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Development of family gardens by Guabeños older adults from El Oro province, Ecuador

Desarrollo de huertos familiares por los adultos mayores guabeños de la provincia El Oro, Ecuador

Desenvolvimento de hortas familiares pelos adultos idosos guabeños da província de El Oro, Equador

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ABSTRACT

Family gardens have become a tool for food sovereignty and security because they provide healthy agricultural products that guarantee people's food and contribute to improving their quality of life. The objective of the present work was to evaluate the results of the project of association with the society entitled: "The garden as a teaching-learning resource on food culture in older adults". A descriptive research was carried out where the survey and observation techniques were applied. The results obtained showed that older adults were able to develop family gardens in their homes where they cultivated vegetables, fruits and medicinal plants for consumption. Family gardens developed by older adults can contribute to their food security and improve their quality of life.

Keywords: family gardens; older adults; quality of life

RESUMEN

Los huertos familiares se han convertido en una herramienta de soberanía y seguridad alimentaria porque proporcionan productos agrícolas sanos que garantizan la alimentación de las personas y contribuyen a mejorar su calidad de vida. El objetivo del presente trabajo fue evaluar los resultados del proyecto de vinculación con la sociedad, titulado: "El huerto como recurso de enseñanza-aprendizaje sobre cultura alimentaria en los adultos mayores". Se realizó una investigación descriptiva donde se aplicaron las

técnicas de encuesta y observación. Los resultados obtenidos demostraron que los adultos mayores fueron capaces de desarrollar huertos familiares en sus hogares, donde cultivaron hortalizas, frutas y plantas medicinales para su consumo. Los huertos familiares desarrollados por los adultos mayores pueden contribuir a su seguridad alimentaria y mejorar su calidad de vida.

Palabras clave: huertos familiares; adultos mayores; calidad de vida

RESUMO

As hortas familiares tornaram-se um instrumento de soberania e segurança alimentar porque fornecem produtos agrícolas saudáveis que garantem a alimentação das pessoas e contribuem para melhorar a sua qualidade de vida. O objectivo deste trabalho foi avaliar os resultados do projeto de ligação à sociedade intitulado: "A horta como recurso de ensino e aprendizagem da cultura alimentar", entre os mais velhos. Foi realizada uma pesquisa descritiva onde foram aplicadas as técnicas de levantamento e observação. Os resultados obtidos mostraram que os adultos mais velhos foram capazes de desenvolver hortas familiares nas suas casas, onde cultivavam vegetais, frutas e plantas medicinais para consumo. As hortas caseiras desenvolvidas por adultos mais velhos podem contribuir para a sua segurança alimentar e melhorar a sua qualidade de vida.

Palavras-chave: hortas familiares; adultos idosos; qualidade de vida

INTRODUCTION

Gardening is an agricultural practice that has accompanied human beings for ten millennia and its existence has always been related to the production of food for consumption, exchange and marketing. Currently there are different types of gardens, including school gardens, vertical gardens, ecological gardens, urban gardens and family gardens.

According to Cano (2015), the family garden is the agroecosystem with traditional roots where the peasant family lives and produces, it is made up of trees, as well as other crops and animals that occupy often reduced spaces that are located near the homes.

Family gardens are considered very common production systems and consist of a small area of land, attached to the house where families obtain an important food supplement and, in many cases, also achieve a source of income (Gutiérrez Cedillo et al., 2015). Other authors define family gardens as social spaces that exist near the home and are managed by various family members who contribute not only to subsistence and commercial production, but also to the continuity of cultural identity (Bellenda et al., 2018).

The benefits of family gardens are innumerable: they contribute to food security, lead to savings in family expenditure, conserve agricultural biodiversity, promote autonomy, strengthen family and social relations, improve eating habits and quality of life, among

others. In addition, home gardens promote teamwork among all family members, particularly young people, adults and the older adults. The inclusion of the whole family in family gardens ensures the transmission of knowledge among generations

The participation of older adults in family gardens becomes a viable alternative that can modify their eating patterns by producing fruit and vegetables for consumption. Older adults are understood to be all persons aged 65 years or more, who are in a stage characterized by functional deficiencies, as a result of biological, psychological and social changes, conditioned by genetic aspects, life styles and environmental factors.

In Ecuador, family gardens can help eradicate malnutrition and promote healthy habits and practices that improve people's quality of life.

During the period May 2017-February 2019, the Universidad Metropolitana of Ecuador developed the project for linking up with society, entitled "The garden as a teaching-learning resource on food culture", in which students from the Agricultural Management and Marketing of Primary Products Engineering course and older adults assisted by the Social Welfare Board of the Decentralized Autonomous Government of the El Guabo canton, El Oro province, participated. In the project, the older adults learned to build a garden, plant vegetables, fruit trees and medicinal plants, apply cultural tasks (fertilization, irrigation and weeding), produce natural repellents and harvest all the cultivated plants. In addition, the older adults received different talks on food culture (Pineda Encalada & Estrada Martinez, 2019).

The objective of this work is to evaluate the results of the project for linking up with society "The garden as a teaching and learning resource on food culture".

MATERIALS AND METHODS

A descriptive research was carried out that took into account the construction and maintenance of family gardens by the older adults, as a result of the practical application of the knowledge acquired in the project for linking up with society "The garden as a teaching-learning resource on food culture". The authors of this paper designed a survey with closed questions that was applied to 139 older adults between the ages of 65 and 75. Direct observations were made in the gardens built by the older adults in their homes.

Survey applied to older adults

1. Gender:

   M _____

   F _____

2. Age:

   Between 50 y 60 _____

Between 60 y 65 _____

Between 65 y 70 _____

3. Occupation:

Retired _____

Housewife _____

4. Space available in your home to build a garden:

Yard _____

Garden _____

Aisle _____

Other _____

5. Reasons to grow vegetables, fruit and medicinal plants:

Economic reasons _____

You feel useful _____

Spend your time on a useful activity _____

You have access to healthy food _____

6. People involved in gardening

The whole family _____

Some member of the family _____

Work alone _____

7. Frequency of consumption of vegetables, grown in the garden:

Daily _____

Three times a week _____

Once a week _____

8. Do you considers the consumption of vegetables, fruit and medicinal plants is important for health?

Yes _____

No _____

RESULTS AND DISCUSSION

Table 1 shows the results of the survey on the gender and personal situation of older adults who built gardens in their homes. As can be seen, 83.45% were housewives, while 16.55% were retired men. These results show the role of women in family gardens. For Cruz (2016), women are the primary providers of food for their families, tend to

participate more than men in the domestic economy and are the ones who know best the modalities and uses of local biodiversity.

Table 1 - Gender and personal situation of older adults surveyed

Gender	Personal situation	Number of older adults	Percentage
Male	Retired	23	16,55 %
Female	Housewife	116	83,45 %

Source: Prepared by the authors, based on the responses of the older adults to the survey applied

The women of the Mapuche Gramajo Community in Argentina develop gardens and greenhouses with a great variety of vegetables, aromatic plants and fruit trees, and it is also the women who decide to introduce the cultivation of exotic and native species in the gardens (Bünzli, 2016).

In a study conducted by Krishnamurthy, Krishnamurthy, Rajagopal and Peralta (2017) in Yucatan, Mexico; the gardens are managed mainly by women who are in charge of their care and maintenance.

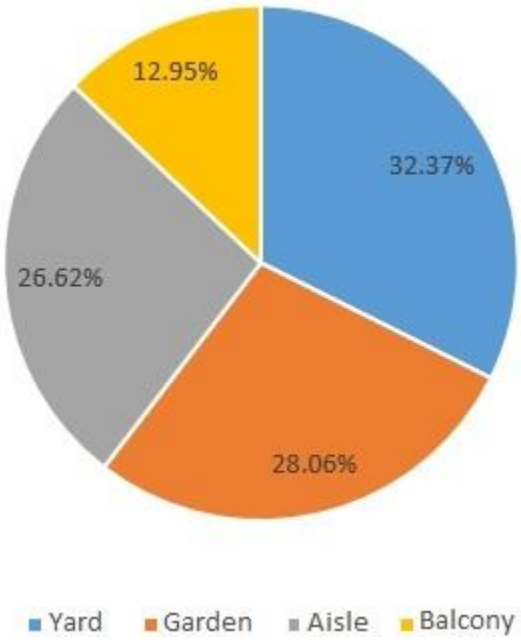
In recent times, family-based agricultural production subsists in many cases, without third-party labor, and women are the direct producers of the crops (Martínez Montenegro & Baeza Leiva, 2017).

It is important that older adults have space in their homes to build a family garden and, in this way, be able to grow plants for their own and their family's food.

In graph 1, the percentages of the spaces available in the homes of the older adults to build a garden can be seen. As can be seen, the highest values correspond to the patio (32.37%) and garden (28.06%), places where the majority of older adults converted the family garden for the production of vegetables, fruit trees and medicinal plants.

On the availability of drinking water, 99.28% of the older adults responded that they had access to this vital element, while one person representing 0.72% indicated that they did not have drinking water at home. For the construction and maintenance of a vegetable garden, it is important to take into account the availability of water to irrigate the plants with the frequency established for each crop, according to the type of soil and the prevailing climatic conditions.

When the homes of the older adults were visited, the diversity of plants planted by this group of people could be appreciated. Most of the older adults had home gardens planted with vegetables such as onions, turnips, peppers, chard, beans and radishes, and fruit trees such as papaya, as well as medicinal plants such as basil, aloe, lemon verbena and moringa (Fig. 1).



Graph 1 - Availability of spaces for building vegetable gardens in the homes of older adults surveyed
Source: Prepared by the authors, based on the responses of the older adults to the survey applied

Fig. 1 - Diversity of plants planted by older adults in home gardens
Source: Photographs taken by the authors in the family gardens of the older adults

The diversity of plant species in the family gardens, tended by the older adults, responds to the food needs and the knowledge acquired during their participation in the project for linking up with society. These results show that the older adults were able to build and maintain home gardens with a wide diversity of plants.

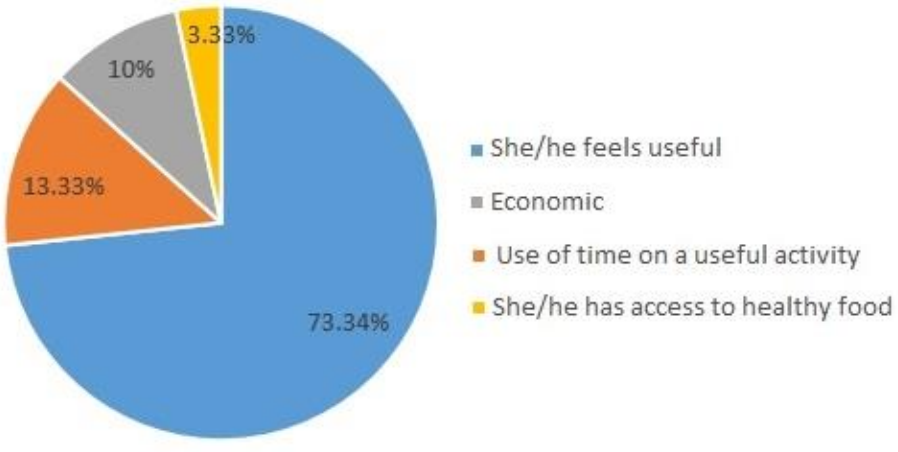
The high diversity of plants is important for meeting the livelihood needs of households, especially in terms of food production and primary health care (Ruiz Solsol et al., 2014).

According to Montenegro, Lagos and Vélez (2017), home gardens conserve diverse agricultural species that respond to family preferences and needs.

Reyes and Álvarez (2017) demonstrated that agrobiodiversity and home garden management contribute to the food security of the Bandera de Juárez community in Mexico. The results obtained by these authors showed the role of home gardens in the production of food for the daily diet of families and the impact of adequate nutrition on health.

Regarding the use of the harvested products, all the older adults stated that they were for their own consumption. Having a family garden is very important for this group of people because it gives them access to fresh and nutritious food that can improve their quality of life. In this way, family gardens contribute to the food sovereignty of older adults because they manage to produce food in a sustainable way for the benefit of themselves and their families.

As shown in graph 2, it is important for older adults to grow vegetables, fruit and medicinal plants because they feel useful (73.34%); it is a way of spending their time in a useful activity (13.33%), for economic reasons (10%) and it enables access to healthy food (3.33%). Most of the older adults felt useful with the work done in the family gardens and this response is related to the quality of life of this group of people.



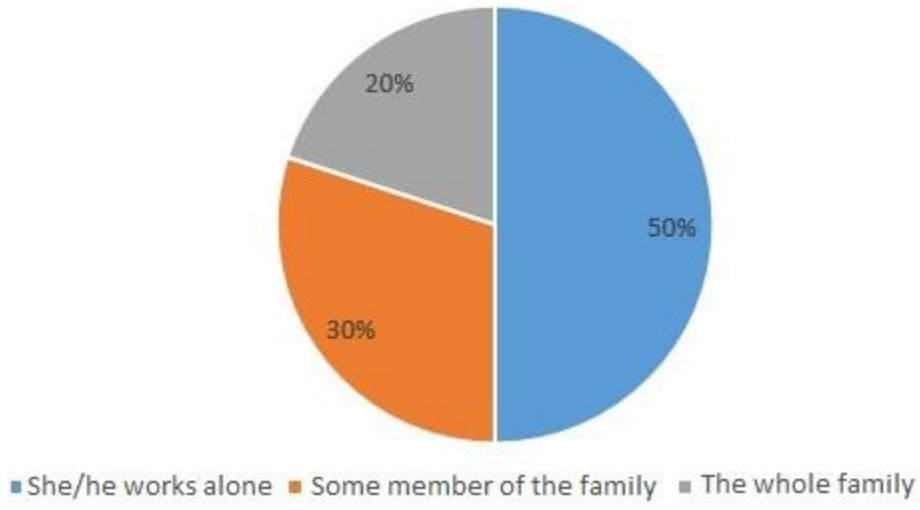
Graph 2 - Reasons to grow vegetables, fruits and medicinal plants in the family garden
Source: Prepared by the authors, based on the responses of the older adults to the survey applied

Aging is in itself a process whose quality is directly related to the way in which a person meets his or her needs throughout his or her life cycle (Rubio Olivares et al., 2015). In this sense, Martínez, González, Castellón and González (2018) pointed out the importance of active ageing in improving the quality of life of older adults.

Regarding the significance of family gardens, 100% of the older adults considered that the development of the garden is an activity that keeps them active and, in turn, provides them with food for consumption.

According to García, Sánchez and Román (2019), natural environments have tangible effects on ageing, since, by stimulating the activities of daily life, they raise positive feelings, favor autonomy and the maintenance of health status as well as social relations and attachment to the place. In addition, gardens promote healthy, conscious and sovereign eating, contribute to community autonomy, and encourage collective work and self-management (Merçon et al., 2018).

As for the people who participated in the production process of the family gardens, 50% of the older adults said they had worked alone, 30% had the help of a family member, while 20% said that the whole family participated in the construction and maintenance of the garden (Graph 3). These results justify the importance of raising awareness among family members to get them involved in the productive activities of the garden, thus increasing family unity and developing values such as solidarity and responsibility. In the family gardens, all family members should participate because all the fruits, vegetables and medicinal plants that are harvested in the garden will be of benefit to the family, either for consumption or for marketing. As its name indicates, the family garden has special importance because it contributes to ensuring the food and nutrition of the whole family, therefore, the whole family group must participate in the productive activities.



Graph 3 - People who participated in the family garden
Source: Prepared by the authors, based on the responses of the older adults to the survey applied

For Gutiérrez and others (2015), the family unit makes use of the family garden agroecosystem as an area for social life, in which family relationships are established with neighbors and other community members.

It was recently demonstrated that family gardens promote teamwork, stimulate confidence, dialogue, self-esteem and improve interpersonal relationships (Díaz, 2018).

In table 2, the percentages of the frequency of consumption of vegetables by older adults are observed where only 16.55% consume vegetables daily, 74.82% two or three times a week, while 8.63% consume them only once a week. The older adults stated that these results may change, from the development of home gardens in their homes, because they allow them access to foods that improve their nutrition in accordance with their advanced age.

Table 2 - Frequency of consumption of vegetables from the garden by older adults

Frequency	Number of older adults	Percentage
Daily	23	16,55 %
Three times a week	104	74,82 %
Once a week	12	8,63 %

Source: Prepared by the authors, based on the responses of the older adults to the survey applied

Taking into account that human nutrition is a biological act that is socially, culturally and economically conditioned (Restrepo et al., 2006), family gardens can promote the development of attitudes and values that lead to behaviors that are more involved with healthy eating in older adults, families and, in the long term, the community. The intake of foods with adequate fiber, vitamins, minerals and liquids contributes to the healthy eating and nutrition of older adults. In this group of people, it is essential to maintain an adequate nutritional status to increase longevity and improve quality of life (Amador Muñoz & Esteban Ibáñez, 2015).

Regarding the knowledge of the importance for health of the consumption of vegetables, fruits and medicinal plants grown in the family garden, 100% of the older adults surveyed answered that they know that these agricultural products improve health because of their vitamin, mineral and water content. In addition, the older adults added that none of the plants in their home gardens were treated with chemical pesticides, which could affect their health.

According to del Puerto Rodríguez, Suárez and Palacio (2014), chemical pesticides come into contact with humans through the respiratory, digestive and dermal tracts, as these products can be found, depending on their characteristics, in the inhaled air, water and food. In addition, these authors pointed out that chemical pesticides have acute effects such as poisoning linked to short-term exposure and have chronic effects such as manifestations or pathologies related to long-term low-dose exposure.

In the talks received by the older adults participating in the project of linkage with society "The garden as a resource for teaching-learning about food culture" (Pineda Encalada & Estrada Martínez, 2019), these people learned about the negative effects of chemical pesticides on human health.

Fortunately, in the family gardens of older adults, no chemicals are applied that could damage their health and that of their families.

The results of this research showed that the older adults were able to develop family gardens in their homes, where the participation of housewives who planted and grew a wide diversity of plant species prevailed. The knowledge acquired by the older adults in the project "The garden as a teaching and learning resource on food culture", allowed the production of vegetables, fruits and medicinal plants that can contribute to food security, as well as improve the quality of life of this age group.

REFERENCES

Amador Muñoz, L. V., & Esteban Ibáñez, M. (2015). Calidad de vida y hábitos saludables en la alimentación de personas mayores. *Revista de Humanidades*, *25*, 145-168. https://doi.org/10.5944/rdh.25.2015.14374

Bellenda, B., Galván, G., García, M., Gazzano, I., Gepp, V., Linari, G., & Faroppa, S. (2018). Agroecological urban agriculture: More than a decade working together the Agronomy College (Udelar) with diverse social groups. *Agrociencia Uruguay*, *22*(1), 140-151. https://doi.org/10.31285/agro.22.1.15

Bünzli, A. B. (2016). El lugar de las mujeres en la permanencia de una comunidad rural aborigen de la región patagónica argentina. El caso de la Comunidad Mapuche Gramajo. *Revista Latinoamericana de Estudios Rurales*, *1*(2), 80-104. http://www.ceil-conicet.gov.ar/ojs/index.php/revistaalasru/article/view/161

Cano Contreras, E. J. (2015). Huertos familiares: Un camino hacia la soberanía alimentaria. *Revista Pueblos y fronteras digital*, *10*(20), 70-91. https://doi.org/10.22201/cimsur.18704115e.2015.20.33

Cruz Yáñez, L. A. (2016). El papel de las mujeres en los huertos familiares. *Alternativas en Psicología*, *36*, 46-60. https://www.alternativas.me/numeros/25-numero-36-noviembre-2016-edicion-especial/134-el-papel-de-las-mujeres-en-los-huertos-familiares

del Puerto Rodríguez, A. M., Suárez Tamayo, S., & Palacio Estrada, D. E. (2014). Efectos de los plaguicidas sobre el ambiente y la salud. *Revista Cubana de Higiene y Epidemiología*, *52*(3), 372-387. http://scielo.sld.cu/scielo.php?script=sci_abstract&pid=S1561-30032014000300010&lng=es&nrm=iso&tlng=es

Díaz, M. (2018). Huertas Caseras Familiares: Estrategia para el fortalecimiento de las relaciones interpersonales y la convivencia. *Cultura. Educación y Sociedad*, *9*(3), 263-272. https://doi.org/10.17981/cultedusoc.9.3.2018.30

García Valdez, M. T., Sánchez González, D., & Román Pérez, R. (2019). Envejecimiento y estrategias de adaptación a los entornos urbanos desde la gerontología ambiental. *Estudios Demográficos y Urbanos*, *34*(1), 101-128. https://doi.org/10.24201/edu.v34i1.1810

Gutiérrez Cedillo, J. G., White Olascoaga, L., Juan Pérez, J. I., & Chávez Mejía, M. C. (2015). Agroecosystems of familiar orchards at subtropical mexican highlands. A systemic vision. *Tropical and Subtropical Agroecosystems*, *18*(3), 237-250. http://www.revista.ccba.uady.mx/ojs/index.php/TSA/article/view/1844

Krishnamurthy, L. R., Krishnamurthy, S., Rajagopal, I., & Peralta Solares, A. (2017). Agricultura familiar para el desarrollo rural incluyente. *Terra Latinoamericana*, *35*(2), 135-147. https://doi.org/10.28940/terra.v35i2.145

Martínez Montenegro, I., & Baeza Leiva, M. (2017). Enfoques de género en el papel de la mujer rural en la agricultura cubana. *Revista Prolegómenos. Derechos y Valores de la Facultad de Derecho*, *20*(39), 29-38. https://dialnet.unirioja.es/servlet/articulo?codigo=5820618

Martínez Pérez, T. de J., González Aragón, C. M., Castellón León, G., & González Aguiar, B. (2018). El envejecimiento, la vejez y la calidad de vida: ¿éxito o dificultad? *Revista Finlay*, *8*(1), 59-65. http://revfinlay.sld.cu/index.php/finlay/article/view/569

Merçon, J., Morales, H., Nava Nasupcialy, K. N., & Ambrosio Montoya, M. (2018). La participación clave de las mujeres en huertos escolares de México. Reflexiones en torno a sus motivaciones, retos y aprendizajes. En *Agroecología en femenino: Reflexiones a partir de nuestras experiencias* (pp. 159-180). SOCLA/CLACSO.

Montenegro, M., Lagos, T., & Vélez, J. A. (2017). Agrodiversidad de los huertos caseros de la región andina del sur de Colombia. *Revista de Ciencias Agrícolas*, *34*(1), 50-63. https://doi.org/10.22267/rcia.173401.62

Pineda Encalada, A. D. L., & Estrada Martínez, M. E. (2019). El Huerto como recursos de enseñanza-aprendizaje sobre cultura alimentaria. *Gestión Ingenio y Sociedad*, *3*(2), 37-45. http://gis.unicafam.edu.co/index.php/gis/article/view/75

Restrepo, S. L., Morales, R. M., Ramírez, M. C., López, M. V., & Varela, L. E. (2006). Los hábitos alimentarios en el adulto mayor y su relación con los procesos protectores y deteriorantes en salud. *Revista chilena de nutrición*, *33*(3), 500-510. https://doi.org/10.4067/S0717-75182006000500006

Reyes Betanzos, A., & Álvarez Ávila, M. C. (2017). Agrobiodiversidad, manejo del huerto familiar y contribución a la seguridad alimentaria. *AgroProductividad*,

10(7), 58-63. https://www.revista-agroproductividad.org/index.php/agroproductividad/article/view/1058

Rubio Olivares, D. Y., Rivera Martínez, L., Borges Oquendo, L. de la C., & González Crespo, F. V. (2015). Calidad de vida en el adulto mayor. *Varona. Revista Científico-Metodológica*, *61*, 1-7. http://revistas.ucpejv.edu.cu/index.php/rVar/article/view/267

Ruiz Solsol, H., Rivas Platero, G. G., & Gutiérrez Montes, I. A. (2014). Huertos familiares: Agrobiodiversidad y su aporte en la seguridad alimentaria en territorios rurales de Guatemala. *Agroecología*, *9*(1-2), 85-88. https://revistas.um.es/agroecologia/article/view/300651

Conflict of interest:

Authors declare not to have any conflict of interest.

Authors' contribution:

The authors have participated in the writing of the paper and the analysis of the documents.