



GM and non GM supply chains: Their CO-EXistence and TRAcability

## Outcomes of Co-Extra

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### Consumers' attitudes to the EU traceability and labelling regulation

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The introduction of new technologies in the food industries have revolutionized the efficiency of food production, but has also exerted important demand side effects that cannot be dismissed. This is because new technologies are associated with scientific uncertainty given that not all the social and individual consequences of their inception are fully known. As Moschini (2008) argued, based on Gaskell et al. (2006), general public opposition or reticence towards genetically modified (GM) agro-food applications responds to: i) human health and environmental concerns, ii) ethical considerations and iii) the role of patents and property rights of multinational corporations. This variety of reasons against GM agro-food production reveals a complex formation process of public opinion towards GM agro-food production and therefore a complex process for understanding consumers' final decision and intentions regarding GM food. The main objective of our study is to investigate consumers' general attitude towards GM food and their willingness to pay (wtp) a premium for conventionally produced non-GM food and organic food.

To do that we have first performed a literature review in order to bring together the published evidence on the behavioural frameworks and evidence on the process leading to the public acceptance of GM food. In doing so, we employ a set of clearly defined search tools and a limited number of comprehensive key words. This review concluded: first, that the population can be segregated in three main groups regarding attitudes toward GM food, namely: (i) anti-GM food or pessimistic, (ii) risk-tolerant or information searchers and finally (iii) GM-accepters or optimistic. Second, that consumer attitudes towards GM food are driven by three main dimensions, i) risks and benefit perceptions associated to GM food; ii) individual values and attributes and finally iii) knowledge and its relation with values.

From the previous review it was also concluded that consumer behaviour towards GM agro-food production has many analogies with other behaviours analysed in the past. This is the case of other risky technologies such as pesticide risk exposure, hormone-treated meat, atomic energy and so forth. For instance previous studies based on the Fishbein Multi-attribute Model (Fishbein, 1963) revealed that an attitude or intention towards a product or behaviour is based on knowledge about the product or behaviour itself (Bredahl, 1998); that is, on the attributes that people associate to the product or behaviour (Frewer et al., 1998). Following this theory, we have considered that the best way to study consumers' final intentions towards GM and non-GM agro-food products entail the application of choice experiments. Within the choice experiment framework individuals are allowed to select among different alternative options, where each option is characterised by a number of attributes with different levels (Burton et al., 2001). Therefore individuals will choose an alternative, among a set of alternatives that generates to them the highest utility.

Following consultation with stakeholders, a number of food commodities for study were to be chosen. On the one hand fresh food, e.g. fresh tomatoes, on the other long-stored processed commodities, e.g. oil seed or cornflakes. The analysis was performed by means of a multi-country survey (Denmark, Germany, Spain, GB and Poland). The main results of the survey can be summarized as follows. Freshness and flavour can be considered as the most important element for food purchasing. However, in GB, Poland and Spain price is also considered. There is a general negative attitude towards GM food in all countries. University scientists and consumer groups are the more trusted sources of information, and Denmark and Germany responders feel themselves more informed than the rest. Regarding to organic food, only German and Danish consumers do spend on organic food. Moreover there is an agreement among countries regarding positive attitudes towards organic food. The study also revealed that GM technology is not considered by respondents as very risky compared with pesticides, artificial hormones or irradiation. Finally, respondents in all study countries prefer conventional food over GM food. However, Spanish respondents made a slight exception since they were prepared to pay a premium for GM food with health benefits. Moreover, all study country respondents except Polish ones, assigned a higher utility for organic food in relation to conventional counterpart.