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IMPLEMENTATION OF GOOD AGRICULTURAL PRACTICES FOR PRODUCERS IN THE MUNICIPALITIES OF ÁBREGO AND VILLA CARO

IMPLEMENTACIÓN DE BUENAS PRÁCTICAS AGRÍCOLAS PARA PRODUCTORES DE LOS MUNICIPIOS DE ÁBREGO Y VILLA CARO

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ABSTRACT

This complete scientific research article is derived from a project of the Government of Norte de Santander focused on small farm producers within the framework of updating agricultural practices as a component that affects health, quality, safety and economy. producers, families and society in general. The main objective was to evaluate the implementation of Good Agricultural Practices (GAP) in 30 farms linked to the Ecosembrando project in the municipalities of Abrego and Villa Caro in Norte de Santander. The execution time was during the year 2021. The methodology used was of a mixed type with qualitative and quantitative methods with instruments such as initial and participant observation, interviews with peasants and farmers, training workshops for focus groups and a final questionnaire with questions closed to verify the knowledge acquired and the guidelines

implemented by small producers. The main results showed that there is a total ignorance of peasants and farmers about the GAP standard; however, with the training, workshops, and explanations, it was possible to meet more than 80% of the requirements demanded by the standard to improve agricultural practices. The most relevant conclusions show that, despite the ignorance of GAP, farmers and growers are quite receptive to learning about the subject to improve their crops and the traditional way of agriculture by incorporating new techniques.

Key words: Farmers, Crops, Eco-sowing, Safety, Food production.

RESUMEN

El presente artículo completo de investigación científica se deriva de un proyecto de la Gobernación de Norte de Santander enfocado en los pequeños productores de fincas en el marco de la actualización de las prácticas agrícolas como un componente que repercute en la salud, calidad, inocuidad y economía de los productores, las familias y la sociedad en general. El objetivo principal fue evaluar la implementación de Buenas Prácticas Agrícolas (BPA) en 30 fincas vinculadas al proyecto Ecosembrando en los municipios de Ábrego y Villa Caro en Norte de Santander. El tiempo de ejecución fue durante el año 2021. La metodología utilizada fue de tipo mixta con métodos cualitativos y cuantitativos con instrumentos como la observación inicial y participante, entrevistas a los campesinos y agricultores, talleres de capacitación a grupos focales y un cuestionario final con

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preguntas cerradas para verificar el conocimiento adquirido y los lineamientos implementados por parte de los pequeños productores. Los principales resultados mostraron que existe un desconocimiento total de los campesinos y agricultores sobre la norma de BPA; sin embargo, con la capacitación, talleres y explicaciones se pudo cumplir con más del 80% de los requisitos exigidos por la norma para mejorar las prácticas agrícolas. Las conclusiones más relevantes muestran que, a pesar del desconocimiento de las BPA, los campesinos y cultivadores son bastante receptivos al aprendizaje del tema para mejorar sus cultivos y la forma tradicional de la agricultura incorporando nuevas técnicas.

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Palabras clave: Agricultores, Cultivos, Ecosembrando, Inocuidad, Producción alimentaria.

INTRODUCTION

Current agricultural practices are an issue of great importance due to the increase in population and demand for food. In addition to phytosanitary and safety requirements for quality products with low costs without harming human health (Ministry of Agriculture and Rural Development, 2018). The application of inadequate techniques, poor competitiveness, low productivity and zero standards contribute to the deterioration of natural resources. As well as increasing rural poverty, becoming factors that minimize the quality of life of communities. In addition, to be below the demands of current markets worldwide (Salcedo, 2007).

Sustainable agriculture is considered a development strategy. It helps to change some of the limitations and negative effects identified in conventional production. Sustainable agriculture is a development strategy rather than a production technology. Land management, conservation of water sources and the use of inputs are based. Also, in the care of natural resources present

in the biodiversity of each area (Fundación Tierra, 2016). It can achieve compliance with protocols to improve crop quality. Also, get added value to producers in terms of modern knowledge about crops. Compliance with legal standards and a fairer marketing chain that ensures overall stability and benefits.

The implementation of good agricultural practices by peasants and farmers impacts all sections of the production chain. How to empower marketing lines and conserve the diversity of different types of forests. In turn, ensure that products and services are produced in a socially, economically and environmentally sustainable manner (Waterland, 2014). Crops for human consumption are no longer classified as activities that are done in isolation. They are linked to environmental conservation and public health. From their primary execution they must be done in an appropriate manner to ensure quality, profitability and care with resources. It involves continuous training and acquisition of modern knowledge given the conditions of today's world.

In this sense, it is necessary to transform the way of thinking and acting of peasants, farmers, producers and landowners. Above all, those intended for the planting of agricultural species for human consumption. So that on the farms some reforms are initiated and standardized protocols are met for this activity. As the correct signage to identify the different species of biodiversity present in the area of crops that are sown. The realization of inventories of flora and fauna in each of the lands and regions. As well as the application of authorized inputs that do not affect human health or have a negative impact on the environment (Rainforest Alliance, 2017).

It is also necessary to make an identification and signalling of risks and emergency exits. Implementation of methods to improve wastewater management (grey and black). Adequate storage, location and handling of chemical inputs and products for agricultural and livestock use. Good human relations and fair treatment with workers who engage in this trade on a daily basis. Until the monitoring and management of accounts through accounting records to give order and general knowledge. As well as learning about the different aspects of agriculture on farms and farms as established by the rules (Rainforest Alliance, 2017). All this implies the acquisition of new knowledge for many farmers.

In Colombia, as Rodríguez (2020) points out, some of the crops are more characteristic and traditional. Like tomatoes, corn, beans, beans and onions that are still grown and harvested by hand. It is done with ancestral agricultural practices where family labour is the main source of work. These crops have a great tradition in the department of Norte de Santander, located in the northwest of the country. There is a wealth of natural resources with more than 60 years of tradition since its first planting. Cultivated in small plantations within areas far from urban centers. Where characteristics can be evidenced such as the application of inadequate agricultural techniques, low competitiveness and low productivity in crops.

Among the municipalities with greater predominance of these characteristics we can find the towns of Abrego and Villa Caro. Where you can find sown tomato, paprika and coffee. Crops that help the socioeconomic development of these places, but that have not transcended a purely peasant economic activity. Traditional management, low technological application and moderate profitability (Norte de Santander Governorate, 2020). There, inadequate agronomic management is done, no fertilization and soil care is performed after each harvest. There is also a high incidence of diseases or pests in the area which has boosted the use of pesticides. This generates greater toxicity in crops and biodiversity in the region (Aktar, et al., 2009).

In Colombia, the Colombian Agricultural Institute (ICA) was delegated to regulate, lead and authorize programs aimed at ensuring safety. Focused on products of plant origin in a preventive way on primary production. Through Resolution N° 082394 of December 29, 2020, the need for guidelines arises. To ensure the implementation of Good Agricultural Practices (GAP) as a quality and safety assurance system. In addition to the guarantee for the consumer that the agricultural products supplied do not cause harm to their health. Since this is an essential element for the management of total quality and public health (Ministry of Agriculture and Rural Development, 2018).

The Food and Agriculture Organization of the United Nations -FAO (2012) defines GAP. As "a set of principles, standards and technical recommendations applicable to the production, processing and transport of food ... aimed at protecting human health, protecting the environment and improving the

conditions of workers and their families" (p 11). In addition, the beneficiaries of such practices are all social actors from farmers and their families. Having better knowledge of sowing and cultivation while obtaining healthy products. They improve their quality of life and market their production in a better way with higher income.

Final consumers will also have access to quality and safe food with sustainably grown products. They impact public health by enjoying better natural environments without pollutants and products grown with pesticides or chemicals (Food and Agriculture Organization of the United Nations-FAO, 2012). This ensures the safety of people, care, protection and preservation of the environment and natural environments. In addition, food safety to improve the diet and nutrition of children and adults. As well as animal welfare with less pollutants and better territories, water and food for them.

BPAs are also a challenge and an opportunity. On compliance (safety, environment and health), the entry of agricultural products to the markets of increasing demand will depend. Whether external or local. BPA has been applied in Colombia for the past 30 years. They seek to strengthen the countryside and end consumers, domestic and foreign. In addition to being a component of competitiveness, offer price improvement and opening to new markets. As well as consolidation of buyers, reduction of chemical and biological, environmental sustainability, economic, agricultural and social, and safety (Ballarda et al., 2010).

GPAs, when implemented in different regions of the national territory, must be a source of modern knowledge. For decision making and raising awareness on the importance of healthy food from sustainable agriculture. Highlight productive systems that prioritize life, solidarity, participation, sovereignty, well-being and sustainability. Emphasize the conservation and recovery of native seeds, barter and exchanges and local markets. This shows the exercise of territoriality and sovereignty that agroecological producers defend to strengthen their identity and culture (Álvarez et al., 2016).

In Colombia, efforts have been made to strengthen the countryside in recent decades. We can also observe the predominant deficiency of public policies that promote peasant agriculture and

agroecology. Above all, small and medium producers. Since the rural development model of the country is based on agro-export of raw materials. Thus, he relegates the issue of crops without the importance that this context deserves (Álvarez et al., 2016). In addition, it is also important to highlight the autonomous and empirical adaptation that peasants have made of their crops. As well as techniques from the changes produced in the modern world, mainly by the effects of climate change.

Consequently, and in accordance with the previous proposals, the objective of the project was to evaluate the implementation of Good Agricultural Practices (GAP) in 30 farms linked to the Ecosembrando project in the municipalities of Ábrego and Villa Caro in Norte de Santander. This, in order to observe the changes generated in the short and medium term about the knowledge and practices in the peasants. As well as growers and crops with the respective organization and compliance with duties to obtain certification in BPA. According to the guidelines of Resolution N° 082394 of December 29, 2020 of the ICA

MATERIALS AND METHOD

The methodology used to advance the research was mixed, since qualitative and quantitative techniques were incorporated for the collection of information through the different instruments designed and executed for this purpose. We used tools such as initial and participant observation, interviews with farmers, training workshops for focus groups and a final questionnaire with closed questions to verify the knowledge acquired, implementation of knowledge and compliance with the different guidelines in agroecological plots.

Likewise, the selection of the participating sites was in charge of the respective municipal governments through the non-probabilistic sampling technique, that is to say with those producers who expressed in writing their active participation, for the duration of the project and other requirements on tenure of the land for its good development. Here, it is important to highlight as pointed out by Cardenas and Vallejo (2016) that the production lands where the sowing was made should have good structure and low compaction to allow a balanced operation; as well as optimal levels

of organic matter to promote and facilitate the absorption of nutrients, in addition to increasing cation exchange capacity, with energy input for the activity of microorganisms.

In this way, the relevance in the quality of the sowing allows an optimal access at the time of harvest, to ensure that the product is optimal and of good quality, as well as digestible by the consumer without creating future consequences. It is necessary to define a soil under acceptable conditions for sowing because from there depends the safety of food as a guarantee that these will not cause any harm to people when consumed in different types of climates, environments or preparations (Ministry of Health and Social Protection, 2017)

From there thirty farms were chosen, fifteen in each municipality, to do the teaching practices and verification of results regarding the application of BPA in each region, as described in Table 1 below, as follows:

Table 1. Name of farms and farmers in Ábrego and Villa Caro

Ábrego		Villa Caro	
Name of the farm	**Farmer or representative**	**Name of the farm**	**Farmer or representative**
Villa Cristina	Ana Diva Sepúlveda Ropero	El Desecho	Álvaro Ortiz
Villa Alexandra	Edy María Pacheco Martínez	Betsaida	Arnulfo García Ramírez
Los Lirios	Elba Ortiz	Piñerez	Darío Jiménez Sánchez
El Oasis	Hernando Jaime Pérez	El Plan	Fredy Erly García Contreras
Los lirios parcela 6	Deiver Cañizares	Llanitos	Jesús Alberto Ortiz Ochoa
El Trapiche	Juan Bautista Alsina Arévalo	La Hacienda 2	Laura Victoria Peñaranda Ordoñez
Las Delicias	Juan Felix Llain Bermúdez	Carrizal	Leonar Mercedes Acevedo Barrera
Bienvenida	Nelly Álvarez Vergel	El Salobre	Leonardo Fabio Ochoa
El Contento	Manuel Pérez Vergel	El Cañaguate	Miguel Antonio Remolina García
El Chorro	Miguel Ángel Ortiz León	Tequendama	Sandra Milena Mora Ortiz
Los Lirios	Miguel Antonio Ortiz	El Verdal	Juan Carlos Peñaranda
La Palmera	Noel Peñaranda Arenas	El Potrerito	Belkis Nohalbi Redondo
Armenia	Numael Ortiz León	La Hermosura	Luis Albeiro Mora
Quebradita	Cristian Andrés Peñaranda	San Nicolás	Eduard Sánchez
El Guamal	Fanny Ascanio	La Quinta	Ismael Guerrero R.

Note. *Source own elaboration*

Likewise, the duration of the project was 12 months during 2021 where periodic visits were made to the farms in rural Ábrego and Villa Caro, talks and training to farmers, as well as verification of compliance with minimum requirements in each of the farms with the collaboration of the Ecosembrando project of the government of Norte de Santander, municipal governments and technicians of the National Learning Service (SENA) within the master's curriculum of the University of Pamplona. The main agricultural species that were recognized in the different farms that were part of the Ecosembrando project were tomatoes, onions, corn, beans, beans and paprika; In addition, farmers agreed to want to certify coffee as a main product they have on their farms. The socio-demographic characteristics of each region were also taken into account, as described below:

Ábrego. Ábrego is a municipality located north-west of the Norte de Santander department about 77.65 km from the capital of the department of San José de Cúcuta under the coordinates 8°04 39" North Latitude and 73°13 09" West Longitude. It has an area of 920 km2 of which 3 km2 correspond to the municipal seat and 917 km2 of extension for the rural area, where there is a population of more than 38,000 inhabitants in both the urban and rural sectors, formed by 8 corregimientos of which the 126 sidewalks are composed. The project involved the fifteen farms located in 9 sidewalks: El Oroque, El Hoyo, Santa Lucia, Rio Frio, La Soledad, Llano alto, El Tabaco, El Molino, and El Chorro. Although its altitude is at 1,398 masl, some parts of its geography reach 3,800 masl with warm thermal floors, temperate and paramos; however, most of the territory is on the temperate thermal floor with an average temperature of 21.

It has a very varied geography with mountainous areas with native and primary forest where you can find a variety of species of flora, mainly wild medicinal plants. The municipality is characterized by its agricultural activity since most of its territory belongs to the rural sector, where the transitional cultivation of red-headed onion stands out as one of the most important at the national level and main source of its economy. There is also the production of beans, tomatoes, tobacco, corn, peas, coriander, paprika and tomato. Among the permanent crops is the production of coffee, cocoa, avocado, cane, lulo, banana and tree tomato; for the annual crops stands out the

production of yucca and arracacha, where yuca is one of the most productive (Municipality of Ábrego, 2019).

Villa Caro. The municipality of Villa Caro belongs to the central subregion of the department of Norte de Santander, located in the Andean region, on the mountainous system of the Cordillera Oriental, with coordinates 7°54 53" North latitude and 72°58 19" West longitude at 98 km from the capital of the department of San José de Cúcuta. It has an extension in the municipal seat of 0.36 km2 and a rural area of 401.64 km2, for a total of 402 km2. It consists of 32 sidewalks, all these interact with the urban area and are distributed in the north, central area, eastern area and western area. The fifteen farms selected are located in only five of these: El Carrizal, El Roble, El Oso, El Último and La Cueva. In addition, the municipality is surrounded by two main water sources which are the Sardinata River and the Tarra River that provide pipes and streams. The main hydrographic center is located in the Paramo Guerrero where the river Sardinata is born at 3,400 meters above sea level.

Also, the municipality is located at an altitude of 1600 meters above sea level with an average temperature of 20°C in the middle of mountainous area with large cliffs and rocky terrain within the thermal floors from paramo to warm, in addition to having their own water sources that supply the region. In addition, it is within the paramo of Santurbán which represents the existence of natural intervened forest, coffee forest and secondary forests with extensive vegetation where species of varied mosses, lichens and algae of very cold water are found. One of the strong crops of the municipality is onion, along with permanent crops of traditional and technified coffee, traditional cane, banana and lulo. Among the transitional crops is the production of peas, red onion, corn, tomato technified, arracacha and paprika, as the basis of the economy of the region along with dual purpose livestock (Municipality of Villa Caro, 2020)

Finally, the implementation of the project, once the thirty farms were chosen in the two municipalities and the recognition of the land was made and the presentation with the owners or representatives of the lands, was made in three phases, thus:

First stage: It was contextualized in the approach, verification and diagnosis of the different farms and crops present there, as

well as the accompaniment of an agronomist belonging to the Ecosembrando project of the Governor of Norte de Santander. Three main activities were carried out here: a community diagnosis to know the reality of the population to intervene and detect their most relevant needs through a process of collection and analysis of information that allowed to discover the causes of the problems through interviews and the observation. The farmers were provided with materials such as paper and colored markers to make a billboard prepared by themselves where a sidewalk map was provided to identify the location of each of the participants with basic information of the sidewalk, boundaries, farms that integrate them, topography, agro-ecological conditions, land uses and water sources.

The second activity was to make a schedule of technical visits every 15 days to verify and evaluate the information provided by farmers in the previous activity, as well as the status of each of the farms. With each producer, the principles of BPA were reviewed as soil management; water treatment; crop production; plant protection; harvesting and post-harvest; human welfare, health and safety; environmental protection; and traceability and records. Finally, the third activity was to make the respective normative feedback stipulated in Resolution N° 082394 of December 29, 2020 of the ICA, where were explained the guidelines of the BPA that must be reached and fulfilled for the correct management of crops and lands, as well as institutional certification.

Second stage: Three main activities were presented: the socialization of the BPA Action Plan; the meeting with representatives of ICA, the National Learning Service (SENA) and municipal governments; and eight visits to each of the sites where conditions were verified, compliance with regulations and respective training, as well as meetings with technical staff from the region and the Ecosembrando project. The activities are explained as follows:

Third stage: The evaluation was made through visits to each of the farms to make a checklist through a project auditor. The visit to each farm lasted approximately 3 to 5 hours, during which time evidence of compliance with the BPA standard was collected through interviews with the producer, family and workers. Documentation was also reviewed (map, policies, billboard, SGSA notebook, folder organized with: action plan, evidence of

visits, soil analysis, medical examinations, training reports, safety sheets and internal inspection findings). In terms of polyculture, green cover, eroded areas, agroforestry component that provides shade to cultivation and integrated management of pests and diseases in the aquatic and terrestrial ecosystems on the site were evaluated. Regarding the infrastructure review, aspects such as tool holds, storage of agrochemicals and fuels, wastewater treatments, composting, ecological point and places of risk were evaluated.

A farm can achieve the minimum implementation level required by the standard with three fundamental conditions: No critical criteria; have 50% or more compliance with each of the ten principles of the BPA standard Resolution N° 082394 of 29 December 2020 of the ICA; and have a compliance of 80% or more of all applicable criteria of the BPA Standard Resolution N° 082394 of December 29, 2020 of the ICA.

RESULTS AND DISCUSSION

It presents the results obtained showing that at the beginning of the project's application there existed an unknown general of farmers and peasants on the rules governing GAP in the modern world and the care that should be taken of the land, water, fertilizers and labor to obtain safe and quality products. Likewise, the demarcation of sites and products used for cultivation within the farms was unknown, so it was not done or integrated in a single place or within the houses. For the farmers it was a novelty to receive this type of knowledge that led them to be more organized, make the most of the crops and help in the protection and conservation of natural resources. At the beginning, some of them were a little unhappy about the change in their traditional practices for the cultivation of agricultural species, but with the passing of the visits, the application of workshops, the training and the accompaniment of the personnel designated for the project, the mentality and actions of these people began to change as they became more interested in the standards of the GAP and the guidelines of ICA Resolution No. 082394 of December 29, 2020, with a view to being the first officially certified farms in Abrego and Villa Caro.

Thus, at the end of the project and after making the checklist to verify the results as shown in Table 1, it was observed that the farmers and farm owners complied with more than 90% of the guidelines required to obtain ICA certification and be in accordance with the GAP. The only point in which most of the farms in the two municipalities failed to comply was in having a dosing area for agricultural inputs, since in some cases emergency situations were not foreseen, equipment and protection elements were missing, the areas did not have adequate flooring, there was no water supply for triple washing in these areas, there were no correct measuring elements or the dosage for mixing inputs as stated on the product label was not followed to the letter.

Also, in Ábrego, only one farm did not have a sanitary battery and a separate sink for the workers, for which the municipality's mayor's office promised to provide. Another important aspect to highlight was that only six farms had permits for the use of water, which shows that the remaining nine farms have their own water sources and springs that do not require this type of permit. In Villa Caro, a third of the farms do not have clear information notices about the Standard and in three of the farms, the storage of agricultural inputs was not isolated from the home, but was done in the same place of residence of the farmers and their families. One last aspect that should be mentioned is that the 15 farms have their own or surrounding water sources in the properties, given that the municipality is characterized by having very good water sources that are used by the people of the region for irrigation of their crops and human consumption; for this reason, farmers do not want to apply for the water concession in CORPONOR, besides being wary of registering for the technical visit of the entity.

Likewise, the results obtained show that at the beginning of the implementation of the project there was a general lack of knowledge among farmers and peasants about the norms that govern GAP in the modern world and the care that should be taken of the land, water, fertilizers and labor to obtain safe and quality products. Likewise, the demarcation of sites and products used for cultivation within the farms was unknown, so it was not done or integrated in one place or within the houses. For the farmers it was a novelty to receive this type of knowledge that led them to be more organized, make the most of the crops and help in the protection and conservation of natural resources.

At the beginning some of them were a little unconformed by the change of their artisanal practices for the cultivation of agricultural species, but with the passing of the visits, the application of workshops, trainings and the accompaniment of the personnel designated for the project, the mentality and actions of these people began to change as they became more interested in the GAP standards and the guidelines of Resolution No. 082394 of December 29, 2020 of the ICA, with a view to being the first officially certified farms in Abrego and Villa Caro.

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Also, in Ábrego, only one farm did not have a toilet and separate sink for the workers, and the municipality's mayor's office undertook to provide them. Another important aspect to highlight was that only six farms had permits for the use of water, since the remaining nine farms have their own water sources and springs that do not require this type of permit. In Villa Caro, a third of the farms do not have clear information notices about the Standard and in three of the farms the storage of agricultural inputs was not isolated from the house, but was done in the same place of residence of the farmers and their families. One last aspect that should be mentioned is that the 15 farms have their own or surrounding water sources on the properties, given that the municipality is characterized by having very good water sources that are used by the people of the region for irrigation of their crops and human consumption; for this reason, the farmers do not want to apply for the water concession in Corponor, besides being wary of registering for the technical visit of the entity.

The rest of the requirements set forth in the GAP standard through ICA Resolution No.

082394 of December 29, 2020 and verified in the checklist were fully complied with by the 30 farms belonging to the project after their owners or persons in charge were trained.

Table 2 shows the results of the percentages obtained in the preliminary and final checklist in the two municipalities.

Table 1. *Comparison of preliminary and final percentage of GAP compliance on farms in Ábrego and Villa Caro, Colombia. 2021*

Municipalities	Ábrego		Villa Caro	
	Indicators	Percentage of compliance	Indicators	Percentage of compliance
Sanitary areas and facilities	75,5%	95,5%	66,6%	88,88%
Storage area for agricultural inputs	9,33%	100%	0%	96%
Area for dosing and preparation of agricultural input mixtures.	0%	56,66%	6,66%	60%
Fuel and oil storage area	0%	100%	13,32%	100%
Transitory stockpiling area for harvested produce	29,99%	100%	13,32%	100%
Area for employee welfare	39,96%	100%	33,33%	100%
Equipment, utensils and tools storage area	26,64%	100%	16,65%	100%
Equipment, utensils and tools	4,44%	100%	16,65%	100%
Water	11,10%	100%	19,98%	100%
Solid and liquid waste management	33,3%	100%	28,86%	100%
Soil protection management	29,97%	100%	19,98%	100%
Protection of beneficial insects and pollinators	9,99%	100%	0%	100%
Propagation material	8,32%	100%	6,66%	100%
Crop nutrition	4,44%	100%	3,33%	100%
Crop protection	3,33%	100%	0%	100%
Staff	4,4%	100%	2,22%	100%
Traceability	0%	100%	0%	100%

Note. *Source: Own elaboration*

With the evolution of modern technology, scientific research and significant population growth worldwide, agriculture and good practices made within this context are factors that have an impact on the quality of life of human beings since food as pointed out by the Ministry of Agriculture and Rural Development (2018) must meet phytosanitary and safety requirements as they have a direct impact on the health of the population. In addition, the world is constantly evolving in all fields and areas of life, so farmers and growers must adapt to the changes that each new era brings, since this also has repercussions on productivity, the economy of their families, the conditions of current markets, coping with climate change and the care and preservation of the

planet's natural resources, as stated by Salcedo (2007).

In addition, as stated by Terra Foundation (2016), current agricultural practices are aimed at leaving behind old conventional and artisanal paradigms, since a sustainable activity based on soil management, the use of appropriate inputs and fertilizers, the conservation of water sources and the protection of the environment in a responsible manner is sought. However, it is necessary to provide training for small producers and farmers, since that is where the chain of food production begins on both small and large scales. In this sense, Aktar, et al., (2009) propose to change the inadequate agronomic management done without taking care of soils and fertilization, increasing the incidence of pests or diseases that lead to the use of polluting pesticides on crops, which in the future causes the loss of product quality and the profitable and sustainable economy of the same by decreasing their commercial value.

Therefore, implementing GAPs on small farms and plots producing agricultural species is a necessity in the modern world, since they are a set of techniques and procedures aimed at improving human health, protecting the environment and natural resources, as well as impacting the conditions and quality of life of the workers themselves and their families, since the labor for these activities falls mainly on the farmers' families. In this sense, the Food and Agriculture Organization of the United Nations -FAO (2012) points out that the benefit is for all members of society by improving knowledge and practices on planting to produce food of better quality and safety, representing better economic income. Children are also protected, while enjoying natural environments free of contamination by not using pesticides or chemicals that affect the health of people, animals and water sources.

Although, in Colombia, the Colombian Agricultural Institute (ICA) was delegated the responsibility to regulate, lead and authorize programs in this regard through Resolution No. 082394 of December 29, 2020, the scope is only limited to one type of regulation, leaving aside the analysis of the conditions faced by small and medium-sized producers in remote areas of the national territory. Therefore, as pointed out by Álvarez et al. (2016), in our country there is a clear lack of public policies that favor small and medium-sized producers because the country's

economic model is based on the agro-export of raw materials, leaving the issue of agriculture, where peasants and farmers must adapt individually to the conditions and needs present in each region, as well as to the variants of current markets, the effects of climate change and the transportation of their crops from remote areas with countless adverse conditions, quite neglected.

One evidence of this is that in Colombia many of the traditional crops are still cultivated and harvested with family labor and in artisanal conditions according to the conditions of each region and the recursion of the farmers themselves. Species such as tomatoes, onions, beans, corn or beans that are grown in small plots in places far from urban centers in the municipalities, as expressed by Rodriguez (2020), are a sample of these conditions that the country currently has in the absence of real support from the State for the cultivation of species, protection of natural resources and implementation of GAP throughout the national territory.

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CONCLUSIONS

La aplicación de las BPA repercute directamente sobre la calidad de los cultivos agrícolas y los alimentos cosechados impactando directamente sobre la salud de los pobladores de la región y los consumidores finales.

Se actualizo los saberes dentro de las comunidades campesinas y productoras del campo en a la región con miras a mejorar las técnicas, productos, recursos naturales y hacer frente a las nuevas variaciones e imprevistos de la naturaleza debido al cambio climático.

La tecnificación de cultivos agrícolas tradicionales en Norte de Santander como son el tomate, el café, la cebolla, el maíz, el fríjol, la habichuela y el pimentón deben ser un reto para las administraciones locales en los distintos municipios del departamento, como fuentes de la dieta de los pobladores y

base de la economía para las familias de pequeños productores, campesinos y agricultores, de los municipios.

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