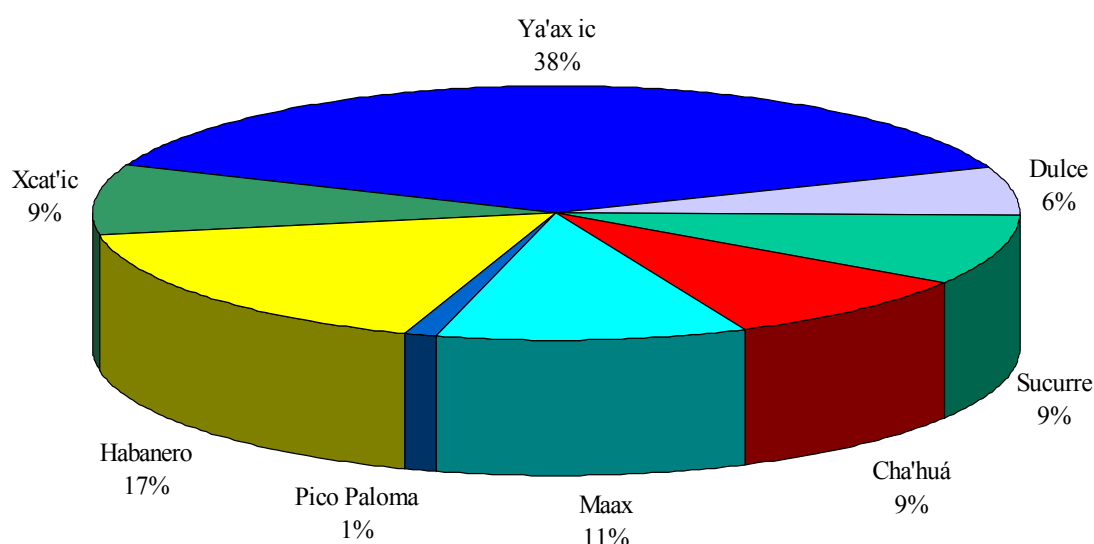


Figure 1. Chili morphotypes according to farmers proportion who sown it.

It was found that both, female and males, sown and care their chili pepper landraces that continue to grow in different places, such as the milpa (farmer plot or field), home garden, and pot (Table 1). These systems maintain plant genetic resources in the traditional region of Yaxcaba. Ya'ax ic, cha'huá and maax landraces are often planted in the milpa while the other ones are commonly planted in the home garden and pot.

Table 1. Chili morphotypes and different places where are found under crops on base to farmer proportion.

Morphotypes	Milpa %	Home garden %	Land with irrigation %	Pot %
Habanero	1.0	3.9	4.9	6.9
Ya'ax ic	30.14	5.9	1.0	2.0
Xcat'ic	-	1.0	4.9	2.9
Maax	7.8	1.0	1.0	1.0
Dulce	-	2.0	2.0	2.0
Cha'huá	8.8	-	-	-
Pico Paloma	1.0	-	-	-
Sucurre	1.0	2.0	2.9	2.9
Total	50.0	15.7	16.7	17.6

In this region, it was found that landraces cultivated (habanero, ya'ax ic, and cha'huá) and their wild relative maax, are growing together in nearby fields. So, in the homegarden this pattern was found in a regular way. High morphological variability in size, shape and color of the fruits was present among and within the eight landraces, regularly planted in same production space, which is exploited by farmers.

The farmers use different criteria to identify their local varieties and wild relatives. Some of them are: size, weight, shape, color and pungency of fruit as well as performance agronomic traits (Table 2). Habanero is distinguished by the highest pungency of fruit and aroma. Local varieties are normally defined by farmers in terms of their agromorphological characteristics (Louette and Smale, 1996 and Louette, 2000). The proposal in the IPGRI global project is to first ask farmers to list the agro-morphological characteristics used to distinguish a crop variety and then to prioritize the characteristics farmers select each year (Jarvis, 2000).

Table 2. Farmers' criteria for distinguishing local variety of chili.

Traits name	Habanero	Xcat'ic	Ya'ax ic	Dulc e	Sucurre	Cha'huá	Maax	Pico Paloma
Fruit size	-	√	√	√	√	√	√	√
Fruit color	√	√	√	√	√	-	-	-
Fruit shape	-	√	√	-	-	-	-	-
Pungency	√	√	√	-	√	√	√	√
Aroma	√	-	-	-	-	-	√	-
Fruit taste	√	√	-	√	-	-	-	-
Pests	-	-	√	-	-	-	-	-
Drying	-	-	√	-	-	√	√	-
Medicinal	-	-	-	-	√	-	-	-

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