ISSN: 2310-340X | RNPS: 2349 | COODES Vol. 11 No. 1 e583 (January-April)
de la Nuez Hernández, D.; Castell Catalá, A. "Procedure for quality management in agricultural cooperative enterprises"
Available at: https://coodes.upr.edu.cu/index.php/coodes/article/view/583

2023

Original article

Procedure for quality management in agricultural cooperative enterprises

Procedimiento para la gestión de la calidad en empresas cooperativas agropecuarias

Procedimento para gestão da qualidade em empresas cooperativas agrícolas

Diana de la Nuez Hernández[1] 0000-0002-2184-2034 diana@upr.edu.cu

Ariel Castell Catalá[1] 0000-0002-5490-6145 ariel.castell@upr.edu.cu

[1] University of Pinar del Río "Hermanos Saíz Montes de Oca". Faculty of Economic Sciences. Pinar del Río, Cuba.

Received: 18/01/2023

Accepted: 12/04/2023

ABSTRACT

The objective of this article is to present the results of the application of a procedure for quality management in agricultural cooperative enterprises that contributes to the adoption of quality as a management function and to raising the levels of efficiency and effectiveness of business management in general. This research is based on the problem identified in the Unidad Básica de Producción Cooperativa "Julián Alemán", in the municipality of Consolación del Sur, in the province of Pinar del Río, which is that the predominant management approach does not contribute to the adoption of quality as a general management function and, consequently, affects the achievement of results in business management with adequate efficiency and effectiveness. Theoretical and empirical methods were used. The main results are the progressive adoption of quality as a management function to be performed by the Board of Directors in the first place and by all the cooperative members in general; its application allowed reaching conclusions among which stand out the obtaining of better results in management effectiveness and efficiency, which is expressed in the increase of the level of satisfaction of the clients, both external and internal, and in the satisfactory

fulfillment of other indicators linked to the deployment of this function in the production process (agricultural phase) in particular.

Keywords: quality management; agricultural product; agricultural cooperative enterprise; basic cooperative production unit.

RESUMEN

El objetivo del presente artículo es exponer los resultados de la aplicación de un procedimiento para la gestión de la calidad en empresas cooperativas agropecuarias que contribuye a la adopción de la calidad como función de dirección y a la elevación de los niveles de eficiencia y eficacia de la gestión empresarial en general. La presente investigación parte del problema identificado en la Unidad Básica de Producción Cooperativa "Julián Alemán", del municipio de Consolación del Sur, de la provincia de Pinar del Río, consistente en que el enfoque de gestión predominante no contribuye a la adopción de la calidad como función general de dirección y, por consiguiente, afecta la obtención de resultados en la gestión empresarial con la adecuada eficiencia y eficacia. Se utilizaron métodos tales como teóricos y empíricos. Como principales resultados sobresalen la adopción progresiva de la calidad como función de dirección a desempeñar por la Junta Directiva en primer lugar y por todos los cooperativistas en general; su aplicación permitió arribar a conclusiones entre las que resalta la obtención de mejores resultados en la eficacia y eficiencia de la gestión, lo cual se expresa en el aumento del nivel de satisfacción de los clientes, tanto externos como internos y en el cumplimiento satisfactorio de otros indicadores vinculados con el despliegue de esta función en el proceso de producción (fase agrícola) en particular.

Palabras clave: gestión de la calidad; producto agropecuario; empresa cooperativa agropecuaria; unidad básica de producción cooperativa.

RESUMO

O objetivo deste artigo é apresentar os resultados da aplicação de um procedimento de gestão da qualidade em empresas cooperativas agrícolas que contribui para a adoção da qualidade como função gerencial e para elevar os níveis de eficiência e eficácia da gestão empresarial em geral. Esta pesquisa se baseia no problema identificado na Unidade Básica de Produção Cooperativa "Julián Alemán", no

município de Consolación del Sur, na província de Pinar del Río, que é o fato de o enfoque predominante de gestão não contribuir para a adoção da qualidade como função gerencial geral e, consequentemente, afetar a obtenção de resultados na gestão empresarial com eficiência e eficácia adequadas. Foram utilizados métodos teóricos e empíricos. Os principais resultados são a adoção progressiva da qualidade como função gerencial a ser realizada pelo Conselho de Administração em primeiro lugar e por todos os cooperados em geral; sua aplicação permitiu chegar a conclusões, entre elas a obtenção de melhores resultados na eficácia e eficiência da gestão, o que se expressa no aumento do nível de satisfação dos clientes, tanto externos quanto internos, e no cumprimento satisfatório de outros indicadores vinculados à implantação dessa função no processo produtivo (fase agrícola) em particular.

Palavras-chave: gestão da qualidade; produto agrícola; empresa cooperativa agrícola; unidade básica de produção cooperativa.

INTRODUCTION

Quality management is achieved through the establishment in the organization of a management system in which the quality policy and objectives are defined and complied with. In this sense, Camisón Zornoza et al. (2006) state that a quality management system cannot exist by itself, but must be integrated into the processes, procedures, work instructions, measurements and controls, etc., of the organization's own operations.

For Antúnez Saiz (2016), the development of these systems provides sources of detection of non-quality generating activities; these elements, if not used and developed taking into account all the circumstances of the activity, can be generators of useless bureaucracy and unnecessary complications for the activities.

Quality management systems have been approached from different perspectives, with the results contributed by authors such as González Contreras and de la Nuez Hernández (2020), Espinosa Espinel and Parra Ferié (2020) and Fontalvo et al. (2021), who agree that these systems constitute a fundamental tool for the socioeconomic growth of organizations, in terms of continuous improvement, transparency in processes, assurance of the objectives established by the

organizations, customer satisfaction, increased efficiency and productivity in an integrated and conscious manner.

In the agricultural sector, quality systems are oriented more towards product certification, although these schemes increasingly include aspects related to production systems and related processes (Sanabria Neira & Puentes Montañez, 2011).

As for the enterprises belonging to the agricultural sector in the current Cuban context, specifically the agricultural cooperatives, the number of entities that have managed to certify their quality management systems based on the Cuban ISO 9001:2015 Standards is still null. In the opinion of the authors and in agreement with Marín de León and Rivera Rodríguez (2015), Soto Alemán & Figueroa González (2019), Marín de León (2020) and Mirabal González et al. (2022), these entities are called to undertake a necessary path towards the adoption of quality as a function to be performed by all cooperative members and, in particular, by those members elected to occupy management positions, i.e., president of the Board of Directors, economist and other cooperative members, as opposed to the conception of quality as a mere attribute of the agricultural product.

In the opinion of Villegas Chádez (2017), although progress has been made in the process of integrating quality into business management in general, the technical approach to quality predominates and its role as a management function is overlooked, which means that it is not yet part of the subsystems that must be identified in a cooperative and products and services are not conceived in correspondence with the expected levels of satisfaction. Nor is the conduction of this process by managers seen, so as to stimulate learning in them that would transform them into leaders capable of managing the change involved in incorporating quality as a cultural element of the organization (Marín de León & Rivera Rodríguez, 2015).

The study of the quality management process in the Unidad Básica de Producción Cooperativa (UBPC) "Julián Alemán" allowed formulating the following research problem: How to contribute to the improvement of quality management in agricultural cooperative enterprises? A procedure designed for this type of cooperative is proposed, which results in its application served as a basis for improving the levels of effectiveness and efficiency of business management in the aforementioned entity. In accordance with the expected result to contribute to the solution of the formulated research problem, the objective was defined as: to design a procedure for quality management in agricultural

cooperative enterprises that contributes to the progressive integration of this function to the cooperative management.

MATERIALS AND METHODS

For the solution of the problems identified during the research, methods including theoretical ones were used, among which the historical method to analyze the evolution of quality, the analysis-synthesis, which allowed revealing the essential relationships and more general characteristics of quality and cooperative enterprises, stand out. The historical-logical method facilitated the identification of the regularities present in quality management in the selected context and the arrival at conclusions based on the premises required to implement the proposed procedure. Among the empirical procedures used are the measurement to carry out the qualitative diagnosis of the situation to be studied, based on techniques that include documentary analysis, interviews and surveys, among others.

The methodology used (de la Nuez Hernández, 2005) in the empirical diagnosis included the following stages:

1. Determination of information needs: The information needs comprise the analysis about the predominance of the different management approaches to carry out quality management at UBPC, namely: which orientation or philosophy is predominant (inspection, control, assurance, management or total quality management), as well as evidence in the compliance with the quality management principles, emanating from the ISO 9000 series Standards (Customer Focus, Leadership, People Commitment, Process Approach, etc.).
2. Definition of the objective and scope of the diagnosis: The objective of the diagnosis was to identify the limitations in the quality management process at the UBPC level (scope).
3. Definition of information sources: Secondary information sources comprise available documents including minutes of the general assembly, UBPC balance sheets, development program, regulatory documents and others related to the cooperative's agricultural production. As for primary sources of information, they include subjects such as clients, managers and cooperative members in general.
4. Design of formats for collecting information: To collect information, a self-diagnostic questionnaire, a survey to measure the satisfaction of UBPC's current clients and a questionnaire in the form of an interview with members of UBPC's Board of Directors are used.

5. Sample design: The "sample.exe" program was used to determine the sample size for the survey of the entity's clients and workers, which offers a reliability of 95% and a minimum permissible margin of error of 0.10. The sample size determined for clients is 9 subjects (97% of the population to be considered), according to the calculation procedures used. As for the cooperative members, the sample was 43 subjects, which represents 83 % of the population studied.
6. Data collection, analysis and processing of information: In data processing, automated procedures and the expertise of specialists in research techniques are combined.
7. Presentation of the report: Finally, the report of the results is presented.

RESULTS AND DISCUSSION

The Unidad Básica de Producción Cooperativa of blond tobacco "Julián Alemán" represents one of the three types of agricultural cooperatives reaffirmed in Decree-Law No. 365/2019. Created in 1993, it does not escape the imperative of improving its management in order to reach high quality standards in its productions, particularly in Virginia blond tobacco, its main line of business. UBPC's organizational structure includes the General Assembly (GA) as the highest management body, made up of the 5 cooperative members; subordinate to it is the 7-member Board of Directors (president, economist, production manager and four other members elected by the GA). This Board of Directors periodically renders accounts of its acts and decisions to the GA and constitutes the management and administration body of the cooperative between general assemblies, as established in Decree-Law No. 365/2019.

The cooperative's main client is Empresa Integral y de Tabaco Consolación del Sur. At the end of the tobacco season, this enterprise buys all the tobacco production from the cooperative, the rest of the production (sweet potatoes, beans, lettuce, eggplant, mango, corn, beans and peppers), once the contracts with the state (basically represented by the Empresa Integral y de Tabaco and the Empresa Provincial de Acopio) are fulfilled, are sold to individuals or legal entities as established in the aforementioned Decree-Law.

As a result of the application of the questionnaire-self-diagnosis mentioned among the techniques used to characterize the quality management process in the cooperative, the following shortcomings were identified (Castell Catalá & de la Nuez Hernández, 2021):

- Weak knowledge of the environment in which the cooperative operates as a prelude to establishing strategic commitment
- Predominance of a product-oriented culture
- Lack of commitment to quality management by cooperative members
- Predominance of a management philosophy that does not favor the adoption of the process approach as a means for continuous quality improvement
- In a general sense, the quality management approach is lacking, which means that this function is not extended to all stakeholders

In order to contribute to the improvement of quality management in this entity, a procedure comprising six steps was designed and is described below (Figure 1).

Figure 1. Sequence of steps of the procedure
Source: Authors' elaboration

The following is a summary description of the content of each of the steps:

Step 1. Creation of the Quality Commission (CPC in Spanish) and identification of processes

Objective: to establish the conviction that quality management must be led by the Board of Directors and managed by all cooperative members.

Responsible: Board of Directors.

Activities: Design the cooperative's process map from available tools and with the help of a consultant, if the entity decides to do so.

Techniques to be used: contact meetings, brainstorming, process mapping.

Step 2. Establishment of the strategic commitment

Objective: to determine the organization's commitment with respect to its predominant orientation toward planning or toward the strategic direction of the cooperative.

Responsible: Commission for quality, representatives of the different functional areas and the external consultant, if the entity has conceived it.

Activities: Diagnosis of the current situation.

ANALYSIS OF THE ENVIRONMENT

- **External customer analysis**

Objective: to determine the product characteristics that are most decisive in customer acceptance by defining those that can form the basis for its successful differentiation in the market.

Input indicators:

1. Time elapsed from contracting to sale
2. Degree of compliance with the contracts expressed in the requirements (product conformity, price, deadline)
3. Percentage of complaints due to failures in the production process

Output indicators:

1. Number of clients in portfolio
2. Customer satisfaction index
3. Efficiency indicators of the organization and competitors[1]

Techniques to be used: interview, survey of current and potential customers.

[1] This refers to the cooperative's monitoring of the performance of other cooperatives of its type in order to detect opportunities for improvement and differentiation.

- **Supplier analysis**

Objective: to select those that best meet the quality requirements for the establishment of stable and mutually beneficial relationships.

Input indicators:

1. Quality and price of the products/services offered
2. Compliance of deliveries in quantity and date
3. Sources of recruitment and selection of the labor force (taking into account the particular characteristics of the sector)
4. Certification of the quality management system

Output indicators:

1. Degree of supplier concentration
2. Degree of importance of the input or raw material for the entity
3. Level of product differentiation in terms of exclusivity possibilities

Techniques to be used: interview, review of documentation.

- **Competitor analysis**

Objective: to know the organization's position in the environment with respect to others in the sector.

Input indicators:

1. Number of competitors
2. Product quality indicators

Output indicators:

1. Advantage as a source of external competitiveness (product differentiation power)
2. Advantage as a source of internal competitiveness (productivity indicators)

Techniques to be used: interview, survey, benchmarking[2].

[2] The process by which the most effective practices in industry sectors are systematically identified, analyzed and adapted to improve a company's performance.

- **Analysis of external regulations: environmental, health and safety, etc.**

Objective: to identify those regulations that have the greatest influence on quality management and results.

No input or output indicators are established because the results obtained in the checklist used are considered sufficient.

Techniques to be used: documentary analysis (regulatory requirements), questionnaire.

ORGANIZATIONAL ANALYSIS

- **Leadership analysis**

Objective: to analyze whether the organization is committed to the materialization of a democratic management style that conceives participatory decision-making and influences members' motives to align individual values with the cooperative's mission and vision.

Techniques to be used: interview, survey, direct observation, participation of advisors or consultants in assemblies or meetings of the cooperative.

- **Analysis of the leader's role with respect to quality.**

Objective: to know what functions are attributed to and exercised by the members of the Board of Directors in quality management.

Those that are directly related to quality as a management function are analyzed.

Techniques to be used: survey, interview.

- **Internal customer analysis**

Objective: to determine the requirements necessary for the development of knowledge, skills and attitudes (training) of personnel in the process. The degree to which people are motivated or committed to quality management is also analyzed.

Input indicators:

They can be classified into general and job-specific.

Output indicators:

1. Extent to which cooperators are recognized and rewarded for quality work
2. Influence of working conditions on the achievement of quality
3. Use of improvement groups for quality management and improvement
4. Number of workers who increased their qualifications

Techniques to be used: survey, analysis of documentation, analysis of records (training, etc.).

Note: Depending on the particular conditions of the organization, it will be decided whether to evaluate all the suggested input and output indicators.

- **Analysis of the structure**

Objective: to evaluate whether the current structure allows the realization of the quality function as a general function of the organization.

Techniques to be used: interview, analysis of documentation.

- **Analysis of mission, vision, policy and objectives**

Objective: to assess whether the organization's mission and vision, the quality-oriented policy and objectives, and the values to be shared by the members of the organization are defined. The definition of input and output indicators for the analysis of this aspect is not considered relevant, since the information derived from the previous assessment is sufficient.

Techniques to be used: survey, interview, analysis of documentation (Resolution 574/2012).

- **Analysis of compliance with the requirements of the Quality Management System (QMS) according to the Cuban ISO 9001 Standard**

Objective: to verify the degree of compliance with the requirements of the QMS, according to the Cuban ISO 9001 Standard, which will serve to identify evidence as to whether or not quality has been adopted as a general management function.

Techniques to be used: checklist, documentation analysis, group work.

Step 3. Definition of the entity's policy and objectives with respect to quality

Objective: to define the cooperative's policy and objectives aligned with the philosophy adopted to manage quality.

Responsible: Commission for quality and external consultant, if the entity has conceived it.

Activities: Once the strategic plan has been approved by the CPC, it is the responsibility of each area or process to develop and review compliance with its objectives, supervised by the CPC member responsible for each area or process.

Techniques to be used: analysis of documentation, group work.

Step 4. Redefining the organizational structure

Objective: to propose a formal structure that favors quality management as a process of cultural change in the organization.

Responsibility: Commission for quality and external consultant, if the entity has conceived it.

Activities:

- Propose changes to be made to the existing organizational structure
- Assign new responsibilities established for each member of the organization involved at different levels
- Establish the standards of behavior of the members of the organization

Techniques to be used: analysis of documentation, group work.

Step 5. Consolidation of leadership as a quality management principle

Objective: to establish a strong implementation network based on the defined change program that cuts across the organization.

Responsible: Commission for quality.

Activities: This step corresponds to the third phase of the directive cycle (the implementation) and in it the command function is highlighted; the leader at all levels, down to the processes (areas), will make use of the tools that are valid to communicate, motivate and influence the groups integrated by the collaborators or followers to achieve the community of interests that are translated into rules and allow the proposed objectives to be met.

Techniques to be used: group work, training program in topics related to quality management, process mapping (Escaida Villalobos et al., 2016) for the introduction of this approach in the management of the cooperative.

Step 6. Feedback

Objectives:

- Measure the efficiency, effectiveness and efficacy of the application of the procedure
- Serve as feedback for improvement

Responsible: Quality Commission and all cooperators involved in the processes/areas.

In view of the scope of the study indicated for the application of the procedure to be proposed, circumscribed to the production process (agricultural phase), the indicators on which we wish to act to achieve sustainable impacts in the short and medium term in the quality management process (subsystem) are proposed below.

Measurement of effectiveness (results):

- Assessment of *behavioral* change of managers and workers: effectiveness of interpersonal communication, capacity to collaborate, to work as a team, to resolve conflicts, to take advantage of synergy, etc.
- Assessment of the evolution of the main economic and financial indicators: income, profits, cost per weight, sales/ha, average advance payment, etc.

Measurement of internal efficiency (resource utilization):

- Assessment of the evolution of the indicators that seek internal efficiency and, therefore, refer mainly to the resources consumed to obtain a result.

Effectiveness measurement (impact on customer satisfaction):

- Customer satisfaction index: both external (taking into account the proposed methodology, which assumes that all parties interested in the quality of the product are taken into account) and internal (through the results achieved in the integration of personnel in quality management).
- Number of complaints recorded: the main sources include records of complaints or claims, corrective actions and treatment of non-conformities.

After its implementation since 2020, it has contributed to a certain extent to:

- Greater integration and communication between the cooperative's functional areas, as well as the foundations for the development of an action philosophy based on teamwork.
- Raising awareness among managers (Board of Directors) and the rest of the cooperative members about the importance of offering a product that meets customer requirements.
- The improvement of the control function insofar as a more effective record of quality measurement is achieved through the determination of indicators related to five dimensions: reliability, responsiveness, accountability, empathy and tangibility.
- A more objective analysis of the causes of non-conformities detected during audits or reviews of the QMS in order to promote actions that contribute to ensuring the entity's social responsibility towards its environment.

- The last step of the procedure (Feedback) has been improved by specifying other indicators that take into account effectiveness and efficiency as criteria for evaluating quality management.

When evaluating the results of the implementation of the procedure according to the indicators defined for each criterion, the following is summarized:

Measurement of effectiveness (impact):

- External customer satisfaction index: from 0.35 (2021) to 0.75 (2022)
- Number of registered complaints: from 15 (2021) to 5 (2022)

Measurement of effectiveness (results):

- Sales/ha: from $19459.16 (2021) to 42633.66 (2022)
- Average advance payment: from 720 (2021) to 982 (2022)

Efficiency measurement (use of resources), in thousands of pesos (MP):

- Energy carriers: Plan (2021) 108 MP vs. Actual (2022) 63.6 MP
- Raw materials and materials: Plan (2021) 263.6 MP vs. Actual (2022) 182.2 MP
- Total expenditures: Plan (2021) 1833.7 MP vs. Actual (2022) 1598.9 MP

The analysis of the bibliography consulted shows that the main references associated with quality management in agricultural cooperative enterprises suggest that quality has evolved from a management perspective emphasizing control to a more integral approach in which total management of this function and leadership as a fundamental principle, centered on personnel, processes and the client, should predominate. It is key to incorporate quality as a function of all members of the organization and in this process the most appropriate style of influence is democratic, with participative decision making.

The results of the diagnosis carried out in the organization under study show that the deficiencies found in the quality management process in the cooperative are largely associated with poor performance in key areas such as customer orientation, leadership, people's commitment, as well as a predominantly hierarchical-functional approach that does not favor the integration of this function into the entity's general management system.

The design of a procedure to manage quality at the cooperative level that contributes to the adoption of quality as a general management function and to improve other business management indicators. Finally, the implementation of the proposed procedure has, to a large extent, favored the achievement of better results in management efficacy, effectiveness and efficiency, which is expressed in the increased level of customer and worker satisfaction and in the satisfactory fulfillment of other indicators linked to the deployment of this function in the production process (agricultural phase) in particular.

REFERENCES

Antúnez Saiz, V. I. (2016). Sistemas integrados de gestión: De la teoría a la práctica empresarial en Cuba. *COFIN Habana*, *10*(2). https://revistas.uh.cu/cofinhab/article/view/1066

Camisón Zornoza, C., Cruz Ros, S., & González Cruz, T. F. (2006). *Gestión de la calidad: Conceptos, enfoques, modelos y sistemas*. Pearson Educación. https://dialnet.unirioja.es/servlet/libro?codigo=708990

Castell Catalá, A., & de la Nuez Hernández, D. (2021). Diagnóstico del subsistema calidad en la Unidad Básica de Producción Cooperativa «Julián Alemán». *Cooperativismo y Desarrollo*, *9*(2), 689-711. https://coodes.upr.edu.cu/index.php/coodes/article/view/424

Consejo de Estado de la República de Cuba. (2019). *De las cooperativas agropecuarias* (Decreto-Ley N.º 365/2018). Gaceta Oficial de la República de Cuba, Edición Ordinaria No. 37. https://www.gacetaoficial.gob.cu/es/decreto-ley-365-de-2018-de-consejo-de-estado

de la Nuez Hernández, D. (2005). *Modelo de gestión de la calidad basado en el liderazgo como valor instrumental aplicado en empresas de proyectos* [Doctorado en Ciencias Económicas, Universidad de Pinar del Río «Hermanos Saiz Montes de Oca»]. https://rc.upr.edu.cu/jspui/handle/DICT/3400

Escaida Villalobos, I., Jara Valdés, P., & Letzkus Palavecino, M. (2016). Mejora de procesos productivos mediante lean manufacturing. *Trilogía*, *28*(39), 26-55. https://trilogia.utem.cl/ediciones/volumen-28-no39-2016/

Espinosa Espinel, J. D., & Parra Ferié, C. (2020). Gestión de la calidad en los servicios de atención al cliente. Caso Cooperativa Chone Ltda. *Polo del Conocimiento*, *5*(8), 42-65. https://doi.org/10.23857/pc.v5i8.1569

Fontalvo, T. J., Delahoz Domínguez, E. J., & Morelos, J. (2021). Diseño de un sistema integrado de gestión de la calidad para programas académicos de educación superior en Colombia. *Formación universitaria*, *14*(1), 45-52. https://doi.org/10.4067/S0718-50062021000100045

González Contreras, E. J., & de la Nuez Hernández, D. (2020). Metodología para el desarrollo del sistema de gestión de la calidad en empresas recicladoras de materias primas. *Observatorio de La Economía Latinoamericana*, *18*(1). https://observatoriolatinoamericano.com/ojs/index.php/olel/article/view/122

Marín de León, I. (2020). El sector cooperativo y su articulación con la gestión gubernamental. *Cooperativismo y Desarrollo*, *8*(3), 362-366. https://coodes.upr.edu.cu/index.php/coodes/article/view/402

Marín de León, I., & Rivera Rodríguez, C. A. (2015). Modelo de Gestión Pública para el desarrollo del sector cooperativo a escala municipal. *Avances*, *17*(1), 46-56. http://www.ciget.pinar.cu/ojs/index.php/publicaciones/article/view/19

Mirabal González, Y., Marín de León, I., Ojeda Mesa, L., Labrador Machín, O., & Torres Paez, C. C. (2022). Gestión de empresas cooperativas y su contribución al desarrollo local en Cuba. *Anales de la Academia de Ciencias de Cuba*, *12*(2), e1162. https://revistaccuba.sld.cu/index.php/revacc/article/view/1162

Sanabria Neira, N. C., & Puentes Montañez, G. A. (2011). Sistema de gestión de calidad para el agronegocio de la uchuva en el municipio de Ventaquemada. *Revista de Investigación, Desarrollo e Innovación*, *1*(2), 28-39. https://revistas.uptc.edu.co/index.php/investigacion_duitama/article/view/1300

Soto Alemán, L., & Figueroa González, J. M. (2019). Buenas prácticas cooperativas en Cuba. *Deusto Estudios Cooperativos*, (14), 95-120. https://doi.org/10.18543/dec-14-2019pp95-120

Villegas Chádez, R. (2017). El perfeccionamiento de las UBPC y el relanzamiento del cooperativismo dentro del proceso de actualización del modelo económico cubano. *REVESCO. Revista de Estudios Cooperativos*, *124*, 215-229. https://doi.org/10.5209/REVE.54920

Conflict of interest

Authors declare that they have no conflicts of interest.

Authors' contribution

Diana de la Nuez Hernández: Research conception and design. Data analysis and interpretation. Article writing and revision.

Ariel Castell Catalá: Data acquisition.

Both authors reviewed the writing of the manuscript and approved the version finally submitted.