Characterization of the backyards, in the families of la Concordia, Chiapas, México

Caracterização dos traspatios das famílias de la Concordia, Chiapas, México

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ABSTRACT
From the applied interviews, and selection of variables through factor analysis by principal components and clusters, it was found that 22 variables describe 83.13% of the variability. Six
groups of backyards were identified, characterized by animal production, plant production, family size, available backyard area, export of labor power, diversity and animal consumption. Under the previous context, group one, made up of 44 backyards, these scenarios are characterized by family size and the export of labor, as income from labor. Group two, made up of 11 backyards, are scenarios characterized by their low production profile, made up of single-generation nuclear families. Group three, made up of 18 backyards, are scenarios characterized by the size of families, mainly extended, their low productive profile in animal production. Group four, made up of 20 backyards, are scenarios characterized by having a greater plant production, made up of nuclear families of two generations and extended. Group five, made up of 37 backyards, are scenarios characterized by having a greater diversity of animal species and used for family consumption, made up of nuclear families of two generations, likewise, exporting the labor force, as income from the hand of work. Group six, made up of four backyards, are scenarios characterized by having a larger backyard area, dedicated to animal production, mainly pigs. These types of backyards are made up of extended families.

**Keywords:** Chiapas, backyard, typology

1 INTRODUCTION

Backyards are family settings, bordering the home, they have the characteristics of being areas on small scales, with a greater presence in families in rural, suburban and marginalized areas (Sánchez and Torres, 2014). The activities carried out are linked to the local culture (Mariaca et al., 2007).

The relationship of the backyard with family nutrition has been closely linked over the years. However, the characteristics of the backyards have been influenced by various factors, since they...
are the results of social practices based on experiences and knowledge that have allowed them to remain linked to cultural traditions (López, et al., 2013 and Vieyra et al., 2004). In the backyards, production activities are carried out, carried out by the family labor force, mainly by the heads of the family, in addition, they are the ones who manage the resources produced there (Reyes, 2014). The backyards are the coexistence in the same space and temporality of plant species with animal production such as chickens (Gallus gallus domesticus), turkeys (Meleagris gallopavo), ducks (Anas platyrhynchos domesticus), rabbits (Oryctolagus cuniculus), pigs (Sus scrofa domesticus), sheep (Ovis aries), cattle (Bos taurus indicus). Here also species such as dogs (Canis lupus familiaris) and cats (Felis silvestris catus) converge, which have the role of pets, with uses of guardian and pest control respectively (Cobo and Paz, 2017).

In this sense, backyards handle and conserve plant species diversity, due to the importance and uses. In some plants, the uses are subjective, since they are cultivated only to beautify the place (González et al., 2014). In addition, it promotes feelings of psychological and physical well-being in people (Department of Environmental Horticulture, University of Florida, 2005).

Under the previous context, the following work is proposed with the aim of typifying and characterizing the backyards in relation to the food management function for families in the municipality of La Concordia, Chiapas; with what is sought to generate information that can be taken into account by decision makers, in future interventions in the municipality.

2 METHODOLOGY

Study area: The study was carried out in the municipality of La Concordia, Chiapas, located in the La Frailesca socioeconomic region. The municipality has a predominantly humid warm (Aw²) and semi-warm subhumid (A) C (w²) climate (García, 1998). It borders to the north with the municipalities of Villa Corzo, Venustiano Carranza and Socoltenango; to the east with the municipalities of Socoltenango and Chicomuselo; to the south with the municipalities of Chicomuselo, Ángel Albino Corzo, Mapastepec and Pijijiapan; to the west with the municipalities of Pijijiapan and Villa Corzo. CONAPO (2012), has stratified the municipality in Very High in degree of marginalization, on the other hand, CONEVAL (2010), mentions that there is a degree of poverty of 83.72% of the population, due to income below the welfare line That is, a low income at the cost of the basic food basket, consequently, has a High Social Lag.

Data and variables: The research is non-experimental, with a qualitative and quantitative approach, 134 semi-structured interviews were applied in 24 locations in the municipality of La Concordia, Chiapas. The sample size was 5% of the families in the study area and was estimated using the formula suggested by Snedecor and Cochran (1967). For the backyard typology, it was
based on the Escobar and Berdegué (1990) methodology. The selected variables were captured in the electronic sheet of the Microsoft office Excel-2016 ® Software, systematically ordered, and then they were analyzed using descriptive statistics and factor analysis of principal components and clusters.

3 RESULTS AND DISCUSSION

Result of the factor analysis to obtain the typology of backyards, it was found that, of the 134 variables considered in the interviews applied to families, only 22 variables describe 83.13% of the variability, with the identification of six main groups of backyards (Figure one). With which the backyard agrodiversity is corroborated (Olvera et al., 2017; Rubí et al., 2014; Mariaca, 2012) and that they are mainly oriented to family subsistence (Reddiar et al., 2017; Alary et al., 2016)

Figure 1. Dendogram of the types of backyards, in La Concordia, Chiapas. source: own development from field work. 2019.

In this sense, the behavior of the 21 original variables associated with the six components that characterize each backyard group is shown (Figure 2).

Figure 2. Characterization of the backyard groups. Source: own elaboration from field work. 2019.
Group one, made up of 44 backyards, scenario where the family is identified as having an average of 4.3 members, coincides with data reported by Muñoz et al., (2017), made up of three generations. 100% are based on strategies to export labor force outside its productive unit, in order to obtain income, derived from the income from labor, and can have access to food economically. Likewise, this group dedicates 57.55% of time to backyard activity, in an average area of 330.64 m², therefore, they produce an average of 14.59 kg of animal meat (chickens) and 21.68 kg of plant species, mainly fruits, most of the production is for family consumption. However, they have sporadic sales, with revenues of $ 744.66 and 168.07, in sales of poultry, eggs and fruits, respectively. In this sense, it agrees with what was reported by Salazar and Magaña (2016); Vieyra et al., (2004); Trigueros (1994), the social relationship that coexists in the care of each member, where the head of the household takes responsibility for seeking income, whether it comes from activities as wage earners or from activities carried out on the agricultural plot. Likewise, the head of the household, and the children to a lesser extent, dedicate the care of the backyard. It agrees with what was reported by Salazar and Magaña (2016); Vieyra et al., (2004), in families there is cooperation and contribution of labor among the members, since economic, social and gender roles are determining factors in the family structure.

Group two, made up of 11 backyards, scenario where the family is identified as having an average of 1.64 members, mainly older adults, are single-generation nuclear families, it differs from those reported by Muñoz et al., (2017). These backyards are of low production profile with an area of 321.27 m²; that is, vegetable production (25.31 kg) and animal production (7.58 kg), of which they have income of MX$ 380.00 in animal production (chickens, eggs) and MX$ 100.95 of the sale of plant species, mainly fruits diversity. The consumption of the animal species is limited, however, they dedicate 100% to the backyard activity, to produce mainly ornamental and medicinal plant species.

Group three, made up of 18 backyards, this scenario where the family is identified as having an average of 5.22 members, made up of nuclear and extended families, agrees with the data reported by Muñoz et al., (2017) and Salazar and Magaña (2016) families are made up of a family structure made up of parents, children and relatives, classified as nuclear and extended. The 97.04% dedicate time in activities to the backyard, they present an area of 314.17 m² average destined to the production, however, the animal production is 11 kg and 8.59 kg of the vegetable species, mainly fruits, they have incomes of MX$ 717.78 and MX$ 60.11 mexican pesos from sporadic sales of poultry, eggs and fruits, which, does not support to feed all members, subsist due to the low export of labor force outside the family unit (5.93%), as labor income, in order to access food from the
basic basket. Another characteristic that identifies this group, 47.59% of its members, has the student activity.

Group four, made up of 20 backyards, scenario where the family is identified as having an average of 4.60 members, composed of nuclear and extended families, agrees with the data reported by Muñoz et al., (2017). 79.71% dedicate time to the activities of the backyard and 7.19% on average to export the labor force, in the income of the labor force. They have an area of 415.75 m² on average for plant production and animal production, of which they use for family consumption and sale of surplus, mainly chickens, eggs, with an income of MX$ 1,364.35 and MX$ 925.80 from the sale of plant species, mainly fruits. It agrees with that reported by Olvera et al., (2017) the plant and animal species in the backyard are conserved due to the importance in the uses that families know by culture.

Group five, made up of 37 backyards, a scenario where the family identifies itself as having an average of 4.08 members, agrees with that reported by Muñoz et al., (2017) and González et al., (2014) Mexican families are usually made up of four to five people. They are characterized by having diversity of species in the backyard. It is the second group with the largest area available for the backyard (453.17 m²) and number of animal species, mainly birds such as chickens and turkeys, ducks. Part of the production is for family consumption. However, they make sales of standing vegetables or of the by-product (egg), in this way, they obtain income of MX$ 1,403.74 and MX$ 158.84 from vegetable production. Therefore, animal production in this backyard group constitutes an important source of food for families, and also contributes to the family economy. Likewise, they reinforce the income with the export of labor, in the income of labor.

Group six, consisting of four backyards, a scenario where families are identified as being made up of five people on average, data similar to those reported by Muñoz et al., (2017) and González et al., (2014). Most (86.67%) dedicate time to backyard activities. This group of backyards have significantly more backyard area (3,175 m²) than the previous groups. They are characterized by having large areas available for animal production, such as chickens and pigs, the birds are used to produce meat, eggs and the pigs are finished for sale, from which they earn MX$ 6,114.34. In this sense, animal species are taken as a way of saving family sustenance. Regarding plant production, they present income of MX$ 206.50 Mexican pesos, respectively.

In this sense, with the economic resource, they acquire products from the basic basket, for family consumption. However, they also export labor power, to earn income from labor income. Regarding the size of the backyard, it differs from that found by Olvera et al., (2017) and Guarneros et al., (2014) report up to 3000 m² and 29.5 m² of space for backyard production, respectively.
The backyard groups are typified by animal production and plant production. In this sense, they have production of birds such as chickens *Gallus gallus domesticus*; for family consumption and pigs, *Sus scrofa* spp, for commercialization, therefore, have greater utility, precisely because of the last activity derived from the raising of pigs. This means that these types of backyards not only seek to supply food for the family, but also market for economic income, thereby managing food physically and economically for families. These groups of backyards have similar characteristics to those reported by FAO (2018); Vargas et al., (2017); Cobo and Paz, (2017); González et al., (2014); Rodríguez et al., (2012), Vieyra (2004) and FAO (2002), have a common element in the animal species, the production of birds, mainly chickens, followed by turkeys, ducks and sporadically pigs, the latter, are subject to permits to have in the backyards, by the local authorities. The backyards are combined with the diversity of plant species, mainly fruit such as lemon (*Citrus aurantifolia*), orange (*Citrus X sinensis*), avocado (*Persea americana*), mango (*Mangifera indica*), papausa (*Annona macroprophyllata*), tamarind (*Tamarindus indica*), in addition to guineo (*Musa × paradisiaca*), chipilín (*Crotalaria longirostrata*), which they sell in local markets or between neighbors, in order to obtain income, in order to acquire products from the basic basket. In the backyards plants are produced and preserved with use to beautify the place such as the rose of castile (*Rosa sp.*), Crown of christ (*Euphorbia milii*), chrysanthemum (*Chrysanthemum morifolium*), cockscomb (*Celosia cristata*), Hawiana (*Alpinia purpurata*), Fern (*Pteridium aquilinum*), Mañanitas (*Portulaca grandiflora*), Aloe (*Aloe vera*), Lemon grass (*Cymbopogon citratus*), Basil (*Ocimum basilicum*). It is worth mentioning that the plant species, in the backyards, represent a cultural wealth, because they are also preserved for their medicinal use. What agrees with what was reported by Chable et al., (2015); González et al., (2014); Mariaca et al., 2007. In addition, they give emotional satisfaction to families when seeing the diverse backyards of vegetation and animals.

In the backyard groups, the family converges as labor, for the care and management of the species found there, however, the heads of families are the most immissive in charge of work-at-home activities, in which they are backyard activities integrated (Figure 3). Which agrees with what was reported by May (2018); Rodríguez et al., (2012); Vieyra (2004).
4 CONCLUSION

Knowing the backyards and their conformation based on their natural resources, the production utility they have, as species for medicinal use, edibles or animal species, constitute an advance for decision-making, and being able to intervene to improve them and that contribute to the generation of wealth as part of the local culture, food management and as a savings fund for when required, in situations of need in families.
REFERENCE


