

## COMPARISON BETWEEN VISUAL AND "OFFICIAL" OVINE MEAT INSPECTION

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### Background

One of the most important innovation in meat post-mortem inspection is the introducing of "visual inspection". This is based on:

1. pre-selection of healthy group animals at farm, on the basis of a detailed documentation of the fattening process;
2. individuation of "farm indices" on the basis of finding and coding pathologies at slaughterhouse, in order to assess a farm risk level.

(Anonymous 1992, Hathway et al. 1987, Marcato 1995, McMahon et al. 1987, Pointom et al. 2000)

Such revised inspection system has been proposed in the European Union especially for fattening pigs (Anonymous 1992, Pointom et al. 2000), on the basis of studies on associations between management/farm conditions and lesions found at meat inspection, which can be used for discrimination.

Furthermore, a recent draft proposal for a Regulation of the European Parliament on the organisation of official controls on products of animal origin, regarding to the post-mortem inspection, specifies that "*the slaughtered animal and its organs shall be subjected without delay to visual post-mortem inspection. All external surfaces shall be viewed; minimal handling of the carcass and/or organs, and/or special technical facilities may be required*" Furthermore "*depending on the animal species, the type of holding or the country or region of origin, and based on the principles of risk analysis, additional palpation, incisions or laboratory tests are required ...*"

Such potential extension of visual post-mortem inspection to all species could appear not well supported by enough scientific studies since, according to some Authors (Fries 2000), visual inspection did not entirely find all lesions, which were supposed to be on the carcasses and organs, as well as, in some case, official inspection. Furthermore, if pigs fattening has, always, a similar management characteristics, the rearing and fattening of other species could be very heterogeneous. This is particularly evident, for example, in the case of farmed sheep reared in extensive or organic conditions as well as in very intensive farming, with consequent differences in pathology manifestation.

### Objectives

Since the law in force regarding ovine meat inspection allows a less accurate inspective procedures and in order to evaluate the applicability of visual post-mortem inspection to sheep, a study on this regard was carried out, comparing the results of organic reared sheep with those of intensive reared sheep.

### Methods

For the present study n. 5 (A, B, C, D, E) sheep farms from West Sicily were considered. A and B were extensive and "organic like" farms while C, D and E were characterised by intensive rearing.

119 subjects (62 from A / B and 57 from C, D and E) 4 – 8 months old were examined by clinical and anamnestic evaluation along fattening, considering: *pharmacological treatments; dermatitis; traumatic lesions; septic lesions; lymph nodes hiperplasia; limb phlogosis/oedema; dyspnea; weight decrement.*

Visual and "official" post-mortem inspection as well as a more accurate inspection than provided by Dir. 91/497 were carried out.

### Results and Discussion

Clinical examination did not find relevant data except for 10 cases (6 from C farm; 2 from D farm and 2 from E farm) of pharmacological treatments. Two of these subjects (animals n. 63 and 64) had an acute enteritis; three were affected by rumen phlogosis (animals n. 67, 111 and 112) associated, in one case (animal n. 111) to purulent hepatitis and in a other one (animal n. 112) to chronic bronco-pneumonia; one subject (n. 104) had pulmonary Adenomatosis.

Furthermore, in 3 subjects from extensive farms was observed a weight decrement associated to 1 cases (animal n. 46) of chronic bronco-pneumonia and interstitial parasitic pneumonia, to 1 case (animal n. 47) of purulent hepatitis and to 1 case (animal n. 49) of interstitial parasitic pneumonia and purulent hepatitis.

The distributions of pathology kind are shown in table 1. Synthetically, post-mortem inspection allowed to observe a prevalence of parasitic pneumonia / bronco-pneumonia in sheep from A and B farms, while a different kind of gastric-enteric pathologies were prevalent in animals from C, D and E farms.

As results from our data, a low relation between clinical examination and post-mortem inspection was found, inducing to consider pre-selection at farm not suitable to ovine meat inspection. Furthermore, in spite of a higher percentage of pathologies were observed in sheep from extensive than intensive farms, lesions affected intensively reared animals could have a most important hygienic-sanitary significant. In fact the correlation between gastric-enteric pathologies and endogenous contamination of meat are well known (Bernard & Lurin 1989). Besides, the association of two cases of ruminitis to pharmacological treatments could allow to suspect the arising of ruminal dismicrobisms. The comparative evaluation between visual and official post-mortem inspection showed differences in lesions recovery, especially for ruminal and enteric pathologies. Furthermore, ruminitis and enteritis without evident hyperplasia / hyperemia of mesenteric and gastric lymph nodes were only found with a more accurate inspection than official.

This demonstrate that in many cases, especially for intensive rearing, pre-selection at farm and visual post-mortem inspection are not completely able to guarantee high meat safety level; in some cases this difficulties could exist also for traditional ovine meat inspection, according to other Authors. Further pilot studies on this regard are necessary.

### Pertinent Literature

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Table 1

Extensive Farms (A and B)		Intensive Farms (C, D and E)	
Kind of lesions	%	Kind of lesions	%
Chronic bronco-pneumonia	3,1	Chronic bronco-pneumonia	0,57
Acute bronco-pneumonia	0,62	Chronic pleuritis	0,57
Interstitial parasitic pneumonia	28,52	Pulmonary abscesses	1,71
Other pulmonary parasitosis	0,62	Adenomatosis	1,14
Purulent hepatitis	4,34	Purulent hepatitis	3,42
Hepatic hydatidosis	0,62	Hepatitis	1,71
Hepatitis	0,62	Forestomach phlogosis	5,13
Acute enteritis	0,62	Acute enteritis	6,27
Intestinal parasitic diseases	1,86	Mesenteric /gastric lymph node phlogosis	3,42
		Intestinal parasitic diseases	5,7
		Nephritis	0,57
		Nephrosis	0,57