# HACCP: Identification of CCP, CP, PRP, oPRP in the standards IFS, BRC, ISO 22000 – practical examples

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Every company is committed today to produce safe food and to fulfill all requirements regarding food safety. The quality of food is a major focus in the public domain. Even, though the risk potential for complaints is still very high. In the dairy industry hazards by fruits, herbs and spices as ingredients for dairy products, but also the dairy products themselves play a significant role. Often quality deviations in food are published and unsafe and hazardous food are recalled immediately from the market.

Based on the Code of Practice for General Principles of Food Hygiene, briefly Codex Alimentarius, there have been numerous stages to establish HACCP principles in the product standards BRC or IFS and in the international management norm ISO 22000. All standards are based on this original Codex Alimentarius HACCP system and request that its basic principles are applied.

The identification of CCPs is fundamental for the maintaining of an effective HACCP system. Based on a reproducible assessment during the hazard analysis of all associated risks, biological, chemical, physical and allergenic risks classified as relevant must be eliminated or at least be managed to an acceptable level before consumption of the food. If such control is not implemented, the food is unsafe. But the identification of CCPs using the Codex Alimentarius succeeds only conditionally.

With the development of new regulations new requirements have been created. Annex II to Regulation (EC) 852/2004 of the European Parliament and of the Council on the hygiene of foodstuffs lists basic requirements for the production of safe products. However, these are generally described as very basic conditions and activities that are necessary for the maintenance of a hygienic environment throughout the food chain, suitable for production, handling and distribution of safe consumer products for human consumption.

These general preventive actions (PRPs = prerequisite programs) have been added in the different standards. Specific requirements are defined in the ISO 22000 and extended in the GFSI recognized standard FSSC 22000. All food safety standards require effective control measures to minimize the risk of food contamination. In addition to the general prerequisite programs ISO 22000 as globally valid standard defines operational prerequisite programs, briefly oPRPs. The definition is difficult to understand.

An oPRP is identified during the hazard analysis as essential in order to control the likelihood of introducing food safety hazards to and/or the contamination or proliferation of food safety hazards in the product(s) or in the processing environment (Source: ISO 22000). It is important for practice that a clear distinction between the CCPs and the oPRPs must be done. The similarities and differences between CCPs and oPRPs are listed in Table 1.

| | CCP | oPRP |
|---|---|---|
| Control of health hazards | X | X |
| Measures to control (control measures) | X | X |
| Acceptable criteria (e.g. visual detection of sieves. The acceptable criterion is the integrity of the sieve) | | X |
| Control measures are operated as critical measurable limits (e.g. final heating. This means the limit is ≥ 120°C) | X | |
| Monitoring of a criterion which separates acceptability from unacceptability.<br>Monitoring as proof, if an operational PRP is installed and effective. | | X |
| Real-time monitoring as proof, if determined control measures are followed. | X | |
| The frequency of the control activities | X | X |
| Corrective actions for uncontrolled conditions | X | X |
| Responsibilities and authorities | X | X |
| Records for control activities (documentation) | X | X |

*Table 1: Criteria for oPRPs and/or CCPs*

All standards require the use of a decision tree or other tools that represent a logical approach regarding the justification of the identification of CCPs. Using various examples it can be explained how a modified decision tree can be used to identify CCPs, oPRPs and PRPs. So far no standard requires identification of a CP (critical point), except the IFS Food standard. The default is that a CPs is monitored and the monitoring is documented.

IFS Food defines a CP like an oPRP, according to the specification of ISO 22000. In practice, this is particularly difficult for all companies, which have integrated IFS and ISO 22000 into their management system, because now there are two separate terms and one definition, as especially the term CP was already used by almost every company.

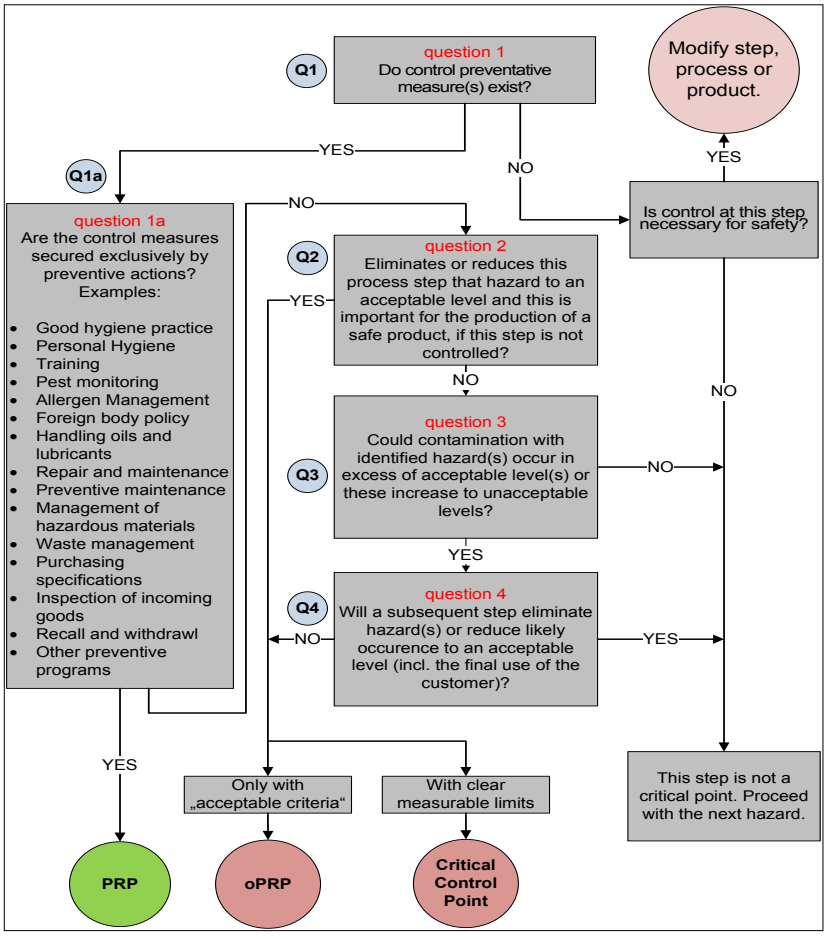


*Figure 1: Identification of CCPs, PRPs and oPRPs using a modified decision*

*tree (Original).*

Finally, all regulations and standards require that the HACCP system covers all ingredients, each product or product group and every process, from goods receipt to delivery, product development as well as product packaging.
For this reason, using the example of an electronic early warning system illustrates how a risk assessment of raw materials can be created to identify existing risks, minimize them and ultimately control them.

SAFEFOOD ONLINE bundles all valid data and presents them as so-called risk matrix. The chosen example for pear shows in the risk matrix as critical risks amitraz and the presence of sulfur dioxide / sulfite. In addition there are a further number of known hazards, especially different pesticides that were found in pears in an unacceptable amount.

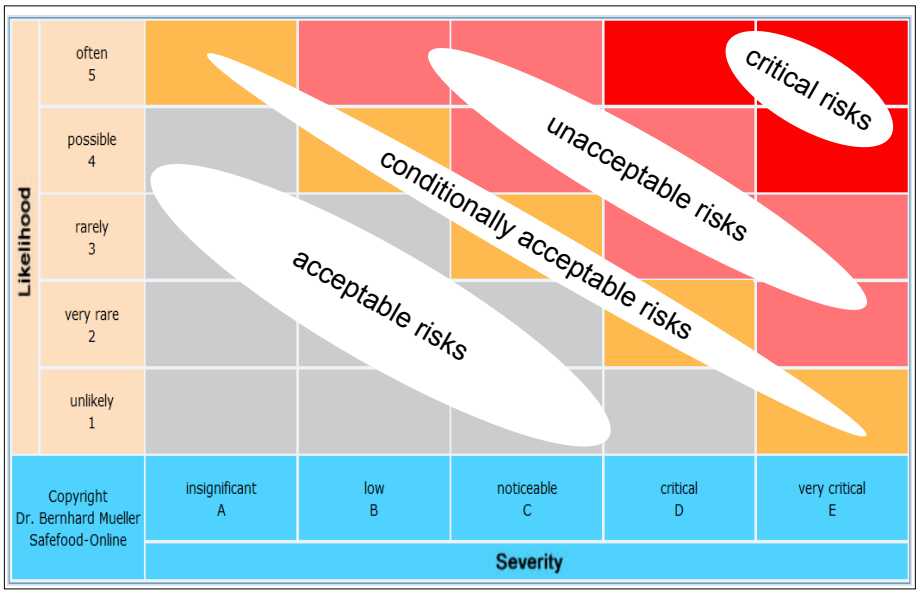


*Figure 2: Model "risk matrix" with SAFEFOOD ONLINE (Original).*

Comprehensive information - such as country of origin, affected food, safety hazard, year and type of message - help to assess the results achieved in each specific case in detail.

The database SAFEFOOD-ONLINE was developed to systematize the risk management and thereby increase safety of products or purchased raw materials. The risk assessment takes into account the frequency of official notifications, the number of responses and the severity of the effect. The classification is done according to a fixed algorythm and thus covers all notifications in the risk matrix.

The risk matrix allows an assessment of risks at an early stage and results in the definition of appropriate measures to avoid incidents and crises initiated by products. Using the present RASFF data, supplemented by other available internal information, it is possible to identify risks quickly and efficiently.

Using the query "HACCP export" it is possible to create a risk assessment for raw-/input materials based on all notifications present in the database.

When querying all known hazards are summed and displayed in a table and a corresponding risk class is assigned.

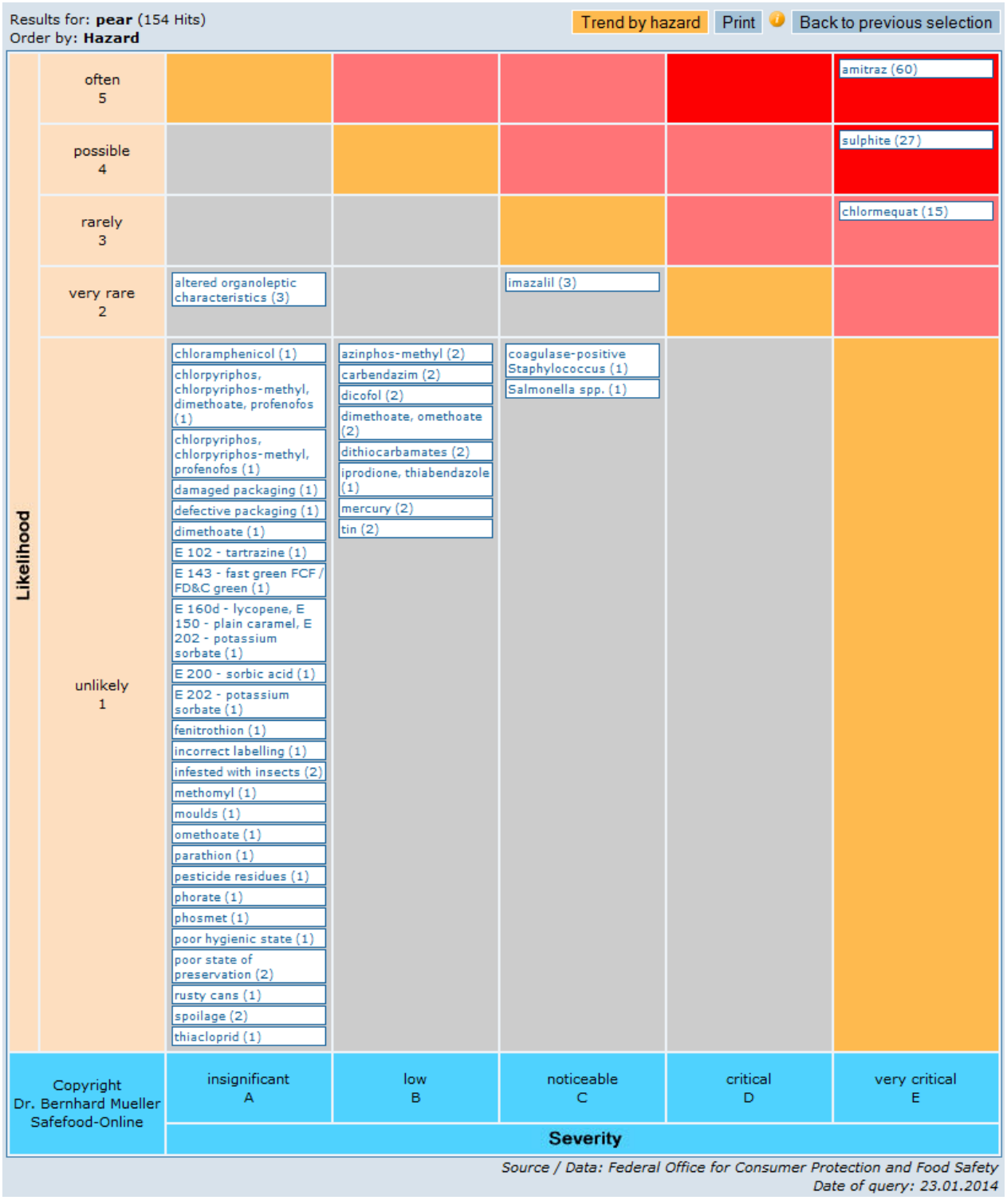


*Figure 3: Risk analysis on the example of pears (Original)*

At the end of the output list is an Excel printout with a four-point recommendation list of possible instructions for the company requested for the selected foodstuff. All HACCP exports can be archived as file.

| Risk level | Preferred instructions |
|---|---|
| A1, A2, A3, A4<br>B1, B2, B3<br>C1, C2<br>D1 | **Level 1**<br>The identified hazards are defined in the agreement / specification and must be excluded from the subcontractor or supplier in writing, to avoid appearance of such hazard. |
| A5<br>B4<br>C3<br>D2<br>E1 | **Level 2**<br>In addition to the agreement / specification the supplier is required to provide a certificate of analysis by an accredited laboratory for the goods delivered to confirm the exclusion or compliance of the specified hazards |
| B5<br>C4, C5<br>D3, D4<br>E2, E3 | **Level 3**<br>In addition to the confirmation in level 2, the supplier has to confirm that this raw material / product does not come from a concerned country. |
| D5<br>E4, E5 | **Level 4**<br>In addition to the levels 2 and 3, after delivery the raw material is sampled and analyzed regarding the hazard (s) defined in an accredited laboratory. The release of the raw material (food) is done only after the analysis results are available as a positive release. Those suppliers are audited within a specified timeframe (e.g. supplier audits). |

*Figure 4: Recommendations by creation of HACCP exports with Safefood-Online*

For more information about the system is available at www.safefood-online.com.

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