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# Implementation of a safety culture in organisation - the HSC-Standard

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# Abstract

In recent years, ISO, IFS, BRC and FSSC 22000 standards in the areas of quality, environment and occupational health and safety have been increasingly implemented in companies in various industries. The main focus of these developed standards are the processes. But the past shows that the factor human is another very important factor, which should be much more in the middle in organization. The new developed guideline has the human factor in the foreground. In particular, the attitude and awareness of occupational safety and health protection in the behaviour of employees at all levels of the organisation are at the centre of consideration.

Inspired by this approach, a group of experts from the fields of quality sciences, standardisation and certification as well as consulting for system-relevant companies in the agricultural and food industry came together to form a committee during the Corona crisis in spring 2020. The common goal is to develop a new standard. The first step is to establish criteria for a guideline.

and establish an evaluation system for several pillars of a House of Total Safety Culture (HSC) tai-lored to the entire value chains of the agri-food sector. In addition, the essential building blocks of the guideline must be defined. The attitude of managers and employees, their behaviour and their

competence form the roof of the standard. The integrated management system with a continuous improvement process forms the foundation of the House of Total Safety Culture across the company in value chains. Qualification and communication are the main pillars and thus further elements of the HSC. Particular attention is paid to the fields of action of occupational safety and health protection, food safety, animal and environmental protection as well as sustainability and digitisation. They form the four inner pillars of the House of Total Safety Culture. The design of the respective certification levels is considered as a "construction phase". As part of the standardisation process, the coordination of the respective requirements for safety culture has not yet been completed. This article first provides an overview of the state of knowledge in relation to the established standards and norms of the agri-food industry with special consideration of the Safety Culture Ladder model. The procedure for developing and establishing the new guideline is then explained. For this purpose, the composition of the House of Total Culture is presented below. Building on this, the procedure for assessing the degree of maturity and possible concepts of continuing training are explained before the conclusion of this article.

Keywords: safety culture, sustainability, assessment,

Standard development, integrated quality management systems

### **1** Introduction

Today's agriculture, with its intensive farming and crop production,

production is not considered to be ecologically, socially or economically sustainable in view of cli-mate change [1]. Consequences of environmental pollution, biological cycles and, last but not least, the lack of animal welfare are becoming increasingly visible. However, not only the agricultural sector but also the food industry is in the forefront. Tension field of global change and an urgently needed a holistic transformation process [1]. Due to changing socio-political the house of safety culture was developed. Stakeholders' demands are not only those responsible in agriculture, but also in the food industry, who are more concerned with the issue of: sustainability apart [2]. In addition, the crises of recent years have shown that a rethinking is taking place in this sector as well [3]. In order to be able to act successfully in the future, the integration of sustainability aspects along the entire value chain is indispensable [25]. But it is also clear that this transformation process cannot succeed without technological progress and innovation. In fact, further technological progress also leads to greater dependence on natural resources such as soils, insects or the ecology of life communities as a whole [3]. To address these and other problems, strategies are needed that translate these challenges into action. The integration of quality, environmental and sustainability management is

of particular importance, since the same objects have to be considered from different perspectives (environment, safety, quality, social). If this integration fails, there is a risk of conflicting policies and objectives [3, 29]. Within this background and in order to meet future challenges, a continuous improvement of resilience in these areas is needed [24].

At all levels of management of companies, guidelines or standards have not yet been established which, on the one hand, cover the part of sustainability and the quality management and also occupational and health and animal welfare.

# 2 State of knowledge

The following is a brief overview of the most important standards and norms of the agricultural and food industry. The Safety Culture Ladder, which is particularly relevant for the safety culture in an organisation, is then presented in more detail.

2.1 Established standards and norms in the agri-food industry

A large number of norms and standards have been established in the agri-food sector in recent years (Table 1). In addition to requirements imposed by companies, have to be implemented individually, framework conditions and requirements have also been developed that are applied across all levels. Therefore, consistent quality assurance along the entire value chain should be ensured [4,5].

According to Regulation (EC) No 178/2002, responsibility for compliance with or implementation of legal requirements rests with the respective food business operators [6]. This includes the implementation of the Infection Protection Act (IfSG) at company level. The IfSG serves food safety and consumer protection by: Persons engaged in an activity in the food sector and directly or indirectly: indirect contact with food, are obliged to participate in a hygiene instruction by the Health Office [7]. Regulation (EC) No 852/2004 lays down general hygiene requirements. These must be respected at all stages of the value chain and include, the introduction and implementation of the HACCP concept. and the cooperation with the competent authorities in carrying out official controls [8,29].

In addition to the legal requirements, the agri-food industry has established standards in various areas. ISO 9001 is an industry-independent standard that sets out the requirements for a quality management system.

The continuous improvement is the main basic of this norm with the

Plan-Do-Check-Act cycle (PDCA). In the context of ISO 22000 food safety requirements are defined in addition to general requirements and documentation requirements. Demands on the management of the company and on the management of resources are included. In the context of the planning and implementation of safe products, it combines the HACCP concept with prevention programmes and places hazard analysis in the centre of all activities [5]. Requirements for an environmental management system are part of the ISO 14001, which is also based on the PDCA cycle. Environmental im-pacts are to be identified, measured and reduced in order to improve environmental performance and reduce environmental risks. Occupational and health protection that companies must comply with is described in the context of ISO 45001. The aim is to reduce safety risks and prevent accidents and occupational diseases. In addition to the employees in the company itself, the requirements of ISO 45001 also apply to all persons involved in the work process, e. g. subcontractors.

In view of the growing importance of sustainability and social responsibility, ISO 26000 was developed. It serves a guide for the development of Corporate Social Responsibility (CSR) and covers topics such as human rights and fair business practices. As many companies voluntarily want to ori-ent themselves to the standards the demand for Integrated Management Systems (IMS) is growing. In IMS, the individual management systems are seen as a common whole, thus reducing complexi-ty, isolated solutions are avoided, synergies are exploited and resources are saved [3, 5].

Industry standards such as the Animal Welfare Initiative [9] and the Sustainability Index of the German Agricultural Society (DLG) [10] are examples of

organisation-related industry standards in the agri-food industry. The Animal Welfare Initiative calls for compliance with animal welfare criteria, such as more space than required by law. The requirements relate only to the rearing and fattening or keeping of the animals [9]. The DLG Sustainability Index also refers only to individual companies and includes requirements from the ecological, social and economic fields [10].

Both the International Featured Standard(IFS) [26] and the British Retail Consortium Global Standard Food Safety (BRC) [27] are important certification schemes for the food sector. Both the IFS and BRC standards are recognised by the Global Food Safety Initiative (GFSI) [28,29] and cover the value chain from the manufacture of the products to product packaging via logistics companies and intermediaries up to retailers [3]. For the agricultural sector, the GLOBAL G. A. P. - Certification is of importance that places demands on agriculture. The Requirements include food safety and traceability, environmental protection, animal welfare, occupational safety and health and social considerations [11]. The newly de-veloped ENFIT standard covers the cleaning and disinfection of transport units such as containers, si-los, tanks, crates and pallets along the entire supply chain. The aim of the guideline is to close the gaps within the value chain and within the transport units in order to ensure the hygiene of the logistic to pre-vent cross-contamination [12].

	organisation releated	SupplyChain
legal requirements	Infection law	• VO (EG) NR. 852/2004
norms	• ISO 9001	
	Quality management	
	• ISO 14001	
	environmental	
	• ISO 45001	
	occupational and health	
	• ISO 26000	
	CSR	
specific standards	Initiative Animal Welfare	• IFS
	<ul> <li>DLG-Sustainability-Index</li> </ul>	• BRC
		GLOBAL G.A.P
		• ENFIT

Table 1. Overview of applicable norms, industry standards and legal requirements as well as their individual and inter-company relevance [compiled according to 3, 5].

# 2.2 Safety Culture Ladder and safety culture

The term safety culture was introduced by the International Atomic EnergAgency (IAEA) in connection with the Chernobyl nuclear disaster.

# Originally, the concept of safety culture refers to the characteristics and

attitudes prevalent in organisations to ensure that nuclear safety is given full attention as a top priority in the enterprise [12]. The importance of safety culture is reflected in the fact that the term

has been applied in various industries in recent years [14, 15]. In order to achieve a high level of safety at work, safety management systems have so far been used, but these are limited to technical and organisational measures. For this reason, the human factor comes to the fore, as the behaviour has a significant influence on the level of safety. However, a person's behaviour is shaped by his knowledge and awareness, so risk awareness is an essential prerequisite for safe action. Knowledge and awareness can be created in the context of instruction and promoted by training [16].

In 2012, the Safety Culture Ladder (SCL) was developed for the Dutch rail vehicle industry [17]. This is a certifiable assessment method that measures safety awareness and deliberate safe action. The focus of the SCL is on safety culture, so that people and their behaviours are the focus of the assessment. Thus, different aspects are highlighted from the existing standards, which are only designed to improve OSH management systems, and the SCL can serve as a complement to them [18].

The SCL is divided into five levels, which categorize occupational safety awareness and behaviour according to the degree of maturity. The assessment is based on the greater the awareness of safety at work and the efforts made to improve safety at work [18]. The benefits of SCL can be seen both on the part of workers and on the part of companies. A workplace that has been proven to meet high safety standards is attractive and can boost the motivation of workers. In the same way:

Safety is seen as a competitive advantage, because the more stakeholders in the value chain – from producers to suppliers to customers – recognise people as a safety factor and it becomes more important for people to be safe [17].

Following the presentation of the most important standards in the agri-food sector in the last section, the procedure for establishing the new House of Total Safety Culture guideline is explained in the following section. The panel of experts involved in the development of the guideline is first presented. The steps to be taken to produce the new guideline are then explained in more detail.

# 3. Expert team

The standard is developed by a panel of experts. This is made up of representatives from academia and practice. In this way, not only scientific findings are to be incorporated into this guideline, but also practical experience.

The experts come from the fields of quality, Corporate Sustainability, occupational and health and certification.

In addition to its expertise in the field of public-private partnerships, Quantum Quality GmbH also contributes its knowledge in the field of sustainability to the development of this guideline and is therefore also responsible for the field of sustainability in the project presented here. The competences of the Alliance for Training and Qualification (EQA) lie in particular in continuing education measures and lifelong learning concepts. EQA can also draw on many years of experience in the field of quality management. The focus of the work is in the field of agriculture. EQA is therefore responsible for animal welfare, quality management and digitalisation. In addition, Lloyd's Register is another important partner in the development of the guideline, whose expertise lies in the area of certification, which is why Lloyd's Register was responsible for the certification scheme. Lloyd's

Register's collaboration with QM-Consult complements this expertise with a big knowledge in the field of food safety. In addition, the University of Bonn and the University of Applied Science Osnabrück is also involved in the development of the standard in the field of food safety. For the area of occupational safety and health protection, the board is expanded by the competencies of the company SHEQON Managementsystems, which has a high level of knowledge in the areas of occupational safety, quality management and environment in companies. Further important partners in the development of the guideline are ENFIT and the Federal Institute for Agriculture and Food (BLE), which contribute their expertise in the field of international standardisation and certification and conformity testing.

At the beginning of 2021, the Board was expanded to include the area of sustainability (Table 2).

The Panel shall meet at regular intervals. Due to the Corona pandemic, the meetings are held virtually. Both strategic and substantive issues are discussed at these meetings. In order to ensure the continuous development of the standard, the individual pillars are worked out in a collaborative manner, whereby the division of tasks is based on the expertise of the participants. The work are presented briefly at the beginning of the meetings, followed by an open discussion in the panel.

Function Organisation Competences Developement of standard Sustainability **Quantum Quality** Education in food and agri sector, Education **Education &** digitalisation (Blockchain) **Qualification Alliance (EQA)** certification animal welfare QM crisis management Loyd's Register internationale audits audits QM-Consult-REW in audits and food safety safety security Zusammenarbeit mit Loyd's Register Consulting in management system occupational and health SHEQON QM Managementsysteme GmbH consultancy **University of Bonn** food safety food safety international standardization and international standardisation

Quality management

Table 2. Topics of team members.

# 4 Process for guideline development

ENFIT

**HS Osnabrück** 

Impressed by the appearance of numerous Corona hotspots in companies in the food industry, a group of people met for the first time in an online forum in 2020. After a constituent meeting, the decision was made to define concrete steps for the creation of its own industry standard at the beginning of 2021. The first step was to define the scope and to decide which fields of action should be covered by the guide-line. In the second step, the House of Total Safety Culture was created from these preliminary work, which will be presented in more detail later on. On the basis of the draft, the individual "pillars" of the House of Total Safety Culture were divided among the participating committee members for elaboration of the content. Care has been taken to ensure that each pillar is handled by the person with the most ex-pertise in the field. In the next step, the building blocks of the individual pillars were discussed in plenary and their feasibility checked in practice. This was followed by the explicit design of the individual com-ponents before the concept of the HSC standard was

certification

quality management

presented for the first time at the conference of the Gesellschaft für Qualitätswissenschaft (GQW) in Septembre 2021. The guideline is tested now in companies.

After defining the scope of the guideline in the first step, the main structural elements of a House of Total Safety Culture were defined on the basis of this preliminary work. The focus is not on managers in individual companies but on managers in value chains in the agri-food industry. It combines the complexity in integrated management systems. Derived from the requirements of ISO 9001 and the Safety Culture Ladder, it combines the principle of continuous improvement processes in order to remain competitive in the long term.

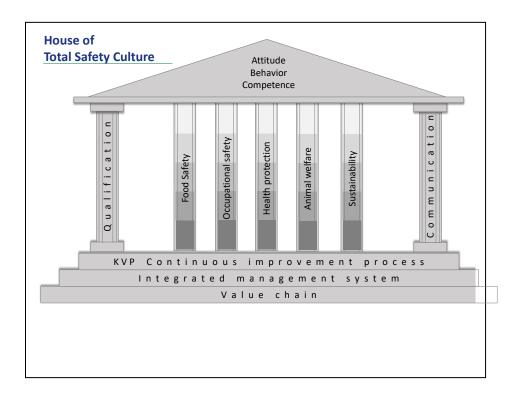


Figure 1. House of Total Safety Culture.

#### **5** Assessment

Next to the guideline it is also very important to have an assessment for this guideline.

In the following, the assessment as part of the certification process is explained in more detail. In this context, the term refers to the assessment of the requirements of the HSC standard implemented in the organization. Within the pillars or fields of action, there are different levels of certification. These range from level 1 to level 4. During certification, it is possible to achieve different certification levels in the different pillars. In developing the levels to be certified, care shall be taken to keep entry barri-

ers for organisations as low as possible. In this way, many organisations will have the opportunity to join the system of the HSC standard. In the further course of the certification system, the requirements are further increased and specified. The guideline should guide organisations on their journey. At the same time, it is important to motivate organisations that have successfully reached the next level of certification to reach further levels and to communicate this successful process to the outside world.

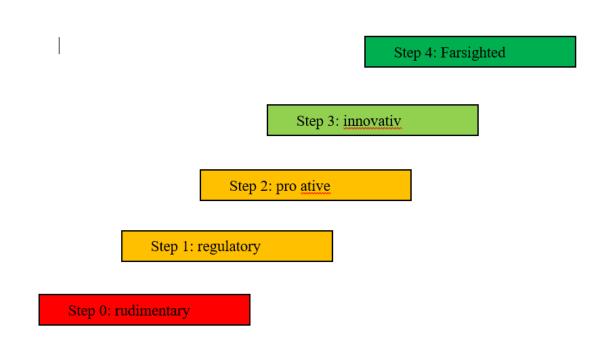


Figure 2. Milestone of Assessment [23].

Certification level 0: Rudimentary

At the lowest level is an organisation which has been shown to have all

meets minimum legal requirements in the areas. Other aspects from the areas are discussed and imple-mented only in phases, provided that the implementation is not too costly or time-consuming. An organ-isation is at this stage when the first incentives and the will to change are evident. The discernible desire for change enables the transition to the first stage, from which certification according to the HSC guide-line becomes possible.

# Certification level 1: Regulatory

An organisation is at this first stage when, in addition to complying with minimum legal requirements, a further willingness to change is clearly visible, for example by drawing up and formulating initial visions for company internal rules. This makes it clear how changes and the transformation process can be initi-ated and shaped in the respective pillar. Similarly, awareness of the (entrepreneurial)

Responsibility for the respective field of action is generated not only among managers but also among employees.

Certification level 2: pro active

Since the focus of the new HSC standard is on changing the behaviour of organisations, it should be evident from the second stage that changed values are not only present, but managers and employees actually start to live the formulated goals and values. In order to achieve this change within organisation and make it recognisable, it is necessary within the organisation of the development of a mission state-ment and the development of a leading culture. Both are prerequisites for attaining the next higher certi-fication level.

Certification level 3: Innovative

In the third stage of certification, the previously formulated guidelines are to be incorporated into the organizational culture. This means that not only that the changed values are lived by the managers and employees, but that the essential aspects of the new mission statement are reflected in the thinking and actions of all involved. It is also expected that the guideline will be anchored in the organisation's mis-sion statement in the long term. Ensure communication and implementation of the new guideline within the organisation and make it visible to outsiders.

Certification level 4: Farsighted

The permanent implementation and communication of the new mission statement in the respective field enables the transition to the fourth certification level. In addition to the consistent implementation of the values and their transmission, the

intrinsic motivation for further optimisation in the respective areas are recognised. Economic aspects alone are no longer the focus at this level.

#### **6** Further steps

In order for employees and managers to meet the requirements of the certification levels described above, a consistent transfer of knowledge is necessary. In order to enable all parties involved to receive training and further training in these areas, additional training and further training opportunities are to be offered as part of the certification according to the HSC standard for all managers in companies, their consultants and auditors. The basis for this can be the ISO 9000 and ISO 22000 stand-ards of the European Organization for Quality (EOQ), in which the steps of personal certification from QM representatives to lead auditors are defined. This offer is oriented to the demands of the Future Commission on Agriculture, which in its final report describes a consistent updating of knowledge and

consistent further education as elementary important for the transformation process [1, 21]. In addition to the topics of risk management, employee management, IT and data management, the topics of environmental, nature and animal protection as well as communication will become increasingly important for a successful transformation process [1]. For this reason, training should focus on these issues. Existing training courses especially in the areas of risk and crisis management as well as animal welfare but also in the area of sustainability and auditor training [20,29] will be further expanded in the future and linked more closely to the requirements of the HSC standard. Existing offerings in the area of online seminars will be supplemented in the medium and long term by further seminar offerings [19, 22]. The same applies to the expansion of formal certification and competence development is important [1]. Existing solutions based on blockchain technology can already be used here [19]. The existing solutions for the HSC standard should also be further developed. First pilot projects with the industry are just running and will support the development.

# 7 Summary

This article has shown that a new understanding of safety culture will become increasingly important in the coming years, especially in the agricultural and food sectors. In order to be able to meet the requirements of the HSC guideline, knowledge transfer and further education are necessary. These must be adapted, in particular, to the needs of the agricultural sector. In order to advance the establishment of the newly developed guideline, it is a short-term goal to present the elements and implementation recommendations as a guide. To this end, the content of the pillars needs to be further elaborated. In addition, the evaluation of the standard by pilot chains is running. Additional partners are needed for this phase, especially from the meat and milk processing sector, but companies from other sectors are also of interest. Finding them is also one of the short-term objectives of the Panel. In the medium term, a discussion with pilot companies involved in the evaluation is envisaged. In addition to the HSC standard, further education opportunities are to be offered by EQA. Therefore, the content design and implementation of the seminar offer is also a medium-term goal of all participants.

# Literature

1. Zukunftskommission Landwirtschaft: Zukunft Landwirtschaf. Eine gesamtgesellschafliche Aufgabe. Empfehlungen der Zukunfskommission Landwirtschaf, Rangsdorf (2021).

2. Bachmann, G.: Wir leben im Zeitenwandel, in: Bornkessel, S., Igl, G., Janssen J., Pape, S., Petersen, B., Pfannes, U., Reiß, U., Röwer, D., Teitscheid, P. VDOE: Qualitätsmanagement in der Ernährungswirtschaft. Carl Hanser Verlag, Mün-chen (2020)

3. Bornkessel, S., Igl, G., Janssen J., Pape, S., Petersen, B., Pfannes, U., Reiß, U., Röwer, D., Teitscheid, P., VDOE (Hrsg.): Qualitätsmanagement in der Ernährungswirtschaft. Carl Hanser Verlag, München (2020).

4. DIN, https://www.din.de/de/ueber-normen-und-standards/basiswissen, letzter Zugriff am 03.08.2021.

5. Petersen, B., Lehnert, S.: Qualitätsmanagement maßgeschneidert für die Agrar- und Ernährungswirtschaft. 1. Auflage. Tredition GmbH, Hamburg (2017).

6. EU (2002): Verordnung (EG) Nr. 178/2002 des europäischen Parlaments und des Rates vom 28. Januar 2002 zur Festlegung der allgemeinen Grundsätze und Anforderungen des Lebensmittelrechts, zur Errichtung der Europäischen Behörde für Lebensmittelsicherheit und zur Festlegung von Verfahren zur Lebensmittelsicherheit. https://eur-

lex.europa.eu/LexUriServ/LexUriServ.do?uri=CONSLEG:2002R0178:20080325:de:PDF

7. IfSG "Infektionsschutzgesetz vom 20. Juli 2000 (BGBI. I S. 1045), das zuletzt durch Artikel 9 des Gesetzes vom 16. Juli 2021 (BGBI. I S. 2947) geändert worden ist" https://www.gesetze-iminternet.de/ifsg/IfSG.pdf

8.EU (2004): Verordnung (EG) Nr. 852/2004 Des Europäischen Parlaments und des Rates vom29.April2004überLe-bensmittelhygiene.https://eur-lex.europa.eu/legal-<br/>content/DE/TXT/PDF/?uri=CELEX:02004R0852-20090420

9. Initiative Tierwohl, https://initiative-tierwohl.de/tierhalter/kriterien/, letzter Zugriff am 03.08.2021.

10. DLG e. V., https://www.dlg-nachhaltigkeit.info/de/dlg-standard/bewertungskriterien, letzter Zugriff am 03.08.2021.

11. GLOBALG.A.P., https://www.globalgap.org/de/for-producers/globalg.a.p./, letzter Zugriff am 03.08.2021.

12. ENFIT, http://enfit.eu/de/start/, letzter Zugriff am 03.08.2021.

13. IAEA Safety Series No. 75-INSAG-4: Safety Culture. (PDF) 1991 https://www-pub.iaea.org/MTCD/publications/PDF/Pub882\_web.pdf.

14. Eisenbahnagentur der Europäischen Union: Förderung einer positive Sicherheitskultur im Eisenbahnverkehr (PDF)

https://www.era.europa.eu/sites/default/files/library/docs/leaflets/promoting\_a\_positive\_safety\_cu lture\_de.pdf

15. Bundesministerium für Verkehr und digitale Infrastruktur (BMVI), https://www.bmvi.de/SharedDocs/DE/Artikel/LF/sicherheitskultur-luftverkehrssicherheit.html, letzter Zugriff am 03.08.2021.

16.Werner-Keppner, E., Koch, V.: Was bedeutet Sicherheitskultur im Unternehmen?Sicherheitsforum6(16),61-63(2016).https://www.etalon-international.com/media/2016\_06\_Sicherheitskultur.pdf

17. Becker, M.: Stufe für Stufe sicherer – Mit der Safety Culture Ladder zum besserem Arbeits- und Gesundheitsschutz. Qual-ität und Zuverlässigkeit 6(65), 36-39 (2020).

18. Safety Culture Ladder NEN: https://www.safetycultureladder.com/de/, letzter Zugriff am 04.08.2021.

19. Education and Qualification Alliance SCE: https://www.eqasce.de/digitalisierungsstrategie/, letzter Zugriff am 04.08.2021.

20. Lloyd's Register Deutschland: https://www.lr.org/de-de/, letzter Zugriff am 04.08.2021

21. Schönen, C., Lahmann, T., Große-Streine, L., Birkle,I.:Entwicklungen und Treiber für das Qualitätsmerkmal Tierwohl in Wertschöpfungsketten der Agrar-und Ernährungswirtschaft (2021). 1. Auflage. https://www.eqasce.de/wp-content/uploads/2021/08/Wissen-kompakt-02-20210803.pdf

22. Sommerhoff, B., DGQ (Hrsg.): QM im Wandel- Personenzentriertes Innovations-und Qualitätsmanagement (2021). 1. Auflage. Carl Hanser Verlag, München

23. Parker, D., M. Lawrie, P.T.W. Hudson: A framework for understanding the development of organisational safety culture (2006)

24. Broemme, A., Bursig, H.-P., Fritzen, B., Strametz, R., Weidringer, W., Wernicke, B.: Im Krisenfall an einem Strang ziehen. Qualität und Zuverlässigkeit 10(66), 34-37 (2021)

25. Pietrzyck, K.; Jarzębowski, S.; Petersen, B. Exploring Sustainable Aspects Regarding the Food Supply Chain, Agri-Food Quality Standards, and Global Trade: An Empirical Study among Experts from the European Union and the United States. Energies 2021, 14, 5987. https://doi.org/10.3390/en14185987

26. International Featured Standards, https://www.ifs-certification.com/index.php/en/, letzter Zugriff am 28.10.2021.

27. British Retail Consortium, https://www.brcgs.com/, letzter Zugriff am 28.10.2021.

28. Global Food Safety Initiative, https://mygfsi.com/, letzter Zugriff am 28.10.2021.

29. Krieger-Guess, S., Hannus, T. Qualitätsmanagement in der Lebensmittelindsutrie. Behr's Verlag Hamburg 2023 (in print)