

## PAPER

## What foods are identified as animal friendly by Italian consumers?

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### Abstract

In the Italian market, voluntary certifications implying higher levels of animal welfare generally fall into wider production schemes. Despite the results of EU surveys indicating that about 50% of Italian consumers can easily identify and find animal-friendly products, they still are distributed scarcely or discontinuously in the main retail chains. To assess the apparent contradiction between the intricate information consumers receive from labels and their declared awareness about animal welfare, a survey was conducted in Emilia Romagna region on 355 Italian consumers (face-to-face interviews based on a structured, semi-close-ended questionnaire). Overall, consumers showed a low degree of knowledge about animal welfare attributes, animal farming conditions and animal protection policies (about 30% of correct answers), and a low level of awareness of the effects of their purchasing choices on the welfare of farmed animals (22%). The respondents also showed difficulties in identifying animal-friendly products and often confused them with other certified foods, having sometimes a weak connection (or none at all) to animal welfare (*e.g.*, Protected Designation of Origin products). However, most consumers declared to be ready to pay a premium price in name of animal welfare. In conclusion, a labelling system for the welfare content of animal-derived foods is confirmed to be an effective strategy to compensate the efforts of farmers in improving animal welfare, provided that the information given is clear and able to fill the substantial lack of consumer knowledge.

### Introduction

Consumers' perception of quality attributes of animal-derived food has gradually been changing during the last decades. The increased concerns for food safety (Kramer, 1990; Sparks and Shepherd, 1994; Hughes, 1997; Kafka and von Alvensleben, 1998; Verbeke and Viaene, 2000) were followed by broader concerns, which progressively included the intangible features of the products and the ethics of the productive process (*i.e.*, animal welfare, sustainability, fair trade) (Verbeke and Viaene, 2000; Reynolds, 2002; Mayfield *et al.*, 2007; Miele and Ara, 2008; Martelli, 2009; Verbeke, 2009; Averós *et al.*, 2013; Down and Burke, 2013; Vanhonacker and Verbeke, 2014).

In recent years, the issue of animal welfare emerged as a key concern for European citizens, as confirmed by many statistical surveys (European Commission, 2005; Eurobarometer, 2005, 2007a, 2007b) and by policies aimed to improve the living conditions of the farmed animals and to impose consistent trading rules (European Commission, 1998, 1999, 2006a, 2007a, 2007b, 2008a, 2008b). Increased awareness towards animal welfare encouraged (especially in some Northern European countries) the development of particular products, known as animal-friendly, obtained in compliance with specific high-welfare production schemes requiring animal protection standards above the minimum mandatory levels. It is worth highlighting that at European level, the spreading of several production schemes led, in some cases, to a certain degree of confusion and limited the consumers' capability of distinguishing the specific ethical values underlying the different processes. To increase consumers' awareness and reduce information distortion, the hypothesis of a common European label on animal welfare based upon a unique certification scheme is presently under investigation (European Commission, 2006b; Gavinelli *et al.*, 2008; Di Pasquale *et al.*, 2011; EESC, 2011).

In order to have a mutual certification agreed by all European countries, a common definition of the term animal welfare would be needed, but this aspect still remains somewhat unsolved and debated. Despite the widely accepted concept of the Five Freedoms, defined in the Brambell Report (1965) (later endorsed by the British Farm Animal Welfare Council in 1979), to date no official, unambiguous, definition exists for animal welfare (EESC, 2007). Beside of semantic issues, the critical point is related to the objective assessment of the wel-

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fare level. Welfare level is commonly estimated by means of the so-called design criteria (environmental and management factors which are believed to influence the welfare of the animals) and by animal criteria (parameters measured directly at the animal level, *e.g.*, body conditions score, reproductive efficiency, longevity, immune suppression, corticosteroid levels, disease, injury). Although the possible influence exerted by the assessor, animal criteria are generally deemed to be particularly appropriate for measuring the actual level of animal welfare (de Passillé and Rushen, 2005). On the other hand, design criteria, which are less flexible but easier to be measured, are frequently used for certification purposes. Animal-friendly products, in fact, are based on environmental and management standards higher than those commonly adopted in conventional production processes (*e.g.*, higher space availability, access to outdoor areas, lower animal density, natural feeding, *etc.*). In the Italian market, voluntary certifications implying animal protection contents are generally included in wider production schemes (*e.g.*, organic farming, QC-Emilia Romagna, Legambiente LAIQ), often including many other attributes (*e.g.*, traceability, quality of raw materials, reduced environmental impact, GMO-free feeds). Besides, apart from organic foods, such products are distributed scarcely or discontinuously in the main retail chains. Similarly, welfare-friendly products from other European countries (*e.g.*, Beter Leven-NL; Freedom Food-UK) are usually not sold in retail chains. Within this framework, the ethical attributes pertaining to different production schemes are of difficult interpreta-

tion by consumers. Nevertheless, the results of many EU surveys on consumers' attitude towards animal welfare show that approximately one half of Italian consumers are confident in their capability to identify animal-friendly products and to find them in stores and supermarkets (Eurobarometer, 2005, 2007b).

The aim of the present work was to investigate the apparent contradiction between the intricate information consumers receive from different labels and their awareness about animal welfare as resulting from the European surveys (Eurobarometer, 2005, 2007a, 2007b) by carrying on a survey to study consumers' knowledge about animal welfare and their ability to identify animal-friendly foods. To this aim, a survey was carried out on Italian consumers and data collected were analysed both by simple descriptive statistics and by using an econometric model.

## Materials and methods

### Questionnaire

A survey was conducted using a structured, semi-close-ended questionnaire. The interview was carried out as a face-to-face direct interview, with a non-probabilistic, judgmental sampling that included 335 consumers. The interviews were carried out near and within supermarkets and hypermarkets located in Bologna and its province. Locations were chosen based on the store geographic position and different store brand. Interviews were carried out in different week days of and different day hours.

The questionnaire included 25 questions (some of which were similar to those administered to consumers by the above-mentioned European surveys). It was divided into 3 sections, each having a specific objective:

Section one was aimed at collecting information concerning the consumers' direct and indirect knowledge about animal welfare. Questions dealt with the information sources used by consumers and with their degree of knowledge of animal welfare policies. Furthermore, it was asked whether the consumer had ever been in a farm before. The section ended asking the consumer to self-evaluate his grade of knowledge and his perceived responsibilities with respect to animal welfare.

Section two was aimed at testing the consumers' perception and sensibility as concerns animal welfare. The questionnaire asked to give a score on a 10-point scale to the perceived animal welfare level of different species, to the animal protection level associated with different product certification schemes, and to the perceived importance that different actors of the

production chain have in determining animal welfare. This section was further aimed at identifying the key characteristics (both ethical and organoleptic) that consumers associate to animal-friendly products.

Section three was aimed at collecting data about the purchasing behaviour with respect to animal-friendly products. Questions were posed concerning usual purchasing places and purchase frequency, on recent shopping behaviour and on the willingness to pay a premium price for products that might be certified as animal-friendly.

A further part of the questionnaire was aimed to obtain information about the socio-demographic characteristics of the surveyed sample. This information was useful to categorize the different consumption profiles emerged from the interview. Socio-demographic characteristics of the interviewed sample are shown in Table 1.

### Econometric model

A discrete ordered-choice model was used to analyse consumers' behaviour within a utility maximization framework, where the answers of consumers on willingness to pay more for animal-friendly foods are considered an expression of a continuous latent variable reflecting the propensity to choose a specific option among different alternatives.

In our paper, to determine the rank of consumers' choice, ordered logit regression model has been used. The ordered logit model depends upon the idea of the cumulative logit. This in turn relies on the idea of the cumulative probability. We could think of the cumulative probability  $C_{ij}$  as the probability that the  $i$ th individual is in the  $j$ th or higher category:

$$C_{ij} = \Pr(y_i \leq j) = \sum_{k=1}^j \Pr(y_i = k)$$

We can then turn this cumulative probability into the cumulative logit:

$$\text{logit}(C_{ij}) = \log\left(\frac{C_{ij}}{1 - C_{ij}}\right)$$

Our ordered logit model simply models the cumulative logit as a linear function of independent variables:

$$\text{logit}(C_{ij}) = \alpha_j - \beta x_i$$

Note that there is a different intercept for each level of the cumulative logit, but that  $\beta$  does not vary by the level of the cumulative

logit. Also note that  $\beta$  is subtracted rather than added. This means that each  $\alpha_j$  indicates the logit of the odds of being equal to or less than category  $j$  for the baseline group (when all independent variables are zero). Thus, these intercepts will increase over  $j$ . These intercepts are sometimes referred to as cut-points. The  $\beta$  tells us how a one-unit increase in the independent variable increases the log-odds of being higher than category  $j$  (due to the negative sign). Since this  $\beta$  is not indexed by  $j$ , we are assuming that the one unit increase affects the log-odds the same regardless of which cut-point we are considering. Due to the high size of our sample, the estimation has been made by using the maximum likelihood

**Table 1. Socio-demographic characteristics of the surveyed sample of consumers (n=335).**

	Proportion of the surveyed sample, %
Gender	
Female	62
Male	38
Age	
18-29	24
30-39	14
40-65	51
over 65	11
Household size	
1	19
2	23
3	24
4	27
5	5
6	2
Education	
Primary school	3
Middle school	9
High school	47
3-year university degree	12
5-year university degree	29
Employment	
Employee	47
Freelance	14
Retired	16
Housewife	6
Unemployed	2
Student	15
Annual household income	
<10,000 €	6
11,000 - 20,000 €	18
21,000 - 35,000 €	33
36,000 - 50,000 €	16
51,000 - 75,000 €	16
>75,000 €	11
Area	
Urban	85
Rural	15

method, which generates asymptotic disturbance terms (Gujarati, 2003).

## Results and discussion

### Socio-demographic characteristics

The high percentage of women in the sample agrees with the socio-cultural characteristics of the Italian population, which tends to consider women as in charge of purchasing groceries (Defrancesco and Galvan, 2005; Pellegrini and Farinello, 2009; Panico *et al.*, 2011; CENSIS, 2012).

About the educational level of the interviewed, only a small percentage of the sample has a low educational level (primary or middle school). This percentage is below the national average, but such a difference can be due to the low rate of school dropout in the region where the survey has been carried out (ISTAT, 2012). Similarly, the high percentage of consumers having a university educational level (3- or 5-year degrees) may be ascribed to the fact that the survey has been carried out in Bologna urban area, which hosts an important university. It is also worth highlighting that Emilia Romagna is well known as one of the Italian regions in which animal welfare issues are considered as a priority in agricultural politics (MiPAAF, 2012).

### Section one - knowledge

Considering the perception of animal welfare by consumers, our results are comparable to those obtained in previous European surveys (European Commission, 2005;

Eurobarometer, 2007b). Although 65% of the interviewed stated to have heard about animal welfare, 52% judged as low their own level of knowledge on the subject and 12% as null. Consumers gathered information about animal welfare mostly through the mass media (newspapers, TV, radio; 42%) and internet (26%). Concerning the knowledge of animal welfare policies, approximately one third of the sample believes that animal protection is not regulated by law (Figure 1). A similar percentage correctly indicates that the protection of food animals is regulated by law during the whole production chain (on farms, during transport and at slaughter), and the remaining percentage (36%) indicated only one or two out of the three production phases as regulated by law. Similarly to the results obtained from European surveys (Eurobarometer, 2005), most of the interviewed were sceptical about the existence of a regulation on animal protection during transport. The percentage of consumers indicating transport among the processes regulated by law (11%) was lower than the percentage of consumers who knew or believed in the existence of a regulation concerning animal protection at slaughter (17%). Such a result can be due to the fact that consumers generally deem transport as being less critical than slaughter in terms of animal welfare, therefore requiring -in their opinion- less severe regulations. An alternative explanation could be that, conversely, consumers may have a negative prejudice on the conditions of animals during transport, and this may lead them to believe that no specific regulation

exist.

Concerning instead animal rearing conditions, the interviewees believe that their purchasing choices do not affect the welfare of food-producing animals (Figure 2). Similarly to previous European surveys (Eurobarometer, 2007b), consumers believe that the main responsible for food-producing animals welfare are primarily farmers and secondly politicians and veterinarians. Besides, the majority of consumers (58%) deems insufficient the economic resources allocated to animal welfare by the Common Agricultural Policy.

As far as the direct knowledge of animal living conditions on farms is concerned, 36% of the interviewed stated to have visited food-producing farms at least once. Such a percentage is low if compared to the European average (69% according to Eurobarometer, 2005). Moreover, the reasons for visiting farms were mostly referred to recreational activities (leisure, tourism, curiosity, *etc.*). It is therefore hard to tell if the farms visited by Italian consumers could be representative of the most common zootechnical practices. The percentage of consumers who visited farms differed across the different species. The effects that farm visits had on consumers' perception of animal welfare also differed across different species. In particular, most consumers (50%) had visited cattle farms, and this experience contributed to improving their perception of cattle welfare. Conversely, visiting poultry farms worsened consumers' perception of this specie's rearing conditions.

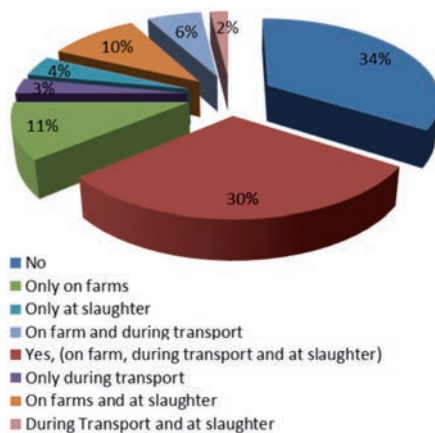


Figure 1. Answers to the question *Which of the following production steps is regulated by animal welfare policies?*

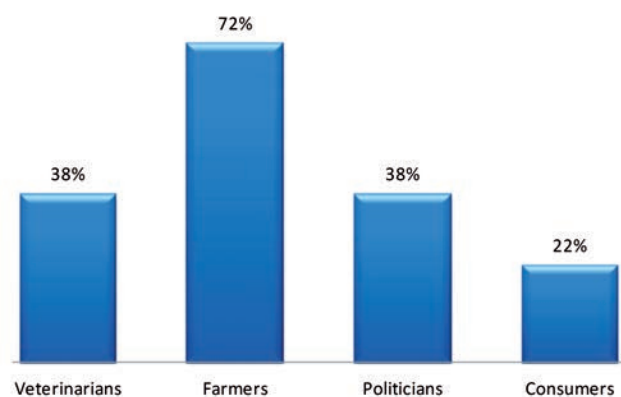


Figure 2. Answers to the question *Who do you deem responsible for animal protection on farms? (up to 2 answers allowed).*



### Section two - perception

Our results show that, similarly to European surveys (Eurobarometer, 2005), consumers, regardless of previous farm visits, perceive dairy cows as the category benefiting from the highest welfare level on farms, followed in order by beef cattle and swine, which occupy an intermediate position (Figure 3). Poultry (and in particular broilers) is perceived as being subjected to the lowest welfare level on farms. Consumers were also asked to choose which were in their opinion the factors contributing to the welfare level of animals on farms. The Five Freedoms were given as possible answers. Only 31% of the sample correctly chose all the five answers, whereas the remaining 69% of the interviewed picked only some among the proposed

factors. Among them, freedom from hunger and thirst was considered as the most important factor, whereas freedom from discomfort was considered the less important, with 45% of the interviewees not picking it (Figure 4).

The following question asked consumers to score on a 1-to-10 scale the importance of different aspects (not only the Five Freedoms) in determining animal welfare level (Figure 5). The answers to this question highlighted some discrepancies with respect to the previous one: here, in fact, absence of disease received the highest score (average: 9.2 points), followed by space allowance and access to open areas (8.9 and 8.8, respectively). The factor considered as the least important was absence of Genetically Modified Organisms (GMOs) in feed which, however, received a high average score (6.8), close to

contact with other animals (6.9). Regarding the perception of animal-friendly products (Figure 6), only a small percentage of consumers considers them as equal to other products. More than 50% of the interviewed answered that they are healthier or more ethical. However, only 13% of the consumers who answered more ethical attributed only this characteristic to animal-friendly products, whereas 6% associated this answer to greener. Besides, only 19% of the interviewed sample attributed both the characteristic on more ethical and greener to animal-friendly products. It is also worth noting that, among the interviewed that acknowledged the characteristic of greener to animal-friendly products, only 3.8% indicated foods from non-intensive farming or organic foods among the animal-friendly products (data not shown).

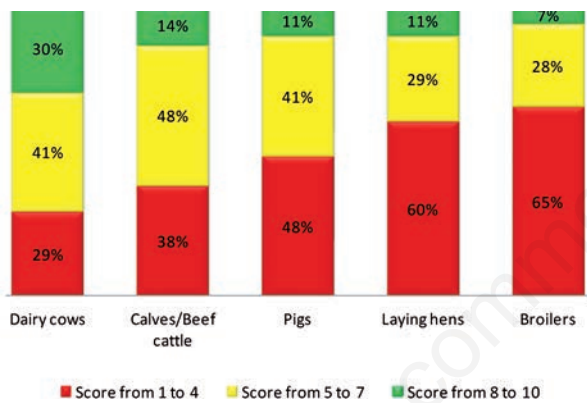


Figure 3. Distribution of the answers to the question *Please attribute a score to the level of animal welfare of the following species/categories on farms*. Scores are expressed on a 1-to-10 scale, where 1 corresponds to the minimum and 10 to maximum welfare level.

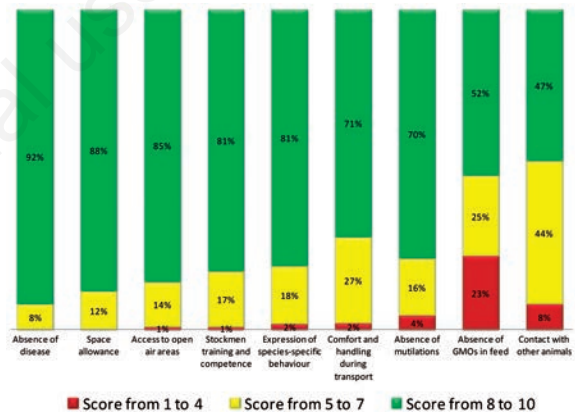


Figure 5. Distribution of the answers to the question *Please attribute a score (on a 1-to-10 scale) to the importance of the following factors in determining animal welfare level on farms*.

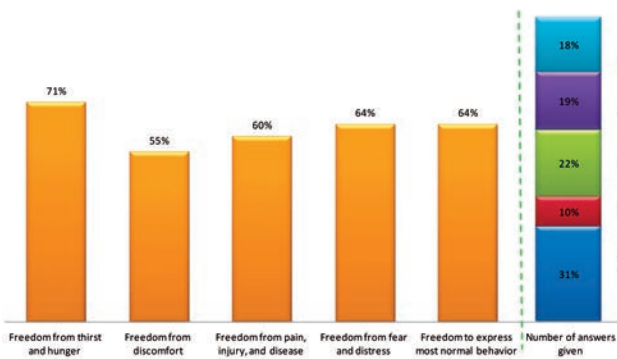


Figure 4. Distribution of the answers to the question *Which of these elements contribute to animal welfare level on farms?* (more than one answer allowed).

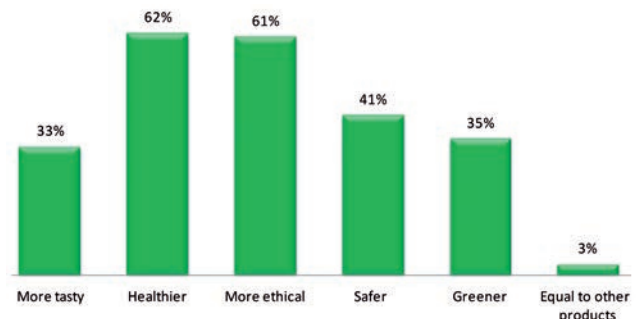


Figure 6. Distribution of the answers to the question *Which of the following attributes do pertain to animal-friendly products?* (more than one answer allowed).

Consumers were also asked to score (on a 1-to-10 scale) the level of animal welfare attained during the production of some categories of certified products. Their answers are summarized in Figure 7. Our results show that consumers tend to wrongly attribute an ethical connotation to certified products, by acknowledging them an increased attention to animal welfare, regardless of the fact that such a trait is included in the certification. For example, 50% of the interviewed attributed a high welfare level to dolphin-safe tuna, which is a certification that refers to sustainable fishery rather than to the welfare level of the canned product itself.

Products from non-intensive farming and eggs from non-caged hens were perceived as more respectful of animal welfare. However, the score attributed to eggs from non-caged hens was higher than the one attributed to organic products (7.6 and 6.9 points, respectively), which is surprising considering that organic productions require the attainment of higher welfare standards (e.g., access to outdoor spaces) compared to eggs from non-caged hens. Besides, it's worth noting how the scores attributed to organic and Protected Designation of Origin (PDO) products are similar. Lastly, approximately one third of the interviewed attributes an increased level of animal welfare to animals raised with GMO-free feedstuffs. Given the wide range of products to which consumers attributed animal friendly characteristics, it is not surprising that 32% of the interviewees stated they have purchased animal friendly foods in the past. However, the percentage of consumers correctly indicating an example of animal friendly product was low (10%), and 70% out of

them mentioned eggs from non-caged (battery cage) hens.

### Section three - purchasing behaviour

The main finding from the analysis of the third section is that 64% of consumers declared they pay attention to buying products with an increased animal welfare level. 43% declared they find such products either often or always. However, as previously mentioned, most consumers can not correctly name an example of animal-friendly product recently purchased. About 28% of the interviewed declared they would like to buy animal-friendly foods, but that they are difficult to find and/or to recognize, whereas only 10% of the interviewed declared not to look for animal-friendly products, not to know them and not to be interested to them. This finding is somehow contrasting with consumers' willingness to pay (WTP). As summarized in Figure 8, 87% of the interviewees stated they would accept to pay a premium price for foods produced under high animal welfare standards. However, this finding needs to be looked at prudently, owing both to the fact that most consumers would accept only a minimum price increase (between 5 and 10% of the original price), and to differences between the declared and the actual purchasing behaviour leading to an overestimation of the WTP (Murphy et al., 2005; Lusk and Shogren, 2007; Napolitano et al., 2010). The overestimation of the WTP might also be influenced by the social desirability bias, a well described psychological phenomenon (e.g., Leggett et al., 2003; Lusk and Norwood, 2007), implying that the interviewed tends to deny socially undesirable traits or behaviours and to claim

socially desirable ones, in order to appear in the most favourable light (Nederhof, 1985).

### Results of the econometric model

The findings from the econometric model are shown in Table 2. The higher probability of the willingness to pay a premium price above 10% for animal friendly products is determined, in order, by the following socio-demographic characteristic: 5-year university degree; male; between 30- and 39-year-old; family of three; urban living; annual household income between 36,000 and 50,000 Euros.

A number of studies have demonstrated that willingness to pay is influenced by household income. Consumers that are most likely to purchase products with ethic characteristics have a high household income and households with few members (Govindasamy and Italia, 1999; Harper and Henson, 2001; Wang and Sun, 2003; Batte et al., 2007). Furthermore, several studies have shown that consumers with high level of education were more willing to pay more for animal friendly products (Harper and Henson, 2001; Eurobarometer, 2005). Probably, this occurs since a high level of education is likely to improve the socio-economic status, thus enabling to pay a premium price for improved animal welfare. Although our results are in agreement with the literature on household income and education, it is remarkable that numerous studies highlight that women are predominantly more concerned with animal welfare compared to men (Harper and Henson, 2001; Roex and Miele, 2005; Izmirlir and Phillips, 2012). Conversely, in our study being male is one of the most important characteristics increasing the willingness to pay more for animal friendly products. It would be interesting to

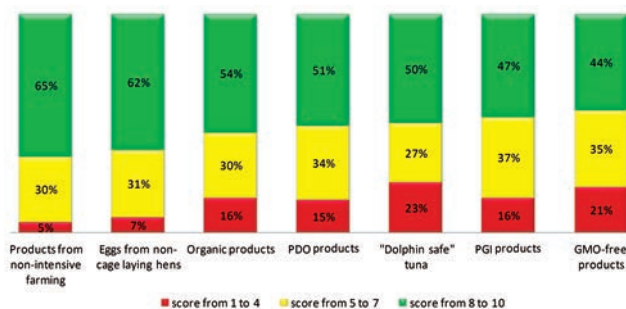


Figure 7. Distribution of the answers to the question *Please attribute a score (on a 1-to-10 scale) to the following product categories on the basis of the level of animal welfare attained during their production.*

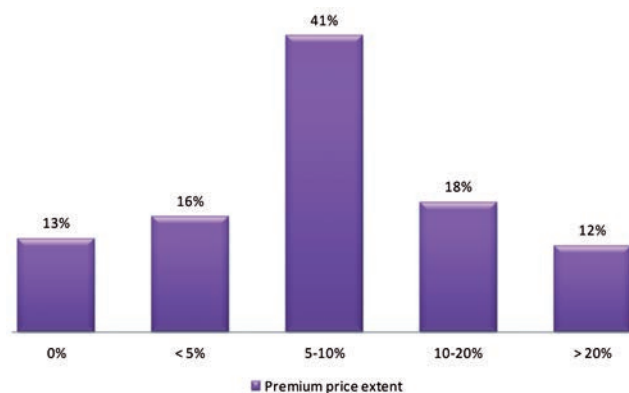


Figure 8. Distribution of the answers to the question *Which price increase (expressed as percentage of the original price) would you accept to pay for animal friendly foods?*

**Table 2. Socio-demographic characteristics affecting consumers' willingness to pay a premium price above 10% for animal friendly products. Results of the ordered logit model.**

Variable	Coefficient	Standard error	z-Statistic	Probability
Degree_5 years	0.093110	0.055902	3.665584	0.0958
Households_size 3	0.662219	0.073478	9.012519	0.0000
Gender_male	0.942621	0.111643	8.443190	0.0000
Urban	0.008014	0.001151	6.960629	0.0000
Age_30_39	0.522240	0.074297	7.029091	0.0000
Income_36_50	0.280174	0.053237	5.262771	0.0000
Mean dependent variable	0.300484	SD dependent variable	0.458487	
Regression SE	0.366622	Akaike info criterion	0.854884	
Sum squared residual	1663.616	Schwarz criterion	0.862674	
Log likelihood	-5283.007	Hannan-Quinn criterion	0.857493	
Restricted log likelihood	-7573.686	Average log likelihood	-0.426393	
LR statistic (12 df)	4581.357	McFadden R-squared	0.302452	
Probability (LR stat)	0.000000			
Total observations			355	

Dependent variable=wtp; method=ordered\_logit; included observations=355; excluded observations=0; convergence achieved after 7 iterations; QML (Huber/White) standard errors and covariance.

investigate if such a propensity expressed by men towards animal friendly products is actually real. Such a research could be relevant for two main reasons: the first is that although consumers claim that they are willing to pay more for improved animal welfare, at the moment of purchase such claims may not be translated into practice; the second is that the purchasing habits of Italian society are changing and men are increasingly responsible (or co-responsible) for food purchases.

### General remarks

Data obtained from the survey was analysed using simple descriptive statistics techniques and allowed to examine consumers' real knowledge about animal welfare and their ability to identify animal-friendly products. According to our findings, most consumers are not able to identify animal-friendly products and often confuse them with foods that are certified for other peculiarities. Indeed, with the exception of a low number of cases where animal-friendly products were identified with organic products or with eggs from non-caged hens (battery cage), most consumers answered referring to diversified products, often having a weak connection (or none at all) to animal welfare (e.g., origin designation, brand, healthiness, lightness, tastefulness, naturality, traceability).

Besides, although the connection between organic production and animal welfare in consumers' perception has been extensively investigated (Harper and Henson, 2001; Miele and Parisi, 2001; Harper and Makatouni, 2002; Grunert *et al.*, 2004; de Passillé and Rushen, 2005; Vaarst *et al.*, 2005; Edwards, 2005; Lund,

2006), it's still difficult to determine if the choice of purchasing organic food is due to animal welfare concerns or to different qualities (either real or presumed) attributed by consumers to organic foods (Vaarst *et al.*, 2005; de Passillé and Rushen, 2005; Napolitano *et al.*, 2013). Therefore, in agreement with similar surveys (Regione Emilia Romagna, 2006), it can be concluded that in the present study the anthropocentric perception of animal welfare is prevalent among consumers, or at least that it is difficult to discriminate between consumers who choose animal-friendly foods for ethical concerns and consumers who associate to animal-friendly products other implicit characteristics.

Regarding WTP, most consumers declared to be ready to pay a premium price in the name of animal welfare but, given their low level of knowledge of animal friendly products, it is hard to predict if their WTP would be maintained after the achievement of a higher level of knowledge.

The implementation of animal welfare policies demands an economic effort by farmers. Such costs need to be acknowledged by the market. Otherwise, the risk would be to increase the production costs for European farmers without a parallel increase in the consumers' awareness. If the label does not allow recognizing the ethical value of the product, the results might in fact void the effects of the massive policy strategy adopted by the EU in terms of animal welfare. From an economic standpoint, the increased efforts sustained by farmers in terms of costs and management should be encouraged and remunerated. This is particularly true since we consider that eth-

ical attributes pertain to public good (De Castro *et al.*, 2012) and are therefore rarely rewarded by traditional market mechanisms (Buckwell, 1997).

The possibility to recognize the presence of an ethical added value is therefore indispensable both for the economic sustainability of European farms and for the diffusion of animal welfare conditions above the minimum mandatory requirements. It is also worth noting that the different standards in animal rearing presently in use in different countries are contradictory to the principle of reciprocity (De Castro *et al.*, 2010), risking to distort consumers' purchasing behaviour instead of valuing higher welfare standards. In this scenario, the diffusion of a more ethical treatment of food-producing animals not only would fail, but would also be limited by a sort of brand oversaturation (De Rosa and Sabbatini, 2009).

### Conclusions

The findings from this research highlighted that consumers are not sufficiently informed about the meaning of animal friendly foods, but also that their perception is biased, since they expect animal welfare implications in brands or certifications having often a weak or no connection at all with animal welfare on farms, during transport or at slaughter. Nevertheless, a part of the interviewed would accept to pay a premium price for animal friendly foods. These results could represent a starting point for further research aimed to identify which consumers are more sensitive



towards animal friendly foods and could be very helpful for marketing strategies.

Likewise, it is hoped that the information collected in the present work might be useful to the current debate over the possibility to create a European animal welfare label whose primary aim will be to value the information concerning specific ethic attributes. In order to be effective, such a label should be able to address consumers' specific concerns in terms of animal welfare by claiming the exact welfare improvements attained during the life of the animal (e.g., increased space allowance, access to open areas, possibility to express specie-specific behaviours). This labelling system could be implemented not only for primary agricultural products, but also for processed products, which represent the major demand among animal-derived foods.

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