

Application of the 5S Program in a fruit pulp industry

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ABSTRACT

5S is a tool that brings several short- and long-term benefits to the workplace, renewing the concepts of organization and productivity, due to its simplicity and low cost (BUSANELLO, 2013).

Keywords: 5S Program, Industry, Fruit pulp.

INTRODUCTION

5S is a tool that brings several short- and long-term benefits to the work environment, renewing the concepts of organization and productivity, due to its simplicity and low cost (BUSANELLO, 2013).

The twenty-first century has contributed to the growth of companies through new technologies, modernization concepts, based on the changes that involve the 5S Program, called the following senses: *SEIRI* (utilization), *SEITON* (organization), *SEISOU* (cleaning), *SEIKETSU* (health) and *SHITSUKE* (self-discipline). For Rios (2016), we live in an era where the consumer has more and more power of choice and decision, through a scenario with offers of the most varied types of products and services. The company that wants to survive the competition and stand out under these circumstances, needs to seek to satisfy its customers more and better, and one of the ways to achieve this goal is through continuous improvement, and thus, quality improvement is becoming a permanent concern for companies.

Changes in the industry happen at a time when managers and employees excel in changing organization, order, cleanliness, standardization and discipline. In this way, Rios (2016) justifies that the 5S Program manages to be quite comprehensive in its applicability, and can be disseminated in large and small companies or even in day-to-day practices. This is because the program is simple to understand and apply, being able to produce expressive results in a relatively short time. Among the various results that can be achieved with the effective implementation of the five senses are the improvement of employee morale, the reduction of the accident rate, the improvement of quality and productivity, the reduction of downtime in processes and the exercise of participatory management, where all employees have the opportunity to participate effectively.

According to Cunha (2012), a well-developed system of organization is nothing more than taking advantage of the useful and getting rid of the useless, thus reducing the time of searching for equipment

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and documents, improving the work system. In view of the author's thought, the research presents the following problem: what are the changes in the fruit pulp industry, from the application of 5S?

To keep up with the changes that involve organization, order, cleanliness, standardization and discipline, the general objective seeks to discuss the benefits of the application of 5S in a fruit pulp industry. For the specific objectives, the research seeks to identify the concepts of the senses, present the characterization of the 5 senses for application in industries and identify the essential tools in the application of the 5S.

The methodology applied in the research was developed through the collection of information, through bibliographic reviews with a qualitative approach, "which seeks very specific and detailed questions, being concerned with a level of reality that cannot be measured and quantified" (MARTINS, 2013).

OBJECTIVE

The general objective seeks to discuss the benefits of the application of 5S in the fruit pulp industry. For the specific objectives, the research seeks to identify the concepts of the senses, present the characterization of the 5 senses for application in industries and identify the essential tools in the application of the 5S.

METHODOLOGY

The research was developed from the on-site visit, at the Company CEIA Ceará Industrial de Alimentos LTDA ME, headquartered in the District of Forquilha, Municipality of Beberibe, on June 16 of the current year, in order to get to know the company's facilities, recording through photos of the entrance of the raw material, waste packaging area, pulp bottling, production inlet, fruit sanitation and toilets.

Therefore, the methodological procedures were developed through the foundation of the authors Marconi, Lakatos (2010) and Martins (2013), based on the concepts of bibliographic research with a qualitative approach, directed to the changes favorable to the company CEIA Ceará Industrial de Alimentos LTDA ME, after the application of the 5S.

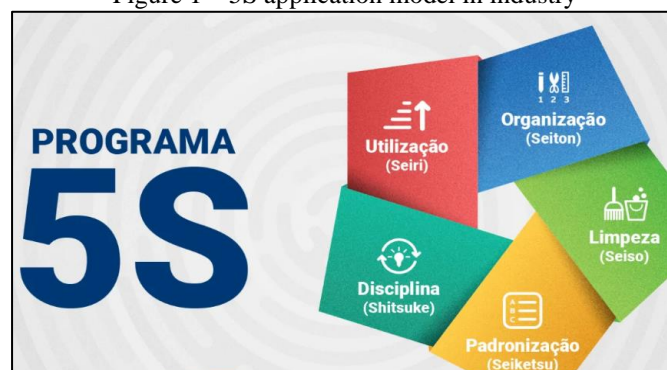
For Martins (2013), qualitative research "seeks very specific and detailed questions, being concerned with a level of reality that cannot be measured and quantified". The author also adds that it acts based on meanings, reasons, desires, beliefs, values, attitudes and other subjective characteristics of the human being that cannot be limited to numerical variables.

As for bibliographic research, Marconi and Lakatos (2010, p. 57) mention that it "encompasses all bibliography already made public in relation to the subject of study" and "its purpose is to put the researcher in direct contact with everything that has been written, said or filmed on a given subject".

According to the authors, "the pertinent bibliography offers means to define, to solve not only known problems, but also to explore new areas where the problems were not sufficiently crystallized". In order to carry out a bibliographic research, it is essential that the researcher makes a survey of the themes and types of approaches already worked by other scholars, assimilating the concepts and exploring the aspects already published.

To support the presentation and discussion of the results, the research enriches the methodological process with figure 1, which highlights the application of 5S in the industry, emphasizing flexibility, cost reduction, quality improvement, maximum respect, greater safety and increased productivity.

Figure 1 – 5S application model in industry



Source: Fernandes (2019)

For a better explanation of the application of 5S in industry, based on figure 1, Fernandes (2019) praises that the main idea behind 5S is to keep the workplace always organized, clean and, above all, productive. However, the author points out that it is an easy-to-understand technique, but its application may not be so simple, as it implies changes in attitudes and behaviors, in addition to requiring everyone's involvement. It therefore requires a lot of discipline.

In view of the author's idea about the positive concepts and at the same time the questioning about the changes in attitudes and behaviors that can hinder the application of 5S in the industry, Fernandes (2019) contributes directly to the construction of the techniques and their benefits as follows:

- 1st Stage – SEIRI: Evaluates everything that is relevant to the execution of the activity; discard what is superfluous. Try to institute this step, first of all, in your work area and then expand it to common spaces. The main benefits are directed to the freed up space that was previously occupied by items that were not needed at work, the availability of objects to other users, the reduction of costs with the maintenance of discarded items, and better use of space;
- 2nd Stage – SEITON: Time to organize materials, equipment, folders, putting them in order, preferably numbering them and standardizing the titles, to enable the prompt location of the files. The benefits are in the reduction of time wasted in the search for documents, materials and other



objects, in the reduction of loss due to inadequate storage, in the increase of security, because correctly stored items are accessed without unnecessary risks, more agility in work, increased productivity, and improvement in the visual aspect of the environments;

- Step 3 – SEISO: Responsibility for keeping the environment clean belongs to everyone, not just those responsible for cleaning it. The focal point, in this sense, is not the act of cleaning, but of avoiding the dirt, seeking the causative source, eliminating it or reducing it. The benefits lie in the satisfaction of the workers for working in a clean environment; greater conservation of materials and equipment, greater effectiveness in prevention actions, and reduction of accident risks;
- 4th Stage – SEIKETSU: In this stage, the rules and methodologies are defined so that the initial work is maintained and so that the risk of returning to the original situation is reduced. The benefits are present in greater personal and process stability, improvement of the image of workers, reduction of accidents, and improvement of quality of life;
- Step 5 – SHITSUKE: It is in the sense of self-discipline that the awareness of the previous four senses has a constant self-discipline, determination, and assiduity with the commitments that have been made. Its focus is on the psychological and natural changes on the part of employees. This sense demands from employees their ethical commitment, patience, responsibility, respect for standards and processes, and improvement in communication. Each employee must know what their obligations are and the consequences of their actions, both for themselves and for their environment. The benefits presented in the last stage facilitate the management and evolution of 5S and make employees more aware individually and collectively.

DEVELOPMENT

The literature review was developed through research in books, articles and scientific journals, reporting on the 5S Program, starting from the concept, its origin, phases and principles. The characterization of the 5S was also discussed, in the three dimensions: physical, intellectual and behavioral, through the characterizations of *SEIRI* (utilization), *SEITON* (organization), *SEISOU* (cleanliness), *SEIKETSU* (health) and *SHITSUKE* (self-discipline).

5S PROGRAM CONCEPT

For the fruit pulp industries, the application of the 5 senses in all sectors of the industry promotes changes in the work environment, aimed at the well-being of employees and preventing raw material from being wasted. For Sabreda et al. (2016), 5S is a total quality program that deals with the senses of use, organization, cleanliness, hygiene, and order maintained, with the aim of generating a change in the work environment. This change leads to good results for the organization, that is, it fights waste, employees



work with more health and safety, and the work environment becomes a clean and organized place. In addition, waste generates high prices, making one's life more expensive.

The 5S concept has Japanese origins, in order to measure the principles of each phase employed by it. According to Oliva (2019), 5S has the following phases:

- *SEIRI* – Sense of use, tidiness, organization, selection;
- *SEITON* – Sense of ordering, systematization, classification;
- *SIX* – Sense of cleanliness, zeal;
- *SEIKETSU* – Sense of cleanliness, hygiene, health, integrity; and
- *SHITSUKE* – Sense of self-discipline, education, commitment (OLIVA, 2019, p.13).

The above-mentioned author highlights the importance of 5S, through the numerous benefits after its implementation. In this way, Oliva (2019) points out that 5S, in addition to bringing a tidier and cleaner area, has prepared organizations for the implementation of other quality and maintenance programs, such as autonomous maintenance, reduction of setup time, as it produces improvements in self-esteem, respect for the environment, interpersonal relationships, and organizational climate. It acts directly on the company's culture, which has proven to be the biggest obstacle to the effectiveness of several tools that depend directly on employee participation.

Continuous improvement and total quality are no different from some fundamental principles for human and professional growth. According to Paes et al. (2016), the implementation of 5S consists of taking care of the cultural aspects involved in the application. It is difficult for a factory to produce well without a good foundation in the application of 5S and the rigor adopted in the application must be directly proportional to the strength of production. The fundamentals used by the 5S tool to achieve continuous improvement and total quality are no different from some fundamental principles for human and professional growth.

Based on the authors' concepts about 5S, Bertolino (2010) presents the objectives of the use as follows:

- Ensure greater customer satisfaction by providing products that meet their expectations, monitoring their constant changes;
- Improve the quality of care;
- Increase efficiency and productivity by keeping each step of the production process under control, detecting possible failures and tracking their causes;
- Ensure greater integration of staff, promoting communication between the various sectors and the different hierarchical levels (vertical and horizontal communication);

- Reduce costs by minimizing rework;
- Promote greater profitability and growth. (BERTOLINO, 2010, p.15).

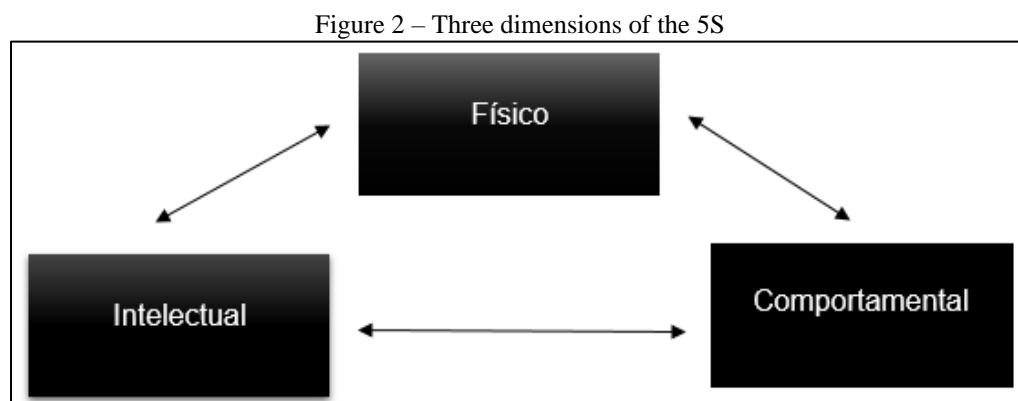
According to Rocha (2014), several approaches, tools and programs have been proposed, developed and applied to quality management, in order to support the activities of resource management for the production and availability of goods and services. Theoretically, production management is the same for any size of organization, however, small routine operations can also have significant advantages if applied in a structured and disciplined way on a daily basis of work, therefore within each operation, the mechanisms are called processes.

In view of the presentation of the supports for quality management, directing the organization to improve the processes in the company, Rocha (2014) considers that among the most well-known and simple quality improvement programs in their applicability and assimilation, we can mention the 5S Program, which based on 5 senses of the Japanese philosophy of quality applied in the work environment, It has provided companies with great advances in waste elimination, organization, cleanliness, improvement in interpersonal relationships, safety at work and general maintenance.

For the application of 5S in the fruit pulp industry, it is necessary to know the characterization of 5S, through changes in the conduct of employees, regarding habits and attitudes in the activities developed in the industry, which will be explained below.

CHARACTERIZATION OF THE 5 SENSES FOR APPLICATION IN INDUSTRIES

The characterization of the 5S was constructed in three dimensions, highlighting the physical and intellectual assets, based on the execution of the activities and the demonstration of the employees' attitudes through behavior, as shown in figure 2.



Source: France (2009)



The three dimensions receive a broader connotation from Rocha (2014), when he describes that physics or mechanics is linked to material things, to the objects that surround us. The intellectual, or process, refers to the methodology used to perform a task, to the technology applied. Behavioral is linked to our attitudes, to the way we react when exposed to different situations in our daily lives. It is important that these three dimensions go together, interconnected with each other.

Therefore, the application of 5S in a company promotes changes that are linked to motivation, quality in the provision of services, causing positive results for the growth of production contemplated in the following characterizations:

Seiri – Sense of use and disposal: Using without wasting refers to the practice of checking all tools, materials, etc. in the work area and keeping only the items that are essential for the work being performed. Everything else is kept or discarded. The classification of the existing resources in the environment, separating what remains and what leaves, awakens people to a critical analysis of their environment and to break paradigms about the possession of obsolete objects;

Seiton – Sense of organization: Focuses on the need for an organized space. The arrangement and storage of tools, equipment or objects in the places where they will later be used and that allows the flow of work. The process should be done in such a way as to eliminate unnecessary movements. The definition of storage places, the search for identifications and signs that facilitate access and replacement, and the revision of the layout awaken people to a better planning of time and physical effort, not only of themselves but also of others;

Seiso – Sense of cleanliness: It is to keep the workspace as clean as possible and investigate the routines that generate dirt. Identify the agents that harm the environment (poor lighting, bad smell, noise, poor ventilation, dust, etc.). Remember that cleaning should be part of daily work, not just an occasional activity. The care for resources and facilities is achieved through cleaning activities, because it is from them that people start to have a recognition of their environment.

Seiketsu – Sense of standardization: Hygiene in the workplace and establishing rules for coexistence and maintenance of the first three S's. After completing the first three steps, we must move on to standardization and continuous improvement of activities, where everything must be documented. Create standards and systems that everyone must comply with. Visual management is essential for an easy understanding of each standard. This step requires perseverance to change people's behavior and routines that generate dirt, or we will soon return to the same situation before the implementation of 5S.

Shitsuke – Sense of self-discipline: Strictly abide by norms, rules, and procedures. It refers to the personal commitment to complying, maintaining, and reviewing the ethical, moral, and technical standards defined by the 5S program. If people start to do what and how it should be done, even if no one



sees it, it means that all the steps of 5S are being consolidated, there is discipline and Shitsuke is being executed. Self-discipline is the highest stage of human education.

APPLICATION OF THE 5S PROGRAM

The application of the 5S program is essential to ensure a new foundation in the company, which seeks to avoid waste, the organization of raw materials and resources to be used at the right time, eliminate any type of material that is causing the proliferation of insects, vectors, and finally, the quality of the environment for a better performance of employees. According to Naves (2016), it can be applied in any company, in any field, and for its inception an implementation project must be developed. It is necessary to set up promotion groups to publicize the program, to hold lectures to raise awareness and involve employees, training them to realize the senses. Preferably, a person in charge of the board of directors should participate in this group, in order to demonstrate the commitment of the top management to the other employees.

According to Naves (2016), a standardization group should also be set up to establish rules and procedures at each stage. Finally, a control group is essential to follow up and monitor the results, pointing out goals for each pre-established objective, by the standardization group. A launch day of the program is also interesting as the "D-Day", sponsored by the company, so that everyone involved realizes that a change is taking place and is motivated to be part of it.

Based on the authors' concepts about the 5S, and on the characterization of the 5 senses for application in industries, the use and disposal, organization, cleaning, standardization and self-discipline are highlighted.

PRESENTATION AND DISCUSSION OF RESULTS

The concepts directed to the 5S application model in the industry, corroborate in the presentation of the discussion and results, presenting a succinct analysis of the stages of application of 5S, regarding SEIRI, SEITON, SEISO, SEIKETSU and SHITSUKE, since the results are fundamental from the researcher's understanding of the authors' concepts and the results presented by the Company CEIA Ceará Industrial de Alimentos LTDA ME. Therefore, an initial evaluation was carried out before implementation, with the application of the checklist presented in Appendices (A, B, C, D and E) of this article, and after implementation, the checklist was reapplied to evaluate the improvements based on the 5 senses. The checklist will be applied monthly by the company's technical manager.

During the on-site visit, it was found that the company had structural flaws such as: floor without ceramics, open production and goods receiving environment with the possibility of access to pests,



machinery with worn structures, disorderly production flow, lack of guidance for employees' hygiene habits such as lack of adequate points for hand hygiene, Disorganized bathrooms, lack of uniforms.

To meet the requirements of the 5S, the pulp company promoted adjustments and orientations based on the 5S, where the structures of the equipment were painted and identified; defined production layout and equipment arrangement in order to follow a production flow, with identification of sectors; placement of curtains on access doors; installation of sinks at the entrance of the production; organization and identification of bathrooms; acquisition of uniforms; employee training; elaboration of standardized procedures such as SOP, GMP Manual and work instructions; and purchased PPE for employees, in order to ensure their health.

In view of the research findings, the authors' contribution and the on-site visit, the results based on the fundamentals of the 5S program are presented:

Seiri: The application for the first S, was considered the initial step for the changes in the sectors of the pulp factory, through the eyes of the employees and questions to adapt to the changes, according to the suggestions to separate all the material necessary for pulp production, or for activities in other sectors. It was possible to follow this new routine, in which employees began to separate all office material and raw material, utensils for production that were occupying space, and at the same time, contributing to the accumulation of dirt and shelter from pests;

Seiton: For the second S, the visit found that employees separate all materials according to the needs of each sector, through identification and use, ensuring organization and, thus, avoiding physical wear and stress on the part of the employee who continues to organize his work environment. For Ribeiro (1998), to order is to store the necessary things, according to the ease of accessing them, taking into account the frequency of use, the type and weight of the object, as well as a logical sequence practiced, or easy assimilation;

Seiso: The third S was the one that most caught the attention of the employees, because on the first visit the cleanliness of the environment was not considered satisfactory. Based on the guidelines on how to conserve the environment, the changes contributed to eliminating residues on the floor, eradicating visual dirt from the sectors, in addition to eliminating the odor of fermented fruits. According to Ribeiro (1998), cleaning is eliminating dirt, inspecting to discover and attack the sources of problems. Cleanliness should be seen as an opportunity to inspect and recognise the environment;

Seiketsu: The penultimate S is directed to the health of everyone who makes up the company, from management to employees. This change happened in harmony with the continued realization of the previous three foundations. The company started to monitor the maintenance of the machines, the hygiene of the environments, in addition to the habits of the employees before handling any utensil and equipment for pulp production. According to Ribeiro (1998), to maintain cleanliness is to preserve hygiene, taking



care that the stages of organization, order and cleanliness, already achieved, do not go backwards. This is accomplished through the standardization of habits, norms, and procedures;

Shitsuke: The last S was perceived by the attitudes of the employees, based on respect, helping others in keeping the environment organized according to the first guidelines, contributing to a harmonious relationship in all sectors, in the growth and quality of production, reflecting on consumer satisfaction. According to Ribeiro (1998), to be disciplined is to strictly comply with the rules and everything that is established by the group. Discipline is a sign of respect for others.

Finally, the application of the 5 senses in the pulp company started to have a more hygienic production process, with a continuous flow avoiding waste of time, obtained standardized processes and in order to avoid errors and waste, as well as the employee was guided and motivated to work with organization, discipline, hygiene and health.

FINAL THOUGHTS

With the on-site visit to the Company CEIA Ceará Industrial de Alimentos LTDA ME, it was found that the operational structure, environments and activities developed by the employees, caused waste of raw material for the production of pulps, office supplies, production rooms with minimum spacing for the circulation of employees, often causing stress caused by the disorganization of the space, which caused the accumulation of fruit behind the processing machines, packaging and in the cold rooms.

The changes took place after the application of the 5S in the CEIA industry, by a Food Engineer, a professional who guaranteed a new phase with the participation of management and employees in all sectors, in order to change the structural flaws that were found in the company in the first visit, applying the sense of use, through the disposal of all useless material, in order to gain more space in the sector. As for the sense of order, the company started to name all equipment according to its functions and use in the appropriate sector. For the sense of cleanliness, the industry has undergone changes that have further valued the internal and external structure, through the hygiene, washing and collection of fruit remains, avoiding odor and risk of accidents due to the employee's slip. For the penultimate sense, it was clear that the industry, through its professional, consolidates the three previous senses in a harmonious way so as not to break the link of changes. In the last sense, discipline stands out. The CEIA industry has demonstrated a fine-tuning of the criteria that involve human relations, through the excellent relationship between the sectors and the valorization of the human being, reflecting positively on the quality of service, increased productivity and customer satisfaction.

Finally, the 5S Program proved to be very easy to apply initially because it is an easy-to-understand technique and because of the engagement and support of management, being a change obtained with low investment with visible results in the short term.



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APPENDIX A - USAGE CHECKLIST

0	1	2	3	4	5
sem esforço	leve esforço	moderado esforço	médio esforço	acima da média	grade resultado

COMO PONTUAR A AVALIAÇÃO:

Determine as pontuações individuais usando a escala acima. No final de cada seção, adicione o total de pontos para obter uma pontuação no TOTAL DA SEÇÃO. Siga as instruções no final da auditoria para calcular sua pontuação geral.

UTILIZAÇÃO	PONTOS
Apenas o equipamento necessário está presente na área. Todos os equipamentos obsoletos, quebrados ou desnecessários, não necessários para projetos atuais, são removidos da área ou marcados para remoção.	
Apenas as ferramentas necessárias estão presentes na área. As ferramentas não necessárias para projetos atuais estão removidas da área ou identificadas para remoção.	
Apenas o mobiliário necessário está presente na área. Todas as bancadas de trabalho obsoletas, quebradas ou desnecessárias, prateleiras, cadeiras, armários, foram removidas. Existe algum equipamento não removido etiquetado para a área de descarte.	
Apenas as peças de reposição e materiais necessários estão presentes na área. Os itens não necessários para projetos atuais são removidos da área ou são marcados para remoção.	
Apenas a documentação necessária está presente na área. Mensagens, instruções, relatórios, cartazes, etc. desatualizados ou desnecessários são removidos da área.	
Todos os perigos de tropeços, como fios elétricos e cabos de equipamentos, são removidos de todas as áreas de trabalho, de pé e de caminhada.	
TOTAL	



APPENDIX B - ORDERING CHECKLIST

0	1	2	3	4	5
Sem esforço	Leve esforço	Moderado esforço	Médio esforço	Acima da média	Grande resultado
ORDENAÇÃO					PONTOS
O equipamento/maquinaria está claramente identificado (numerado, nomeado, codificado por cores, etc.) e colocado num local devidamente identificado. Pontos críticos de manutenção estão claramente marcados.					
As ferramentas têm uma área de armazenamento designada que está ao alcance do usuário/operador. O local está devidamente rotulado e existe um sistema para identificar as ferramentas que estão ausentes.					
Quando aplicável, os móveis são claramente identificados (numerados, nomeados, codificados por cores, etc.) e colocados em um local devidamente identificado.					
Locais para contêineres, caixas, lixeiras, etc. São claramente definidos por meio de sinais ou linhas marcadas/coladas e devidamente rotulados.					
A documentação está devidamente rotulada e tem um local claramente identificado, longe das superfícies de trabalho.					
As áreas de trabalho que exigem equipamentos de proteção individual (EPI) são claramente marcadas (fita adesiva, sinalização/sinalização de segurança, etc.).					
Interruptores de parada e disjuntores são altamente visíveis e localizados para facilitar o acesso em caso de emergência.					
Mangueiras de incêndio, extintores de incêndio e outros equipamentos de emergência são exibidos de forma proeminente e estão desobstruídos.					
Pisos/corredores são claramente marcados; pistas de empilhadeira, saídas, áreas perigosas, caminhos de saída, passagens, corredores, etc. Todas são marcadas com linhas visíveis (fita adesiva/piso).					
As condições de trabalho são ergonomicamente amigáveis - ferramentas e outros itens necessários para o trabalho diário são armazenados em alturas apropriadas, a sinalização de segurança relacionada é exibida claramente, etc.					
O layout do local de trabalho acomoda uma saída fácil e desobstruída em caso de emergência. A rota de saída de emergência é afixada em um local visível para todos verem.					
TOTAL					



APPENDIX C - CLEANING CHECKLIST

0	1	2	3	4	5
Sem esforço	Leve esforço	Moderado esforço	Médio esforço	Acima da média	Grande resultado
LIMPEZA					PONTOS
Todas as ferramentas são mantidas limpas e em bom estado de funcionamento. Quando possível, as ferramentas são armazenadas de maneira a mantê-las limpas e livres de riscos de danos.					
As superfícies de trabalho (máquinas, bancadas de trabalho, matrizes e outros equipamentos, incluindo caixas elétricas) são mantidas limpas e pintadas.					
Paredes, divisórias, trilhos, etc. São mantidos limpos e pintados.					
Os pisos estão livres de sujeira, detritos, óleo, peças, ferragens, caixas vazias, etc. E todos os drenos (se houver) estão livres de detritos e obstruções.					
A papelada não está rasgada e é mantida limpa e protegida contra sujeira e outros contaminantes.					
Recipientes, caixas, recipientes, etc. Estão limpos e não rachados, rasgados ou danificados de alguma outra forma. Quando armazenados, eles são empilhados em sua localização correta.					
Todos os equipamentos de proteção individual (EPI) são mantidos em condições higiênicas e confiáveis e armazenados adequadamente em um local facilmente acessível e rotulado quando não estiverem em uso.					
Todo o equipamento de limpeza está bem armazenado e está prontamente disponível quando necessário.					
Todos os avisos, sinais, etiquetas, linhas de piso, etc. relacionados à segurança de equipamentos estão todos limpos, fáceis de ler, não rasgados ou danificados e fornecem proteção adequada.					
Há um cronograma publicado mostrando os horários, a frequência e as responsabilidades para limpar áreas do local de trabalho, como janelas, cantos, paredes, portas, tampos de gabinetes, etc.					
TOTAL					



APPENDIX D - STANDARDIZATION CHECKLIST

0	1	2	3	4	5
Sem esforço	Leve esforço	Moderado esforço	Médio esforço	Acima da média	Grande resultado
PADRONIZAÇÃO					PONTOS
Ferramentas, equipamentos, papéis, móveis, etc. são armazenados em áreas designadas e são devolvidos às suas casas imediatamente após o uso.					
Registros de manutenção de equipamentos são visíveis e indicam claramente quando a manutenção ocorreu pela última vez.					
Os resíduos do produto (aparos, recipientes, líquidos, embalagens, etc.) são consistentemente limpos regularmente e removidos do local de trabalho.					
Medidas preventivas foram implementadas para garantir que o local de trabalho atenda às diretrizes 5S (por exemplo, sistemas que não permitem o acúmulo de resíduos, como recipientes para coletar detritos de produtos das máquinas).					
O ambiente de trabalho satisfaz os requisitos do trabalho que está sendo realizado - Iluminação de brilho e cor, temperatura, fluxo de ar e qualidade, etc.					
Os resultados da auditoria anterior são publicados e claramente visíveis para toda a equipe.					
As áreas para melhoria identificadas durante a auditoria anterior foram abordadas e concluído					
TOTAL					



APPENDIX E - DISCIPLINE CHECK-LIST

0	1	2	3	4	5
Sem esforço	Leve esforço	Moderado esforço	Médio esforço	Acima da média	Grande resultado
DISCIPLINA					PONTOS
Um membro da administração participou de uma atividade 5S, como uma auditoria ou outra atividade nos últimos 3 períodos de auditoria.					
O reconhecimento é dado às equipes que se envolvem em atividades 5S.					
O tempo e os recursos são alocados para atividades 5S (por exemplo, tempo de limpeza diário / semanal designado, líder da equipe 5S).					
Todos os operadores, líderes de equipe, supervisores, etc. São designados para atividades 5S pelo menos uma vez por semana.					
A equipe tomou a iniciativa de fazer melhorias no local de trabalho que não foram identificadas durante a última auditoria.					
TOTAL					

Para determinar a **CONTAGEM GERAL**, insira as pontuações totais de cada seção no campo correspondente na coluna **SESSÃO TOTAL**. Divida cada um desses números pelo listado à direita dele na coluna **# DE PERGUNTAS**. Escreva as respostas na coluna **MÉDIA DE PONTUAÇÃO**. Total das respostas para obter a pontuação final.

	SESSÃO TOTAL	# DE PERGUNTAS	MÉDIA DE PONTUAÇÃO
UTILIZAÇÃO		8	
ORDENAÇÃO		11	
LIMPEZA		10	
PADRONIZAÇÃO		7	
DISCIPLINA		5	
			PONTUAÇÃO GERAL