DOI: 10.2478/sbeef-2024-0020

QUALITY ASSURANCE USING AGILE APPLIED IN ORGANIC HERBS CONDITIONING

D. MESAROS[1], S. MUNTEAN[2], M.DUDA[2], O.PECE (MASTAN)[3], A.L. LONGODOR[4], Z. KOVENDI[1]
Control Systems Engineering Department, University of Oradea, Str. Universităţii nr. 1, Oradea, Romania
Crop Science Department, University of Agricultural Sciences and Veterinary Medicine, Calea Manastur nr. 3-5 Cluj-Napoca, Romania
Anathomy Department, University of Agricultural Sciences and Veterinary Medicine, Calea Manastur nr. 3-5 Cluj-Napoca, Romania
Land Measurements and Exact Sciences Department, University of Agricultural Sciences and Veterinary Medicine, Calea Manastur nr. 3-5 Cluj-Napoca, Romania
E-mail: dsas@uoradea.ro

Abstract. ***The paper's objective is to emphasize the applicability of AGILE Methodology in quality assurance of organic herbs conditioning. This paper begins with a brief overview of the theoretical components of quality assurance and a short introduction in AGILE Methodology emphasizing how may be applied in a variety of industries, such as the food processing industry and pharmaceutical industry. The goals of interdisciplinarity are customer happiness, productivity growth, and profit maximization.***

Keywords: herbs, conditionig, AGILE, quality assurance, organic

1. QUALITY ASSURANCE IN HERBS PROCESSING

Herbs are plants with medicinal, culinary, or aromatic properties, commonly used for enhancing health, flavoring food, or adding fragrance. Organic herbs have been utilized for thousands of years in traditional medicine, wellness practices, and everyday cooking. It is well-known that each herb contains unique compounds that provide specific health benefits, making them valuable in various aspects of life.

Due to their wide diversity of flavors, natural qualities, and health advantages, herbs are essential for improving both physical well-being and culinary experience [1-3].

Like it is mentioned in literature, herbs may be categorised in various types such as [1-3]:

- culinary herbs which add flavor to dishes and are used fresh or dried in cooking.
- medicinal herbs which are used in herbal medicine for their healing properties.
- aromatic herbs which are primarily used for their fragrances, in cosmetics, perfumery, and aromatherapy.

Due to its applicability, herbs are a main component both in food industry and in pharmaceutical industry. Thus, quality assurance is analised from both perspectives.

Quality assurance both in food industry and pharmaceutical industry is a crucial process that ensures products meet safety standards, legal requirements, and customer expectations.

Also, quality assurance focuses on preventing mistakes, hazards, and defects throughout the production process, from raw material sourcing to the final product, in order to ensure that the product is safe, high-quality, and compliant with industry standards [4-9].

Like it is mentioned in literature, quality assurance in the food industry is essential for producing safe, high-quality products and building consumer trust, while also adhering to legal and safety regulations. In the following figure the quality assurance diagram is represented [4-9].

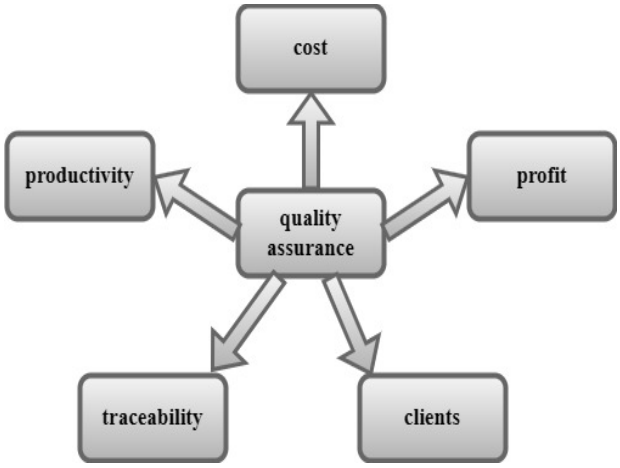

Figure 1. Quality Assurance [4].

Nowadays, not only in Romania, but also worldwide, quality assurance is essential to being competitive and current, not just a fad. Both in food industry and in pharmaceutical industry, is implemented a system that ensures products are consistently produced and controlled according to quality standards.

Regular testing and inspection are conducted to monitor quality throughout the production cycle. Most commont tests are the following [4-9]:

- microbiological testing represented bt ensuring the absence of harmful bacteria like Salmonella, E. coli, and Listeria.
- chemical testing represented by monitoring for residues, allergens, or chemical contaminants.
- physical inspection represened by checking for foreign objects, proper labeling, and packaging integrity.

Both in food industry and in pharmaceutical industry, quality assurance is essential for producing safe, high-quality products and building consumer trust, while also adhering to legal and safety regulations.

2. ORGANIC HERBS CONDITIONING PROCESS

The aim of this chapter is to highlighted the organic herbs conditioning process, which is widely described in literature.

Like it is mentioned in literature, there are several requirements that must be fulfilled in order to perform the conditioning process. In the following diagram, taking into consideration the specialty literature, the conditioning process is presented (Figure 2) [1-3]:

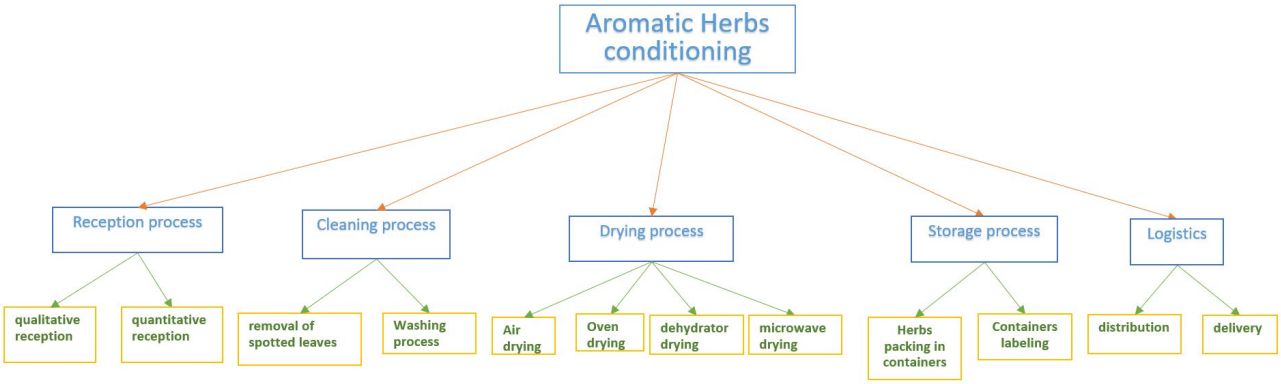

Figure 2. Conditioning process for organic herbs [1-3]

As noted in the literature, there are a number of requirements that must be met in order to perform conditioning process [1-3].

In the following, is presented a short description of the general Conditioning Process of organic herbs. Starting with reception process, the qualitative and quantitative reception of the organic herbs are fulfilled.

The following step is represented by the cleaning process, where the removal of spotted leaves is performed, followed by the washing process.

After that, the drying process begins. There are several options of drying such as air drying, oven drying, deshydrator drying and microwave drying. The next step is storage process, where the herbs are packed in containers and the containers are labeled.

The logistic process, which includes distribution and delivery to partner stores, is represented by the last step.

3. AGILE APPLIED IN ORGANIC HERBS CONDITIONING

In every industry, interdisciplinary cooperation is frequently employed to emphasize the significance of advancement and change.

A small herbs conditioning factory is used as an example to illustrate the AGILE approach.

The research is a preliminary case study of interdisciplinary fields such as AGILE and the herbal conditioning sector. This article's primary goal is to demonstrate how the Agile Methodology may be applied in a variety of industrial domains, even if it is only a specific software development technique. Project management boosts productivity and generates good profits in a variety of industrial domains. The literature widely describes the particular framework and artifacts of AGILE Methodology [10-13].

The Agile Team is represented in the following figure:

Figure 3. The AGILE deliverable development team

The product owner, who is involved in the product's concept, the scrum master, who is specifically in charge of the project's quality work, and skilled specialists make up the AGILE team. The literature often describes the whole set of AGILE team members [14-16].

The workplan has a good structure and effort is thoroughly tracked, in this way each team member has transparency in job process [10-13].

The organic herb conditioning process shown in figure 4 is divided into tasks and user stories using Jira software, a well-known task management tool. The concepts of backlog components are widely described in literature.

The detailed perspective of project workflow presented in the following figure emphasizes the fact that for each user has its own individual tasks that must be completed in order to consider the user story done.

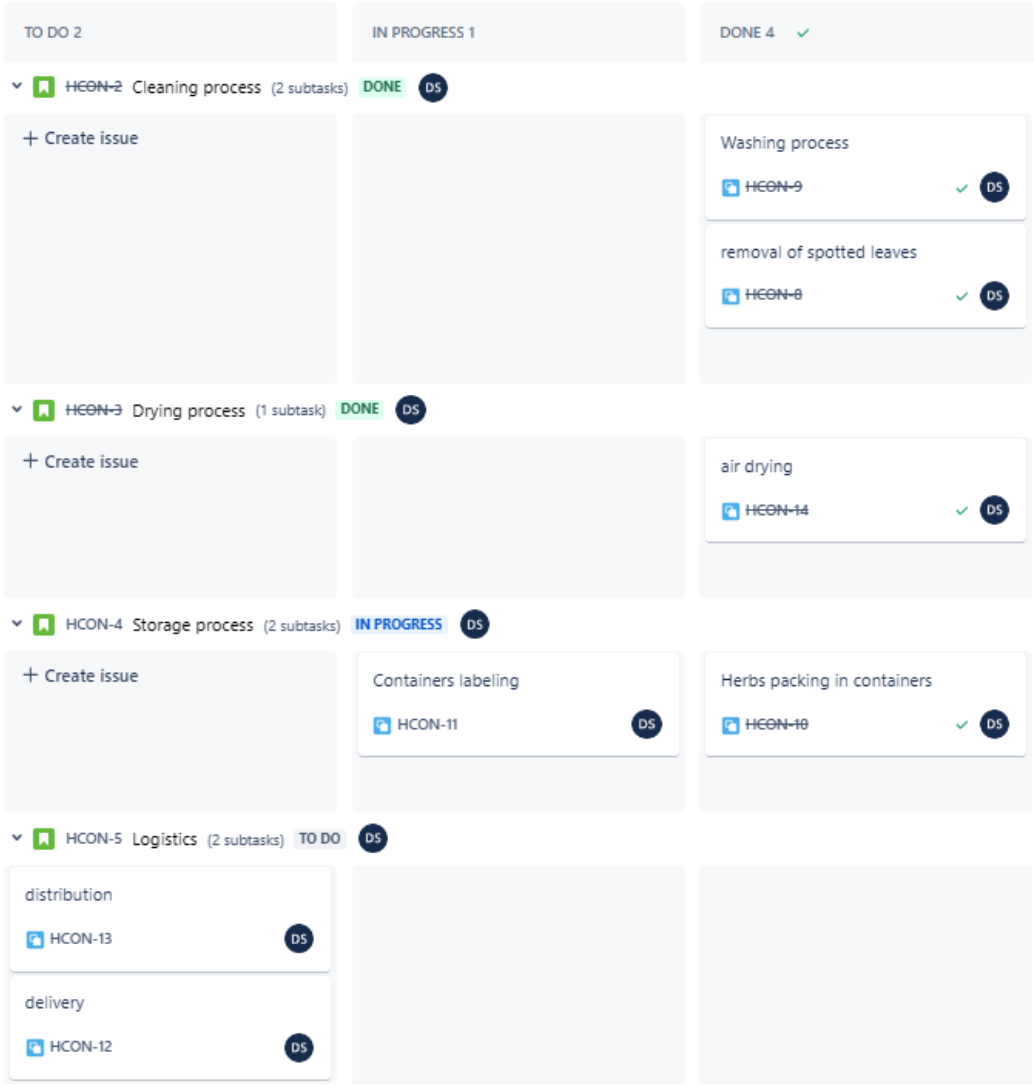

Figure 4. The Jira Board for organic herbs conditioning

Jira Software is a popular project management tool developed by Atlassian, primarily designed for software development teams to plan, track, and release projects. It is widely used in AGILE Methodology but is flexible enough to support a variety of workflows in a variety fields of industries. Jira is known for its scalability, making it suitable for both small teams and large factories and organizations [17].

The optimal workplan structure will be emphasized through the use of AGILE, and the success of each assignment will be determined by its clarity and transparency. In this way each employee or team member is responsible for his own work and makes the task process clear to him.

The detailed perspective of each task contains widely descriptions for what must be fulfilled. In the following figure is represented the detailed view of drying process, in this case the only task that must be fulfilled is the air drying.

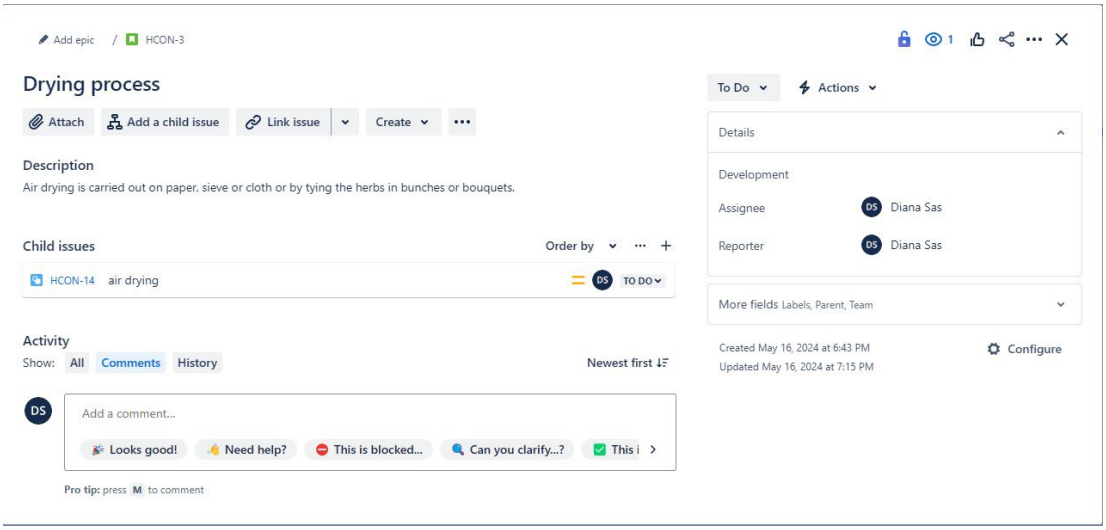

Figure 5. The detailed view for drying process

Also, in this way, quality assurance is guaranteed and goods are consistently produced and controlled according to quality standards.

4. CONCLUSIONS

The purpose of the paper is to highlight how the AGILE Methodology may be applied to the quality assurance of organic herb conditioning. The theoretical aspects of quality assurance are briefly reviewed at the outset of this paper, followed by a brief introduction to the Agile Methodology that highlights its potential applications in a range of sectors, including the food processing and pharmaceutical industries. Customer satisfaction, increased productivity, and profit maximization are the objectives of interdisciplinarity.

For thousands of years, organic herbs have been used in everyday cooking, traditional medicine, and health practices. It is common knowledge that every herb has distinct chemicals that offer particular health advantages, making them useful in many facets of life. Each herb can be used in a variety of forms such as essential oils, teas, powders, or fresh herbs in order to offer a variety of benefits depending on individual needs and goals.

Both in food and pharmaceutical industries, quality assurance is an essential procedure that guarantees goods fulfill safety regulations, regulatory criteria, and consumer expectations.

All of the diagrams in this work were represented using the popular design program Microsoft Visio.

5. REFERENCES

[1] Duda, M. Marcel, Dan I. Vârban, Cultura plantelor medicinale, Ed. AcademicPres, 2003

[2] L.S. Muntean, S. Cernea, M. Duda, A. Fițiu, D. Vârban, L. Muntean, S. Muntean, Tehnologii în agricultura ecologică – Cereale plante oleoproteaginoase, plante textile, Ed. Risoprint Cluj-Napoca, 2003, ISBN 973-656-519-X

[3] L.S. Muntean, M. Ştirban, E. Luca, A. Fițiu, L. Muntean, S. Muntean, I. Albert, Bazele agriculturii ecologice, Ed. Risoprint Cluj-Napoca, 2005, ISBN 973-656-959-4

[4] Constantin Banu, Violeta Nour, Camelia Vizireanu, G. Musteaţă, Silvia Rubţov, D. Răsmeriţă, 2007, Calitatea şi analiza senzorială a produselor alimentare, Editura AGIR, Bucureşti, pag 304-312.

[5] Raducu Camelia, Aurelia Coroian, 2016, Biotehnologii de pelucrare şi control a calităţii produselor vegetale şi animale. Manual universitar. Editura AcademicPres, Cluj.

[6] Aurelia Coroian, 2014, Toxicologia alimentelor, Editura Bioflux, Cluj-Napoca.

[7] Vasile Stănescu, Sorin Apostu, 2010, Igiena, inspecţia şi siguranţa alimentelor de origine animală volumul II, Editura Risoprint, Cluj-Napoca.

[8] Brennan Hugh, Food Industry Quality Control Systems, Syrawood Pub House, ISBN 9781682863336

[9] Lisa Jordan, Health and Quality Control in Food Industry, CALLISTO REFERENCE, 2015, ISBN 1632394170

[10] L. Adkins, Coaching Agile Teams: A Companion for ScrumMasters, Agile Coaches, and Project Managers in Transition (Addison-Wesley Signature Series (Cohn), Addison-Wesley Professional, 2010, ISBN-10: 0321637704, ISBN-13: 978-0321637703

[11] Geoff Watts (Editor), Scrum Mastery: From Good To Great Servant-Leadership, Inspect & Adapt Ltd, 2013, ISBN13: 9780957587403

[12] Jim Highsmith, Agile Project Management: Creating Innovative Products, Pearson Education/Addison-Wesley, United States, 2004, ISBN: 0-321-21977-5

[13] https://agilemanifesto.org/

[14] Mesaros, Diana, et al. "Agile Project Management in Food Industry" The Scientific Bulletin of Electrical Engineering Faculty, vol. 22, no. 2, Valahia University of Targoviste, 2022, pp. 65-69. https://doi.org/10.2478/sbeef-2022-0023

[15] Mesaros, Diana Monica et al., "AGILE Project Management Using Jira in Processing of Food Industry," 2023 17th International Conference on Engineering of Modern Electric Systems (EMES), Oradea, Romania, 2023, pp. 1-4, doi: 10.1109/EMES58375.2023.10171760.

[16] Mesaros, Diana, Rusu, T. and Mesaros, I.. "Agile Scrum Applied in Agricultural Processes" The Scientific Bulletin of Electrical Engineering Faculty, vol.22, no.1, 2022, pp.1-5.

[17] https://www.atlassian.com/software/jira