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## PRE-STRUCTURED MODEL IN ERGONOMICS: APPLICATION OF THE ACTION CHECKPOINT FOR AGRICULTURE ON A RURAL PROPERTY IN THE AMAZONIA

### MODELO PRÉ-ESTRUTURADO EM ERGONOMIA: APLICAÇÃO DO ACTION CHECKPOINT FOR AGRICULTURE EM UMA PROPRIEDADE RURAL NA AMAZÔNIA

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#### ABSTRACT

This study aims to apply Action Checkpoint for Agriculture on a rural property located in the municipality of Itacoatiara/Amazonas/Brazil. Regarding the approach to the problem, this study is characterized as quali-quantitative and exploratory with regard to the objectives. Regarding the technical procedures for data collection, this is a case study. The research techniques used to operationalize the study were: indirect documentation (bibliographic research); intensive direct observation (in loco observation and interview); and extensive direct observation (form). Among the main results of the research stand out: identification of the main ergonomic aspects related to the studied property; the enterprise's need to adapt to regulatory standards and other ergonomic aspects; an indication of points for improving the productive environment; and building recommendations for future improvements. The relevance of the research resides in the application of

the instrument (Action Checklist for Agriculture) essential to support rural properties in the identification of points for the improvement of the working environment in the traditional sector of the economy.

#### RESUMO

Este estudo tem o objetivo de aplicar o *Action Checkpoint for Agriculture* em uma propriedade rural localizada no município de Itacoatiara/Amazonas/Brasil. Com relação à abordagem do problema, esse estudo caracteriza-se como quali-quantitativo e exploratório no que diz respeito aos objetivos. No que tange os procedimentos técnicos para coleta de dados, trata-se de um estudo de caso. As técnicas de pesquisa utilizadas para operacionalização do estudo foram: documentação indireta (pesquisa bibliográfica); observação direta intensiva (observação in loco e entrevista); e observação direta extensiva (formulário). Entre os principais resultados da pesquisa destacam-se: identificação dos principais aspectos ergonômicos relacionados a propriedade estudada; necessidade da empresa em adequar-se às normas regulamentadoras e outros aspectos ergonômicos; indicação de pontos para melhoria do ambiente produtivo; e construção de recomendações para futuras melhorias. A relevância da pesquisa reside na aplicação do instrumento (*Action Checklist for Agriculture*) essencial para apoiar as propriedades rurais na identificação de pontos para a melhoria do ambiente de trabalho em setor tradicional da economia.



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## 1. INTRODUCTION

The context of the current crisis that touches all dimensions of social life raises new questions, but also new demands related to technological, economic, social and cultural transformations and mutations. The concept of work becomes complex from the moment that their practices vary according to the situation, time and society. Ergonomics seeks to pursue and gather the knowledge obtained in different scientific fields, where on the one hand it aims to preserve its scientific, social and institutional origins and, on the other hand, to make its construction based on the revision of the perspectives of the classic model, according to its fundamental propositions (Kerbal, 1999; Tersac & Maggi, 2004).

Ergonomics is the study of aspects of human activity that aims to demonstrate knowledge about work, using examples for a better understanding of the concepts in the area. It can be related to both so-called “ergonomic” objects (such as mice, keyboards and chairs) and work-related diseases, such as Occupational Disease or Repetitive Strain Injury (RSI). It is a science applied to the design of machines, equipment, systems, and tasks, to improve safety, health, comfort and, efficiency at work. It is based on knowledge from other scientific areas, gathering and integrating the relevant knowledge of those areas and developing specific methods and techniques to apply this knowledge in improving work and living conditions, both for workers and the general population (Abrahão, et al., 2009; Dul & Weerdmeester, 2004).

According to the International Ergonomics Association (2019), there are three areas of specialization in ergonomics: (1) physical ergonomics, related to the anatomical, anthropometric, physiological and biomechanical characteristics related to physical activity; (2) cognitive ergonomics, related to mental processes, such as perception, memory, reasoning and motor response, as they affect the interactions between human beings and the other elements of a system; and (3) organizational ergonomics, deals with the optimization of socio-technical systems, including their organizational structures, policies, and processes.

Occupational health and safety encompass the social, mental and physical well-being of workers based on health and safety measures that require collaboration and participation by both employers and workers in health and safety programs, forcing them to address issues related to occupational medicine, hygiene at work, toxicology, safety engineering, ergonomics, among others. In other words, poor working conditions affect the health and safety of workers (Bureau Internacional do Trabalho, 2009).

The International Labor Office (ILO) and the International Ergonomics Association (IEA) developed the Action Checklist for Agriculture instrument. The checklist is a short version of Ergonomics Checkpoints in Agriculture to be used in small rural properties, comprising 31 actions with ideas for low-cost improvements. The objective is to evaluate the existing working conditions and enable the implementation of improvements in the different situations considered in the form (International Labor Office & International Ergonomics Association, 2014).

Therefore, this study aims to apply Action Checkpoint for Agriculture on a rural property located in the municipality of Itacoatiara/Amazonas/Brazil. The work is structured in three



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parts, namely: (1) literature review working on the concepts of ergonomics and ergonomic action, in addition to presenting the rapid diagnosis methodologies and the main pre-structured models; (2) methodology and (3) results, recommendations, conclusion, and references. The relevance of the research resides in the application of the instrument (Action Checklist for Agriculture) essential to support rural properties in the identification of points for the improvement of the working environment in the traditional sector of the economy.

## 2. LITERATURE REVIEW

### 2.1 ERGONOMIC AND ERGONOMIC ACTION

Ergonomics is the use of scientific knowledge related to man and necessary to design instruments, machines, and devices that can be used by the greatest number of people, with maximum comfort, safety, and efficiency. It seeks to influence the design and redesign of the means of work, through recommendations made after an analysis of the environment. The conception of the means of work implies complex processes that the ergonomist must learn to know and participate in order to influence them and obtain significant results (Curie, 2004; Daniellou, 2007).

It is concerned with working conditions, observing unfavorable tools or production situations, getting involved in the design processes. To conceive is to observe that a change needs to be made and to operate it, according to the objective, direction, and direction of the process, thus being able to transform it. It covers various administrative sectors that work together to improve working conditions. Its contribution is classified in (1) conception, (2) correction, (3) awareness and (4) participation (Béguin, 2007; Iida, 2005).

Regarding ergonomic action, its main purpose is to transform work, so that it can contribute to the design of work situations that do not interfere with the health of operators, where they can perform their skills, individually or collectively, valuing the capabilities, in addition to achieving the economic objectives determined by the enterprise. It is based on the ability to mobilize knowledge and methods adapted to each situation. A characteristic of any ergonomic intervention is that it aims at action, not being content with the production of knowledge about work situations. It aims at a “solution” to a “problem” in itself to be defined, this problem does not depend only on the initial demand, it is influenced by the ergonomist and his analysis of the demand (Guérin, et al., 2001; Daniellou & Beguin, 2007; Falzon, 2007).

The ergonomic action should contribute (1) to the structuring of a point of view on the work that causes questions of a different nature and causes new problems to emerge; and (2) dealing with problems in a joint and negotiated manner, thus contributing to the evolution of social relations in the enterprise. It happens from a demand that can come from different interlocutors; the analysis and reformulation of the demand represent fundamental work in the conduct of the process. In projects, ergonomic action presupposes a technical construction based on the analysis of the activity and social construction, that is, a participative project structure, based on the involvement of operators and other persons responsible for the production (Guérin, et al., 2001; Lima & Duarte, 2014).

Finally, among all the components of the ergonomic action, the one that receives less attention is the prescription. The prescription involves all the factors of ergonomic



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intervention, where any action by the ergonomist can imply near or far in the design of products and work situations. Writing prescriptions raises the level of importance of ergonomists, who are most often led to work with architects, designers, engineers or other technical specialists and who, even today, still have mastery over the design of work situations and products (Lamonde, 2007).

## 2.2 QUICK DIAGNOSIS METHODOLOGIES

The Short Diagnosis was developed in France in 1990 by ANACT (National Agency for the Improvement of Working Conditions) to serve small and medium-sized French companies (Deltor & Guérin, 1994).

In Brazil, Silva (2007) applied the Short Diagnosis to a medium-sized enterprise in the sector of manufacturing remolded tires together with Ergonomic Checkpoints (Fundacentro, 2001) and the postural analysis tool "OWAS". In an article, Assunção, et al., (2010), described working conditions in micro and small companies in the food and beverage sector and assessed workers' health and workability by analyzing social security data and periodic medical examination records. In order to observe working conditions, the authors prepared technical sheets for the application of the Short Diagnosis in the 32 companies involved in the study.

Costa, et al., (2015), presented a Rapid Diagnosis Methodology (MDR) in ergonomics to evaluate a set of platforms allowing to reveal general principles to systematize situations that should improve and understand broad processes. The main advantage of the application of MDRs is the return of results to social actors more quickly, being an effective instrument for the construction of strategic actions in ergonomics. Coelho, et al., (2015) carried out the application of the Short Diagnosis in a small clothing store located in the city of Manaus. The authors point out the ease with which the approach can be applied, enabling the knowledge of the enterprise in a short period of time, in addition to providing insights for future projects.

At last, Aract (2009) developed Elvie, a tool for diagnosis and prevention of work situations related to psychosocial risks. Psychosocial risks result from the action and the combination of professional determinants together with the constraints of work. These types of risks include stress, suffering, violence, and harassment in the workplace. Elvie is built in three parts: (1) expression of the problem, (2) analysis of the determinants of the problem and (3) understanding of the experience of the actors linked to the problem.

## 2.3 PRE-STRUCTURED MODELS

Pre-structured models are tools for analyzing jobs, serving as verification plans for ergonomists to orient themselves during ergonomic assessments. They are based on ergonomic principles and are simple, objective and low-cost application tools (Costa, 2014). Among the best-known methods are the NIOSH, RULA, REBA and OWAS method.

The NIOSH (National Institute for Occupational Safety and Health) equation was created to estimate the limit weight oriented in repetitive load lifting activities. The recommended values are obtained through the lifting capacity of a certain height, as well as a vertical displacement, without any physical damage. This method is widely used in the analysis of cargo surveys,



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with the exception of certain activities that cannot be evaluated, due to the difficulty presented (Iida, 2005; Teixeira, Okijimoto & Gontijo, 2011).

The RULA method - Rapid Upper Limb Assessment, was created to be used in ergonomic research in the work environment that offered risks to the upper limbs. The development of this method provided a quick search for risk factors, muscular effort and the results obtained contribute significantly to a broader assessment, considering physical and mental factors, among others (Cardoso Júnior, 2006).

Using tables and diagrams, Serranheira & Uva (2010), affirm that the RULA is a relatively easy method to be applied, and its validation occurs through the comparison of the values obtained and the report of the worker about the discomfort. The method has a quick assessment, without the need for complex tools, and this comparative assessment of the values determines the levels of intervention, prioritizing the scores with values that indicate the need for corrective actions (Pavani, 2007).

The REBA method - Rapid Entire Body Assessment, was developed to analyze work postures, repetitive activities, types of movements, among others. The present method assesses static and dynamic postures, in addition to the changes in postures that each involves. The body analysis is done in stages, with a single posture for each one, guiding the observer on the need (if any) for mitigating actions on inappropriate postures (Hignett & Mcatamney, 2000).

The OWAS - Ovako Working Posture Analysis System method was developed to analyze the inadequate postures that cause disturbances and deficiencies in the spine. Considered a simple method, it uses photographs, dividing the activity into stages to analyze the postures adopted at work, except vibration, requiring little observation time. The results obtained are considered satisfactory, as it presents an improvement in the jobs, making it comfortable, significantly improving production, so this method is useful for vertical positions, as it indicates the postures that can lead the employee to leave the enterprise due to excessive efforts (Karwowski & Marras, 2019).

The International Labor Office (ILO) and the International Ergonomics Association (IEA) developed the Action Checklist for Agriculture instrument. The checklist is an instrument developed specifically for agricultural production processes and presents practical solutions for improving agricultural work and rural life from an ergonomic point of view (ILO & IEA, 2014).

Checkpoints summarize essential actions and can be used as a starting point for the design of particular workplaces. The manual is used to assess existing working conditions and to implement improvements in different situations (ILO & IEA, 2014).

### **3. METHODOLOGY**

#### **3.1 RESEARCH DESIGN**

Regarding the approach to the problem, this study is characterized as qualitative, in the qualitative approach the subjective reality of the individuals involved is considered relevant, contributing to the development of the research. This reality can interfere with the



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development of research by building an objective reality. Qualitative research uses a set of interpretation techniques that aim to describe, decode and translate the understanding of a given phenomenon, with an emphasis on the subjective interpretation of the individual (Miguel, 2012).

Qualitative research tends to collect data in the field where the participants' experiences are the question or problem of the study. The information is collected directly from the people involved and / or by observing the actions of these people within the context of the research. Qualitative research is based on examining documents, observing behavior or interviewing participants (Creswell, 2009).

In relation to the objectives, there is exploratory research. Exploratory research aims to provide greater familiarity with the problem in order to make it explicit or to build hypotheses (Silva & Menezes, 2005).

In conclusion, with regard to technical procedures for data collection, this is a case study. The case study seeks to examine contemporary events where the behavior of the research subjects cannot be manipulated, having a generalized character to the theoretical prepositions. Thus, it aims to expand and generalize theories and not populations and universe (Yin, 2001).

The case study is a methodological procedure in which it examines a phenomenon as a whole, employing multiple data collection methods to collect information from one or a few entities, such as people, groups or organizations (Benbasat, et al., 1987).

### **3.2 APPROACH USED IN RESEARCH**

The approach used the Action Checklist for Agriculture instrument, developed by the International Labor Office (ILO) and the International Ergonomics Association (IEA). The checklist is an instrument developed specifically for agricultural production processes and presents practical solutions for improving agricultural work and rural life from an ergonomic point of view (ILO & IEA, 2014).

Checkpoints summarize essential actions and can be used as a starting point for the design of particular workplaces. The manual is used to assess existing working conditions and to implement improvements in different situations (ILO & IEA, 2014).

The checklist consists of 31 ergonomic checkpoints considering six items of analysis: (1) materials storage and handling; (2) workstation design and work tools; (3) machine safety; (4) work environment and control of hazardous agents; (5) welfare facilities; and (6) work organization.

### **3.3 METHODS FOR DATA COLLECTION**

The research universe consisted of a small rural property located in the municipality of Itacoatiara, in the state of Amazonas/Brazil. The surveyed sample was of an intentional non-probabilistic character. According to Marconi & Lakatos (1990), intentional non-probabilistic sampling seeks the opinion of certain elements of the population, that is, of a representative of a specific social body.



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The research techniques used to operationalize the study were: (1) indirect documentation (bibliographic research); (2) intensive direct observation (on-site observation and interview); and (3) extensive direct observation (form).

The interviews took place in a semi-open manner (Vergara, 2009) with farmers, family members and employees based on a script based on Guérin, et al., (2001) in which fundamental information was identified to complement the checkpoint form. The structured observation was based on the methodology of Guérin, et al., (2001), which deals with the global observation of an organization where the observer performs an analysis of the tasks and the main process, considering the observables, such as gestures, postures, actions, and communications between everyone involved in the production process of the Rural property.

### 3.3 METHODS FOR DATA ANALYSIS

The qualitative data obtained from the form responses were grouped according to the content and stratified according to the instrument's structure. The information obtained from observables and verbalizations was integrated and triangulated with the information collected in the interview in order to guarantee the rationalization and validation constructed.

The discourse analysis technique helped to understand the information. Discourse analysis aims not only to apprehend how a message is transmitted but to explore its meaning. Analyzing the speech considers both the sender and the recipient of the message, in addition to the context in which the speech is inserted (Vergara, 2006).

## 4. RESULTS

### 4.1 CHARACTERIZATION OF RURAL PROPERTY

The rural property is located in the municipality of Itacoatiara/Amazonas/Brazil. It is an enterprise founded in 2016, with the objective of planting pineapples (Figure 1) by using other smaller crops to rotate the cultivated area, in addition to using more modern machinery than its local competitors.

**Figure 1:** Pineapple plantation of the studied rural property.



Source: Own elaboration.

The initial difficulties faced were the lack of guidance on activities, problems with financing and infrastructure, but currently, the enterprise faces problems with pests (Figure 2) and with



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the need to increase productivity. The initial branch of the enterprise was the production of fish in captivity (fish farming). The enterprise consists of ten permanent employees, nine men, and one woman.

**Figure 2:** Weeds that attack the pineapple plantation.



Source: Own elaboration.

## 4.2 ACTION CHECKLIST FOR AGRICULTURE APPLICATION

### 4.2.1 Materials Storage and Handling

In any production system, industrial or agricultural, the producer is always faced with the problem of material handling. The necessary raw material has to be transported to the production site or to the machinery and equipment and, after the completion of the production processes, the finished products have to be transported from the production site or from the machines for storage or distribution, and it is necessary to keep the passage in good condition for the movement of materials and people.

The studied property is concerned with maintaining its passageways in adequate conditions, to provide better access and movement of materials and people, and thus improve the efficiency of the production system. At the planting site, there is no difference in height in the transport routes, so there is no need to eliminate the differences. The construction of bridges is not feasible for the property since the site does not have channels or ditches, being a flat terrain.

As for the storage of tools, materials, and products, the property makes use of multi-level shelves close to the work area, but the objects are arranged at random, which makes it difficult to find when necessary. In that case, an intervention is proposed. On the property, there are baskets with handles of suitable sizes, which serve to store and transport the products when separated for distribution, without the need for intervention.

For the transportation of materials and products, a motorcycle with an adapted cart is used, facilitating locomotion (Figure 3). In this case, there is no need for intervention. In places with difficult access, baskets on the head are used to collect and transport pineapples (Figure 3).





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**Figure 3:** Motorcycle used in the enterprise and pineapple collection activity.



Source: Own elaboration.

#### 4.2.2 Workstation design and work tools

The property does not provide bench height adjustment so that the work is carried out at elbow level or slightly lower, and not even stable chairs or benches with a resistant back. Thus, it is proposed to the owner that an intervention be made with priority.

The tools, switches and most used materials are not available to workers, and the tools do not have a defined location, it is essential that there is an intervention. Clamps, jigs and even lamps are not used to store items while the work is being carried out.

#### 4.2.3 Machine safety

The property does not have adequate protections for dangerous moving parts of the machines, and there is no power device to prevent hazards and increase production. The emergency controls are not clearly visible, and there are no labels on the controls or switches. The motorcycle used in the enterprise meets safety standards.

#### 4.2.4 Work Environment and Control of Hazardous Agents

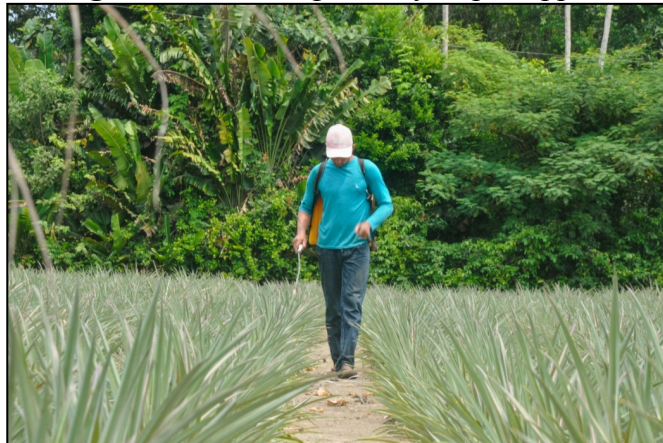
In the place where the work is carried out, there is natural ventilation, considering that it is a shed, without walls on the sides, which provides a pleasant climate for workers. Just as the workplace provides natural ventilation, the workplace also has good lighting during the day. However, workers are exposed to the Amazonian heat mainly due to the activities of cleaning, fertilizing and harvesting pineapples.

About the storage of pesticides, the enterprise has specific locations for them, in addition to properly identifying them and allocating them and a signposted location. However, it was observed that employees in fertilization activities do not use PPE (personal protective equipment) properly (Figure 4).



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**Figure 4:** Fertilizing activity of pineapples.



Source: Own elaboration.

#### 4.2.5 Welfare Facilities

There is no adequate cafeteria on the property that meets the needs of employees for drinking water or similar. Employees provide their own bottle of water or the like; the toilets are clean and sanitized, however, there are no bathing facilities. The enterprise also provides a suitable place to rest and recover from employee fatigue. The enterprise does not provide adequate equipment, such as clothing, gloves, boots, shoes, hats, helmets for protection from injuries, nor first aid equipment. All of this material is provided by employees.

#### 4.2.6 Work Organization

The studied property does not present an organization of an adequate work layout, with equipment and tools centralized in the shed generating unnecessary displacements. that reduces the distance of the materials. Workers have short breaks to periodically aim to avoid fatigue and excessive exposure to climatic factors, in addition to helping individual productivity.

Each employee performs all activities related to the planting of pineapples and other auxiliary crops. The loading is carried out by the enterprise's employees (Figure 5) in an outsourced truck that buys the goods from the farmer and transports them for sale in the city of Manaus.

**Figure 5:** Pineapple loading activity.



Source: Own elaboration.



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## **5. RECOMMENDATIONS**

After applying the action checklist for agriculture, the following recommendations are indicated for improving the work environment and the quality of life of employees.

### **5.1 MATERIALS STORAGE AND HANDLING**

It is suggested to implement a shed with shelf divisions with different sizes and levels close to the work area to store the materials, tools, and products used on the property, in addition to providing containers or baskets with handles of varying sizes, for transporting agricultural materials and products.

It is recommended to adopt the 5S Program (Hirano, 1995; Kumar & Kumar, 2012; Singh, Rastogi & Sharma, 2014) to organize the area where the tools, materials, and products are located. It is necessary to apply the Ergonomic Work Analysis (EWA) for the pineapple collection activity (Guérin, et al., 2001). It can be complemented with the application of pre-established methods of ergonomic intervention, such as the NIOSH method (National Institute for Occupational Safety and Health, 1997), OWAS - Ovako Working Posture Analysis System (Karwowski & Marras, 2019) and REBA - Rapid Entire Body Assessment (Hignett & Mcatamney, 2000).

### **5.2 WORKSTATION DESIGN AND WORK TOOLS**

It is necessary to provide the adjustment of the benches at the elbow height to facilitate the work of the employee. In the nursery, a specific location must be installed for each tool, aiming at maintaining an adequate organization improving the handling of materials.

It is suggested to adopt chairs for employees to work during the pineapple classification process that takes place before loading. Produce or purchase cabinets or shelves for proper allocation of the equipment used.

### **5.3 MACHINE SAFETY**

The enterprise needs to comply with the regulatory standard NR-12 (Brasil, 1978b) that deals with safety in machinery and equipment in order to guarantee the health and physical integrity of workers. It is necessary to adapt to the enterprise's machinery for the development, adaptation, and implantation of safety devices for the machines and equipment used in the enterprise.

### **5.4 WORK ENVIRONMENT AND CONTROL OF HAZARDOUS AGENTS**

It needs to provide an adequate deposit to store pesticides, agrochemicals and spraying devices safely, being ventilated, without humidity, with shelves to avoid contact with the soil. The owner must collect information on safety and health, such as the safe use of agrochemicals and disseminate the information to the community, in the form of pamphlets.

The enterprise needs to train and educate its employees on the use of PPE (personal protective equipment) in compliance with Regulatory Standard NR-6 (Brasil, 1978a).



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## 5.5 WELFARE FACILITIES

The enterprise must provide adequate uniforms, such as clothes, gloves, boots, shoes, hats, conforming to NR-6 (Brasil, 1978a) in order to provide the PPE and inspect the use of it by the employees.

## 5.6 WORK ORGANIZATION

It was necessary to carry out a layout study using the Spaghetti Diagram to reduce employee travel and distribute the tools at strategic points of the plantation.

Ergonomic Work Analysis (EWA) of pineapple loading activity is recommended, similar to harvesting activity. Again, it is necessary to complement the application of pre-established methods of ergonomic intervention, such as NIOSH, OWAS, and REBA, in addition to adapting to NR-17 (Brasil, 1978c) that deals with ergonomic aspects.

As for the quantitative investigation of the labor situation, the use of FMEA (Failure mode and effects analysis) is indicated as a tool for risk analysis for systems and processes, enabling a hierarchy of occupational risks (Cavaignac & Forte, 2018). FTA (Fault Tree Analysis) can be used to analyze products and processes that allow a systematic and standardized analysis of possible failures and guiding the adoption of preventive or corrective measures (Helman & Andery, 1995). Finally, the Preliminary Risk Analysis (PRA) can be used to characterize the risks existing in the enterprise's environment, indicating the probability, levels, and intensities of the risks that may arise (De Cicco & Fantazzini, 1994).

## CONCLUSION

The application of the action checklist for agriculture carried out in the enterprise indicated important points that must be corrected, even if the enterprise does not present direct competition in the local market, measures must be taken so that the flaws found in the property are corrected, as well as providing quality of service. work-life to its employees. Thus, it is believed that the objective of the work was achieved.

Among the main results of the research, we highlight (1) identification of the main ergonomic aspects related to the studied property; (2) ease and practicality in applying the checklist in the enterprise's environment; (3) the enterprise's need to adapt to regulatory standards and other ergonomic aspects; (4) indication of points for improving the productive environment; and (5) building recommendations for future improvements.

In general, the enterprise needs to comply with Regulatory Standard NR-31 (Safety and Health at Work in Agriculture, Livestock, Forestry, Forestry, and Aquaculture) aiming at compatibility between the planning and development of activities with safety, health, and working environment according to Brasil (2005).

Concerning the methodology adopted in the study, the Action Checklist for Agriculture proved to be an easy and practical application tool that could assist companies and rural properties in improving their jobs. The instrument proved to be effective in pointing out practical solutions for improving rural work as indicated in ILO & IEA (2014).



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In relation to the literature review, the study is in line with the work of Curie (2004) and Daniellou (2007) with regard to the role of ergonomics in influencing the design and re-conception of the work environment, concerned with working conditions in more diverse productive environments (Béguin, 2007; Iida, 2005). The research was an ergonomic action regarding the ability to mobilize knowledge from different areas, with the objective of the action, not only content in the production of knowledge, but in the search for solutions in the environment of the studied property, corroborating Guérin, et al., (2001), Daniellou & Béguin (2007) and Falzon (2007).

Action Checkpoint for Agriculture proved to be an adequate instrument for its objective of evaluating working conditions, enabling the implementation of improvements (ILO & IEA, 2014) and adjusting the characteristics of the pre-structured models in what regards their use as verification plans to guide ergonomists during evaluations and ergonomic interventions (Costa, 2014).

As a limitation of the research is the application of the checklist is only one property and the owner did not provide the necessary data for further deepening of ergonomic issues, therefore, it is suggested for future research the extension of the application of such instrument to other properties or even the creation of a local program or policy for the adoption and application of the instrument in several properties in the municipality. Additionally, studies such as market demand, product output, and enterprise logistics deserve extra attention, always aiming at the well-being of employees and the enterprise's productivity. The application of Ergonomic Work Analysis (EWA), pre-structured models such as NIOSH, OWAS and REBA, and techniques that involve risk analysis (FMEA, FTA, and PRA) may enrich future studies.

Hence, the property needs improvement in its ergonomic aspects, but still, it manages to profit from the activities performed. With the correction of these flaws, it tends to leverage its sales and even become a well-known enterprise in national and international trade, considering the peculiarities and the interest in Amazonian products, considering that you offer quality products, with quantity and affordable price. The relevance of the research resides in the application of the instrument (Action Checklist for Agriculture) essential to support rural properties in the identification of points for the improvement of the working environment in the traditional sector of the economy.

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