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The Domestic Turkey (*Meleagris Gallopavo*) In Mexico

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Abstract

The turkey, *Meleagris gallopavo*, is native to America. This species of bird is found all over Mexican national territory. The different climates in Mexico and the method of domestication are the main factors that have caused variability in the genotypes and plumage colors of these turkeys. In some rural areas, turkey raising is typically done by housewives, who use food waste or mixed feed blend with nixtamalized corn; in daytime, turkeys are released into the backyard where they eat herbs or insects. Unfortunately, the breeding of these birds has been drastically reduced, due to the loss of Mexican traditions.

Keywords: Birds; Mexican Traditions; Turkey

Introduction

There are three groups within the Mexican turkey's species: the population relict (C1), merriami (C2), and

mexicana/ intermedia/ silvestris/ osceola (C3), the latter group shares haplotypes with domesticated turkeys (Padilla-Jacobo G., et al., 2018).

Environmental factors can affect the behavior of turkeys; therefore, it is important to consider the density, group size, space availability, maturation, lighting, feeding and transportation, in order to reduce economic losses (Marchewka J. et al., 2013). To be effective in turkey rearing, the physical, morphological and mechanical characteristics of the female's eggs must also be considered, since the development of the embryo and hatching will depend on these characteristics (Galic A., et al., 2018). In general, good handling and care of turkeys should be done, as gastrointestinal parasites are very common (Aniefiok-Udoh A., et al., 2014).

The wild ancestor of the domestic turkey is the Mexican species *Meleagris gallopavo*. At the beginning of the XVII century, these turkeys were taken from Mexico to Europe and later to Eastern North America, where they were hybridized

with Eastern turkeys (*Meleagris gallopavo silvestris*), generating a new variety, and currently marketed (Crawford RD, 1992). The *Meleagris gallopavo* is a poultry that contributes to the production of meat worldwide (Aslam M.L., et al. 2012).

A. Origins of the Turkey

Exists evidence that confirms that this bird is native to America. The Mayas and Aztecs were the first to domesticate it, later it was adopted by other pre-Hispanic cultures. Some synonyms of the word turkey in Mexico are: Huexolotl, Jolote, Chompipe, Cocono, Pipila, Pavo, Totol and úulum, among others. The domestic creole Turkey comes from *Meleagris gallopavo* (Gallardo-Nieto J. et al., 2007). Nowadays the turkey is distributed throughout the National territory.

B. Genotypic Characteristics

Meleagris gallopavo is a species of bird that has been bred for many years in Mexico. The genotypic characteristics of this species can change due to the diversity of climates and to the different methods in small scale production (Cigarroa-Vásquez F. et al., 2013; Angel-Hernández A. et al., 2014).

C. Phenotypic Characteristics

The color of the skin and tarsus, as well as the color and pattern of the plumage, are not very diverse, however, the influence of the conditions of their raise could cause some morphotypes to be lost (Zamora-Martínez G. et al., 2019).

D. Domestication

In Mexico the raising of the turkey is common in rural and peri-urban areas. However this activity has been reduced due to the loss of Mexican traditions, where it is commonly consumed (Zamora-Martínez G. et al., 2019).

E. Management of the Guajolote In Michoacan

In a study carried out in five physiographic regions in the state of Michoacán, it was shown that the turkey can have variations in the color of its plumage, birds with the following colors were found: Tan, Narragansett, Royal Palm, Spanish Black, Slate or silver and Buffy (brown or red), other colors

not included in this classification were found. Regarding weight, within the same investigation, at 12 months it was possible to know that the birds with the highest weight were those from regions with a temperate climate. In the same study, it was shown that females nest 2 to 3 times per year. Regarding production units, 94.3% are not technified; but in these cases some improved management practices have been implemented, such as the use of balanced feed in poults up to two months of age. Likewise, few vaccination plans are used and very important the poultry farmers do not breed improved varieties, this means that the genetic of the turkey is autochthonous (López-Zavala R. et al., 2008). In another study carried out in the state of Michoacán, it was shown that female turkeys with gray feathers produced more eggs and with greater weight than those of any other color (Juarez-caratachea A. et al., 2018).

F. Management of the Turkey in Campeche

In a study carried out in indigenous Mayan communities of the center and south of Campeche, it was shown that in the raising of the native Turkey, more than 60% of the growers use corn grains to feed them. With regard to diseases in this bird, the most common are respiratory and digestive, due to the few applications of vaccines. The flocks of this species are majorly constituted by birds in the juvenile stage, and the rearing is commonly carried out by women (Portillo-Salgado R., et al., 2017).

G. Management of the turkey in Yucatán

The turkey (*Meleagris gallopavo*) is resistant to unfavorable environmental conditions; however, this species can have ectoparasites, such as *Chelopistes meleagridis*, *Lipeurus caponis* and *Menacanthus stramineus*, this was demonstrated in four municipalities of the State of Yucatán, Motul, Maní, Cepeda and Timucuy (Canul et al., 2014).

In an investigation we have done this year in the south of the State of Yucatán, regarding the feeding of the turkey, in populations such as Xohuayan, Kancab, San Marcos, and in other nearby towns, some families feed their Turkeys, with corn grains, food waste or mix of balanced food with ground nixtamalized corn. However, the custom is that the turkeys are released in the backyard of the houses, where they feed on insects or herbs (**Figure 1**)



Figure 1: Domestic turkey, úulum in the Mayan language. A) Turkey in a cage with a soil floor. B) Turkey in a cage with a cement floor. C) Free turkey in the yard. D) Girl feeding turkeys.

Conclusions

In Mexico the species *Meleagris gallopavo* is still domesticated; it can commonly be found in rural areas. The variety of colors in the turkey plumage and its growth characteristics may vary, due to the diversity of climates throughout Mexican National territory. However, there is the possibility that some genotypes or phenotypes could disappear in the future, as a result of environmental factors and domestication methods used in the management of this species. Furthermore, this species could disappear because of the loss of Mexican traditions, since they are usually consumed in traditional festivities. Therefore, it is of great importance to create or implement breeding programs for *Meleagris gallopavo* in rural or peri-urban communities, as well as to promote the preservation of Mexican traditions.

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