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Method Article

Aiding eco-labelling process and its implementation: Environmental Impact Assessment Methodology to define Product Category Rules for canned anchovies



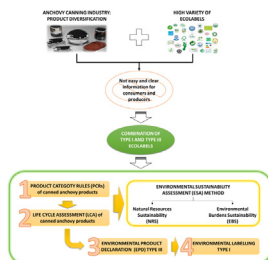
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GRAPHICAL ABSTRACT



ABSTRACT

To be able to fulfil high market expectations for a number of practical applications, Environmental Product Declarations (EPDs) have to meet and comply with specific and strict methodological prerequisites. These expectations include the possibility to add up Life Cycle Assessment (LCA)-based information in the supply chain and to compare different EPDs. To achieve this goal, common and harmonized calculation rules have to be established, the so-called Product Category Rules (PCRs), which set the overall LCA calculation rules to create EPDs.

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This document provides PCRs for the assessment of the environmental performance of canned anchovies in Cantabria Region based on an Environmental Sustainability Assessment (ESA) method. This method uses two main variables: the natural resources sustainability (NRS) and the environmental burdens sustainability (EBS). To reduce the complexity of ESA and facilitate the decision-making process, all variables are normalized and weighted to obtain two global dimensionless indexes: resource consumption (X_1) and environmental burdens (X_2).

- This paper sets the PCRs adapted to the Cantabrian canned anchovies.
 - ESA method facilitates the product comparison and the decision-making process.
 - This paper establishes all the steps that an EPD should include within the PCRs of Cantabrian canned anchovies.
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ARTICLE INFO

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Specifications Table

Subject area	Select one of the following subject areas: <ul style="list-style-type: none"> • Chemical Engineering
More specific subject area	<i>Describe narrower subject area</i>
Method name	<i>Product Category Rules (PCR) of canned anchovy based on Environmental Sustainability Assessment (ESA) method</i>
Name and reference of original method	<i>Product category rules (PCRs) according to ISO 14025:2006. Product group: UN CPC 2124. Fish, otherwise prepared or preserved; caviar and caviar substitutes.</i>
Resource availability	Gabi Software

Method details

To perform the Life Cycle Assessment (LCA) of the individual products it is necessary to define the Product Category Rules (PCRs). PCRs document is defined in ISO 14025 [1] as a set of specific rules, requirements and guidelines for developing Type III environmental declarations for one or more product categories. This PCR document specifies the rules for the underlying LCA [2,3] a sets minimum requirements on EPDs for a specific product group.

In particular, this work defines the PCRs for the canned anchovy products of Cantabria Region (North of Spain). This industry has a high product diversification due to the great worldwide competitiveness and demand, which makes necessary the development of marketing strategies to reach and maintain a leading position in the market. The canned anchovy sector has developed a wide range of new products using several types of oil; and packaging; and anchovy species [4]. In previous works, authors have evaluated the management of the anchovy residues generated during the canning process [5] and have assessed the environmental performance of the production of one can of anchovies in olive oil (from gate to grave), proposing several improvements to reduce its environmental impact [6].

Up to date, the only EPD programme which has published a PCR document for canned fish is the *International EPD® System* [7] throughout the document “*Fish, otherwise prepared or preserved; caviar and caviar substitutes*” [8]. However, there is any developed EPDs using this PCR. This work is based on this PCR document proposing a new impact assessment method. Usually PCRs apply CML 2001 [9], a set of metrics that in some cases could be difficult to understand for producers and consumers and thus confuse the process comparisons. The proposed method, named Environmental Sustainability Assessment (ESA) reduces the complexity of LCA improving the comprehension of the results and thus assist the decision-making process [10]. In Section PCRs of canned anchovy products, the ESA method

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