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TRACEABILITY OF PORK - ADVANTAGES, BENEFITS, MONITORING

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Abstract

Globalization of trade expands distribution of products and services worldwide, making it more difficult to control the content and quality. To prevent "food terrorism it is necessary to know the evolution of animals from birth to end of life. As long as an animal remains in the same group is easily identified by group ID. But once it leaves the farm, things become more complicated and traceability implementation must take into account many factors. For analysis, the firm needs information about vaccination, food, medication and supervision.

To prevent consumer illness it is very important to monitor (track) the products chain. If a contaminated batch of food is found it will be easier to identify where they were distributed, and what point in the chain of traceability has been contaminated. Monitoring traceability is a complex process, if we consider the steps taken to obtain meat, and therefore, involves the use of a computer system; making it the classic way is difficult and expensive.

Keywords: *pork, food safety, traceability, quality*

Introduction

The first international definition of traceability was given in ISO 8402, 1987, as "*the ability to retrieve the history, use or location of an entity by recorded identifications*", an entity may designate: a task, process, product, body or a person.

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Other definitions regarding traceability:

ISO 8402:1994	possibility of tracing the history, application or location of an entity through information recorded
UE Regulation – Agor food products law 8/5/01	ability to trace and track food, or substances producing animals in all stages of production and distribution
ISO 9000:2000	ability to pursue development or location of what must be considered (European Commission, 2004)
General Law of agro-food products nr. 178/2002 (taken in law no. 150/2004)	ability to supervise and control the evolution of a product: the place of origin, date of manufacture, processing, or applied to a type of product quality Ascultați Citiți fonetic

Material and methods

Traceability is necessary especially in the agro-food products for human consumption but can be applied in any field of economics (eg provenance of a work of art or a car if they are implemented for the tracking system). Traceability is pursuing a product and processing information related to it at each stage of the production chain. As the supply chain process, traceability can be conducted in two different directions: *forward* or tracking *downward* traceability (the ability to locate a product based on specific criteria, at any point it could find on the chain), monitoring *backward* or *upward* traceability (ability to identify the origin and characteristics of a product based on criteria established in a uniform manner for all intents and supply chain).

Requirements of individual areas of the food industry and food areas are very different, yet they share the full certification path that it travels a raw material from supplier, through the various stages of production and trade up to the final consumer. Traceability is an indicator of the power supply company in the market. Thus, the company builds and reinforces consumer confidence in their products, since both have total control over its production traceability and on the market, it can occur at any time withdraw from the market entirely or to a certain point selling the product for one reason or another has proved inadequate or does not meet current legislation.

Results and discussion

The importance of traceability is in its objectives, namely:

- Production of safe food (healthy) human consumption;
- Animal health protection against the spread of diseases (they are much easier to detect outbreaks of infection);
- Management of emerging diseases.

Traceability helps authorities to eliminate the risks that animal diseases or contaminated foods posed to food safety or food supply. It also guarantees the origin of

animals or certain breeds that are regional specialties. It ensures a transparent traceability for food and animal feed. To maintain consumer confidence, the identification and control is essential for all livestock farmers. An effective traceability system, using the common language of computing, can provide pork trade in Europe and even global markets.

In traceability is applying the principle "*one step forward, one step back.*" So, any element of the production chain is required to hold toward all necessary information about product origins, namely the origin of raw and auxiliary materials to hold information relating towards the next item delivery date and destination. To achieve this all you need to find ongoing series (product, location, manufacturer, carrier, vendor, etc.).

The most important principles of traceability are:

- *identify the individual.* Each stage of the route of a product (production, transport, supply, storage, sale) is assigned an identifier (key or link to data). Sole contains useful information about the product or the entire batch;
- *Reception and transmission of data.* How to record and data transmission can be chosen depending on the degree of accuracy and speed of transmission, which are suitable for product coding. This principle is the unit of measurement traceability;
- *data reporting.* Once the product reached the market is required as identification of data to be available to be able, if need be rebuilt production chain. Data transfer must be made in a form of "dialogue" which provides decoding of information retrieved by the recipient;
- *connection information.* If the power transmission of data is lost and the steps which ultimately results in traceability. On resuming data communication connection is restored.

The advantages and benefits of traceability

Feeding is the essential condition for human existence. The progress of human society is reflected in the production of food. Agriculture and, in general, fruit and food have become the recourse to scientific evidence in their practice. The higher degree of civilization, man is increasingly interested in the manner in which to obtain food, nutritional content and quality and their origin, what has been built to produce them in agriculture and / or food and they an important role for the state of his health, which allow efficient expression in economic activities, scientific, cultural.

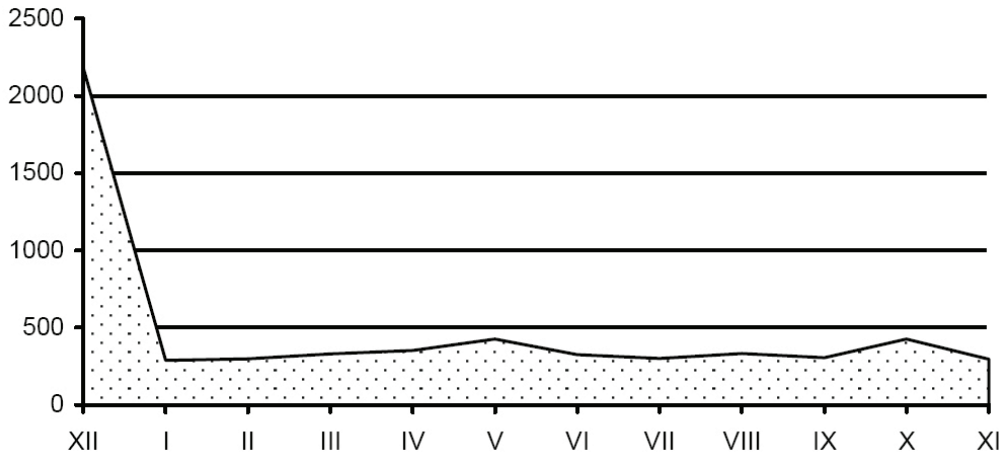
Concerns, relatively new, producers and consumers, aimed at ensuring food quality and thus the food security of the population, was directed towards actions to enable the traceability of food products knowledge, it has a number of advantages for companies producing and for consumers.

Meat is an important source of high biological value protein, fats (the pork approx. 30%), glycogen, minerals and vitamins (composition is appropriate to their age and nutritional status of the animal), it is therefore a food base. For these reasons, meat from different animal species, is preferred by all mankind, intervening consumption

habits, including sometimes religious nature.

Statistics show that on average, a Rperson from Romania consumes 60 kg of meat per year, compared to 90 kg is how the EU average. Here, half of consumption, ie 30 kg of pork is represented (*Figure 1*) by tradition, the pig slaughter weight is recorded in December. For this range, if we compare it to other states of the Community, it appears that we are below the European average.

Figure 1 – Number of slaughtered pigs in one year, in Romania, thousands of heads (December 2008 – November 2009)



In the period 2008 - 2009, slaughtering of pigs in specialized industrial units (slaughterhouses) in Romania increased by 16.5%, while pork production increased by 20.6%. One advantage is to be able to operate safe in case of need (for retrieval and removal of goods, to locate the source of the problem, to prevent the spread of the situation, stopping the increase in the number of people injured).

For any company located in a food chain, monitoring the use of traceability helps improve the image of her part, presenting attractive to consumers interested in knowing the origin of products, the conditions under which they were obtained, increasing also its strength competitive market. Also, monitoring reports may be obtained actual production and management, with repercussions on the growth of business competitiveness. Simultaneously, management is providing support in planning, organizing and conducting business and taking strategic decisions and current. The information is provided by engineers / technologies of the companies involved in the pathway, exerting its real-time monitoring and control activities.

Monitoring traceability is a complex activity, if we consider the many steps to be taken until a product reaches the consumer (to obtain agricultural raw materials, transportation, warehousing and storage, successive processing, etc..). Therefore it is necessary to use an adequate information system, focusing on computer component.

Meat producing companies built and strengthen consumer confidence

in their products, traceability has become a part of their market positioning. According to experts in the field, advantages and benefits of implementing a monitoring system for traceability can be grouped as follows:

- *preventive security*. Supports aspects of consumer confidence and distributors for products sold;
- *possibility of safe actioning*. If irregularities appear possible to find and withdraw the product is good or locating the source of the problem to prevent it spreading.
- *responsibility delimitation in the chain of traceability*. In case the source is known, distribution steps can be followed, and if a problem arises with those who could bear a responsibility to prevent and did a variety of reasons.
- *clear advantages of the user*. The quality system must be certified according to DIN EN ISO 9000. Thus, firms can develop a full quality management, from supplier to the final consumer. Specific rules, depending on the source material (eg pork), which must meet specific requirements different from those of other food products industry, enjoys specific integrated modules (eg traceability), so that the finished product be clearly identified;
- *Consumer confidence* by certifying a product's route through the various stages of production, from supplier to buyer;
- *compliance with legal requirements*. At each stage of production must comply with legal process;
- *obtaining reliable information*. This information is useful for manufacturers, distributors, trasportatorilor, traders, consumers and verification bodies and agencies;
- *represents an elastic concept*. Each company decides according to legal rules, standards and specific decisions on the depth of their own concept of traceability;
- *ensures quality control*. In a comprehensive system of enterprise management, quality control is an area of integration to ensure a transparent and traceable without omissions.

Thus, each functional area can be provided with information and points of taking control, from supply and to markets. Traceability system can carry out a careful control of inputs and outputs of production, allocating the correct data. Transparent planning processes secure internal audits are also part of quality management system, meaning that the user can achieve the exact quality standards compliance, better product quality and customer satisfaction and optimum management of complaints and returns;

- *can be integrated into ERP*. An ERP (Enterprise Resource Planning) is a complex multi-modular software application that integrates a company's business processes in order to optimize and increase their effectiveness. In terms of functionality, an ERP application covering the following areas of interest of a business: production planning, procurement management, inventory control, interaction with suppliers, customer relationship management, order tracking, financial management, human resource management.

Conclusions

From the analysis we have developed the following conclusions:

- Traceability ensures a transparency for agro-food products and animal feed;
- Product traceability is achieved by the code identification;
- Having the total control of traceability over the production, exploitation can withdraw from the market in any moment their inadequate products. An effective traceability system, using the common language of computing, can improve pork trade in Europe and even global markets;
- Monitoring traceability in pork production represents insurance of the company in terms of risk avoidance and thus of failures that are generating economic losses and damage its market position;
- Producers should use a transparent quality management according to HACCP and can demonstrate at any time without omission of origin certification.

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