

Rijswijk, 2009

A European study clearly shows that:

Returnable plastic crates are better than one-way cardboard and wooden boxes in terms of their sustainability

For the first time, a European study shows in no uncertain terms that returnable plastic containers for fruit and vegetables are environmentally better than one-way cardboard and wooden boxes. Moreover, returnable plastic containers are by far the most cost-efficient system. And – last but not least – in practice, the production of plastic containers leads to the least amount of accidents.

In April 2005, the “Stiftung Initiative Mehrweg” (Foundation for Reusable Systems) commissioned a ‘Life Cycle Assessment’ (LCA) study to analyse and compare the common packaging systems for fruit and vegetables in Europe with respect to the environmental impacts related to their use. Knowledge should also be gained on the costs and social aspects regarding sustainability. The study was carried out by the Department of Life Cycle Engineering (GaBi) at the University of Stuttgart and PE International. A number of European partners cooperated, namely FEBE-ECOLOGIC (Ravenna, Italy), Escola Superior de Comerç Internacional (University of Barcelona, Spain) and BIO Intelligence Service S.A.S. (Ivry-sur-Seine, France).

From production to waste container

The study compares the whole life cycle of the three packaging systems at European scale, from production to waste container. It looks at the five most important fruit and vegetable producing countries (Spain, Italy, France, Netherlands and Germany) and at four of the biggest consumer markets (France, Netherlands, Great Britain and Germany). Economic and social indicators were regarded for assessing the sustainability, as were the ecological merits and disadvantages of the different systems (see box).

What was studied?

The SIM-study examined and compared the three packaging systems with regard to the following aspects:

Environmental effects

- The Primary Energy Demand
- The Global Warming Potential – “greenhouse effect”
- The Ozone Depletion Potential – “impact on the ozone layer”
- The Acidification Potential – contribution to “acid rain”
- The Eutrophication Potential – contribution to “over-fertilisation”
- The Photochemical Ozone Creation Potential – contribution to “summer smog”

Economic indicators

- The Life Cycle Costs

Social indicators

- The total time of work
- The total time of women work
- The differentiation of the working time into qualification levels
- The number of lethal and non-lethal accidents

Results

An American study carried out in 2004 (Franklin Life Cycle Study) showed clearly that returnable plastic containers were better in terms of their sustainability than non-returnable cardboard boxes. It established that the production and use of returnable plastic containers generated 29% less emissions, 39% less energy demand and 95% less waste than one-way cardboard and wooden boxes. The European SIM-study confirms these findings with regard to returnable plastic crates.

SIM-director Clemens Stroetmann says: "Returnable plastic containers have proven again to be environmentally friendlier, safer en lore cost-effective than one-way cardboard and wooden boxes. Even in the conservative scenario with an average life cycle of 10 years. The environmental benefits can be even more important if the life cycle of plastic crates is prolonged and the use of recycled materials in production is increased."

People, planet and profit

"Retailers who want to be socially responsible cannot but choose plastic", says Arie de Bruijn, Euro Pool System's CEO. "Whichever way you look at it, the study clearly shows that returnable plastic crates for transporting and storing fresh products are better for *people* and for the *planet*. Besides, all costs considered, it is also the cheapest alternative! We already knew this, of course, but it is nice to have an independent study confirm it."

How will the results of this study affect the behaviour of the European retail industry? De Bruijn says: "Many European retailers already work with returnable plastic containers, although there is also a big group who still works with wooden and cardboard boxes. We hope the SIM-report will further convince those retailers of the benefits of plastic. Besides, the study fits into the mentality of our time: after all, companies that operate in a sustainable manner and where numbers prove it are more appreciated by the West European consumer."

Striking conclusions

Some striking conclusions of the SIM-study are:

- In all scenarios, during their long life cycle, returnable plastic containers are considerably cheaper than one-way cardboard and wooden boxes.

