Session 27 stefanakisa@yahoo.gr

FACTORS AFFECTING LAMB MORTALITY IN CRETAN - GREECE SHEEP FARMS

A. Stefanakis, M Volanis, S. Sotiraki

Introduction

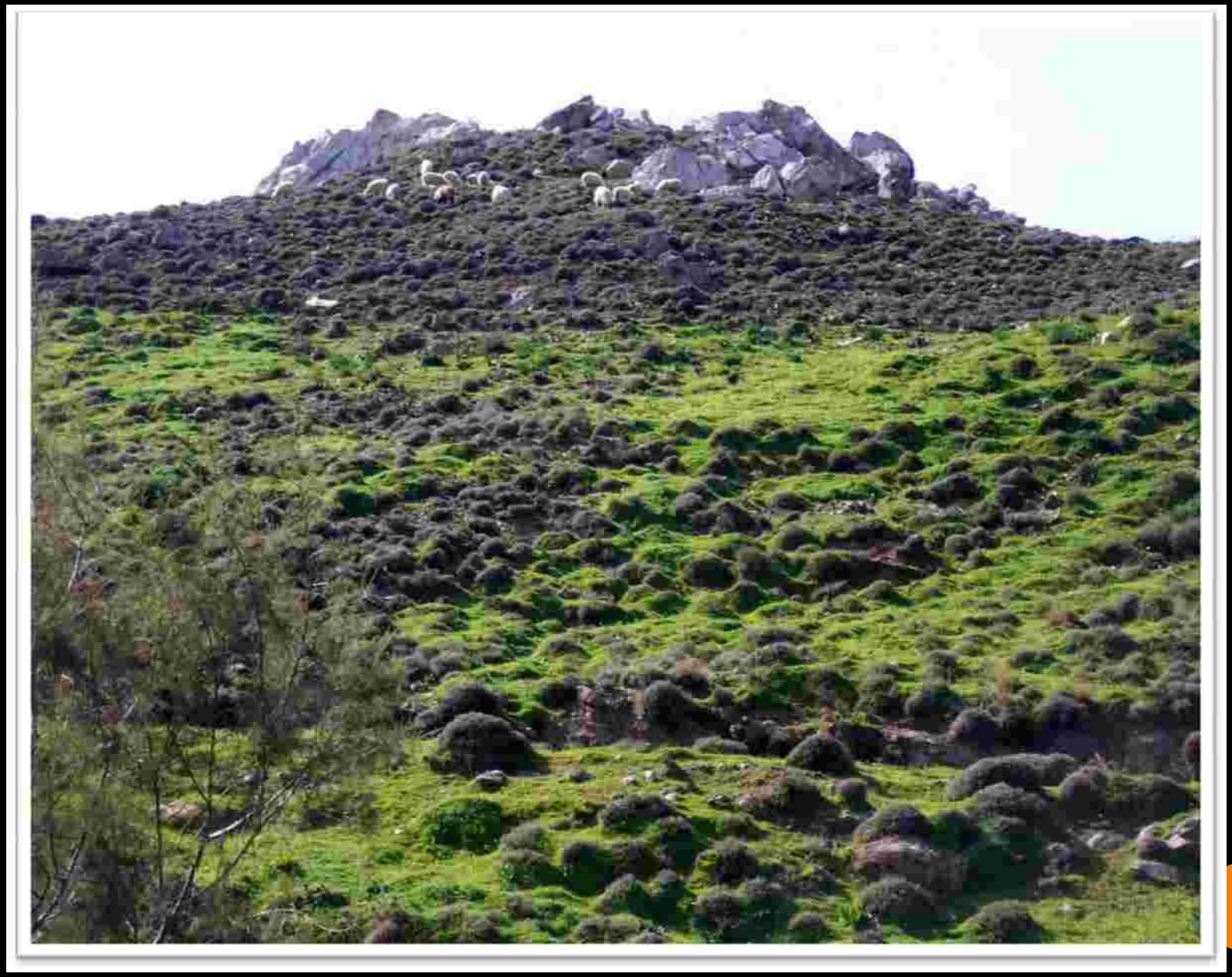
- High mortality reduces the profitability of lamb production worldwide, and is an important welfare consideration.
- Disease is the major cause of lamb mortalities and low productivity in sheep.
- The survival of lambs from birth to weaning to be a major factor affecting the number of lambs weaned per lambing and it is highly correlated with lamb weight weaned per lambing season.
- The neonatal lambs being at greater risk.

Introduction

- Several studies have shown that approximately 10-35% of lambs die in different productive and climatic conditions.
- The study was designed to identify the various factors affecting major causes of lamb mortality in extensive and semi- intensive Cretan sheep productive systems.

Materials and methods

- The animals were housed according to their productivity, physiological and health status and two productive systems a semi-intensive or extensive system.
- The system characterization is based on capital investment (cultivated pasture, milking parlor, house facilities, equipment)
- In both systems animals graze throughout the year, receiving concentrate (depending)
- Flocks enrolled in the study were vaccinated against clostridium and received anthelmintics regularly



- The weaning or *culling* of lambs in extensive system is generally practiced at 2 months of age.
- The weaning of lambs in semi extensive system is generally practiced from 40 day to 2 months of age.
- Breeding is practiced in the flock, with two breeding seasons, namely: (1) May-June (spring) and (2) August-September (autumn).

DATA

- A questionnaire which was specially designed and modified after discussion with the Sheep owners had been filled out.

- The questionnaire contained:

1 **Flock-history**: questions relating to the management in the previous 12 months (including disease history, nutrition, production and mortality figures).

2. **Body-condition-score**. To record the condition score of 10% of ewes on a 1-5 systems (1: extreme emaciation to 5: extreme fatness) using methods detailed in the UK Ministry of Agriculture, Fisheries and Food (MAFF) booklet provided (MAFF, 1994).
3. **Lambing**. Included questions on lambing management, hygiene practices, and management of newborn lambs
4. **Lambing-record**. These were designed to record the number of lambs born alive, dead or mummified, plus details of fostering.
5. **Lamb-death-record**. These included space to record lamb sex, age at death and cause of death per farm

- The questionnaires were piloted on one sheep farmer.

Data

- Data were collected from 15 farms

(8 semi-intensive, 7 extensive) during 2006, 2007 and 2008.

- Dates of death in lambs were recorded and necropsies were performed on all dead animals within 24 h after death.

Data

- Causes of sickness or death were grouped into 7 categories as follows.

1 **Starvation**: related to starvation, mismothering and exposure (SME) complex and stillbirths.
2 **Watery mouth syndrome:** related to very early signs, general depression, saliva drooling, swollen abdomen, dizziness
3 **Digestive disorder**: included gastroenteritis, impaction, liver abscesses, peritonitis and bloat.
4 **Respiratory disorder** : pneumonia and lung abscesses.
5 **Endoparasites**: included mostly cestodes and coccidia.
6 **Septicemia**: involved systemic infections and navel infection.
7 **Other**: included problems not specialised above plus undiagnosed or unknown causes.

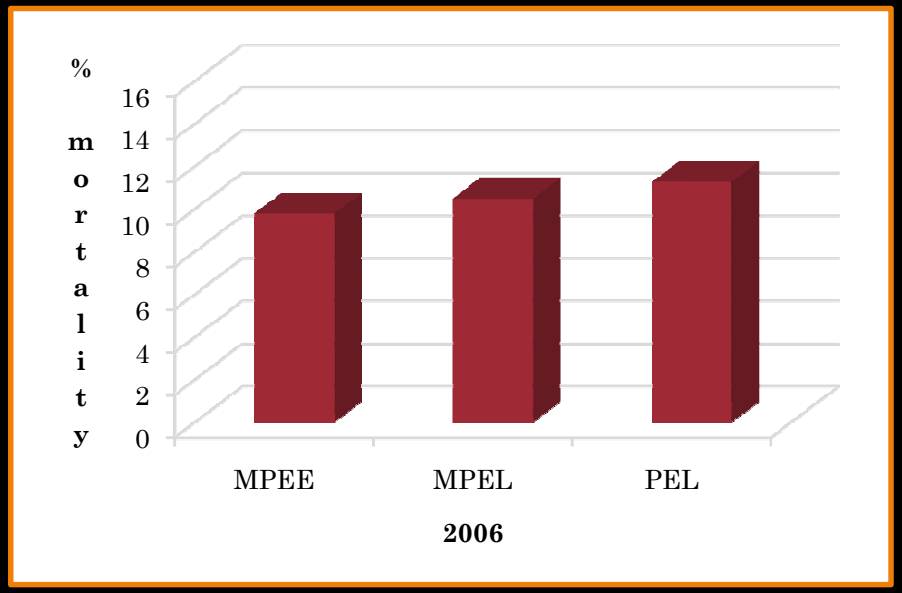
Lamb mortality rates were calculated as: total mortality and categorized as

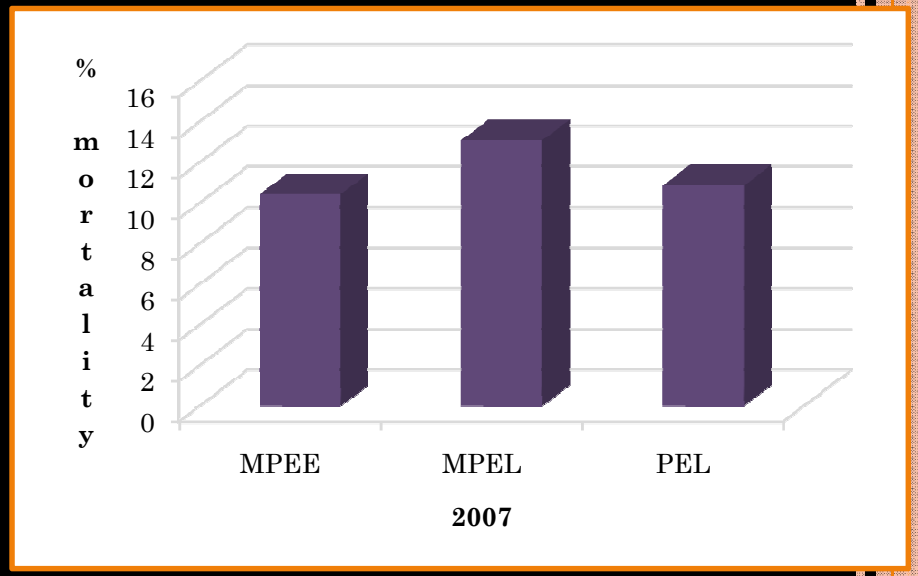
lambs dying within

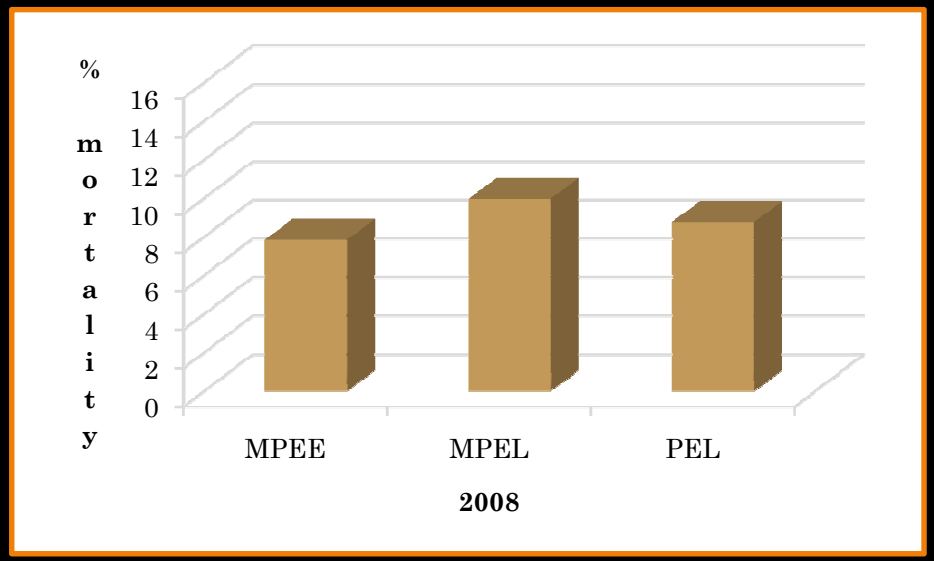
0-3, 4-7, 8-15, 16-30, 31-45, 45-60, days, and within 2 months of age

LAMBING		Semi-intensive			Extensive			
		Number of ewes	Lambs born	Prolificacy	Number of ewes	Lambs born	Prolificacy	
Multiparous ewes	Early lambing period	2787	4536	1,63	2242	3198	1,43	2006
	Late lambing period	386	563	1,46	450	589	1,31	
Primiparous ewes		723	978	1,35	646	738	1,14	
Multiparous ewes	Early lambing period	2754	4507	1,64	2239	3201	1,43	2007
	Late lambing period	391	566	1,45	446	587	1,32	
Primiparous ewes		762	1015	1,33	673	785	1,17	
Multiparous ewes	Early lambing period	2724	4692	1,72	2285	3249	1,42	2008
	Late lambing period	417	603	1,45	416	556	1,34	
Primiparous ewes		768	1027	1,34	667	786	1,18	

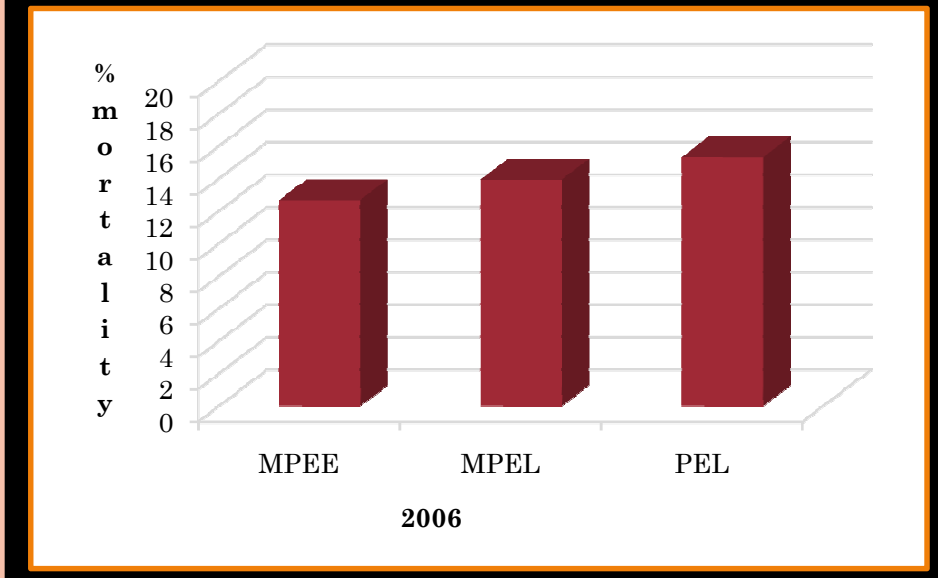
MORTALITY

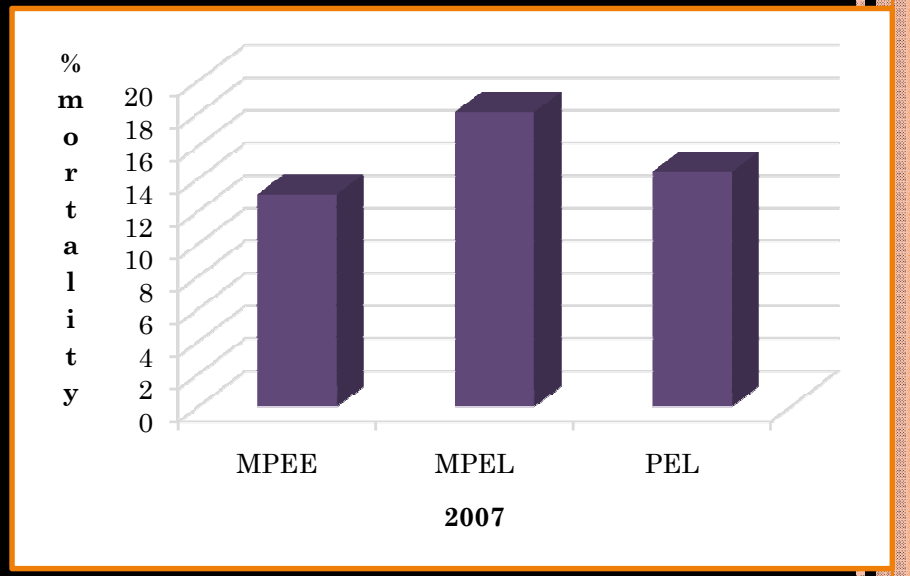






SEMI-INTENSIVE


% mortality
20
18
16
14
12
10
8
6
4
2
0
MPEE
MPEL
PEL
2006


% mortality
20
18
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MPEE
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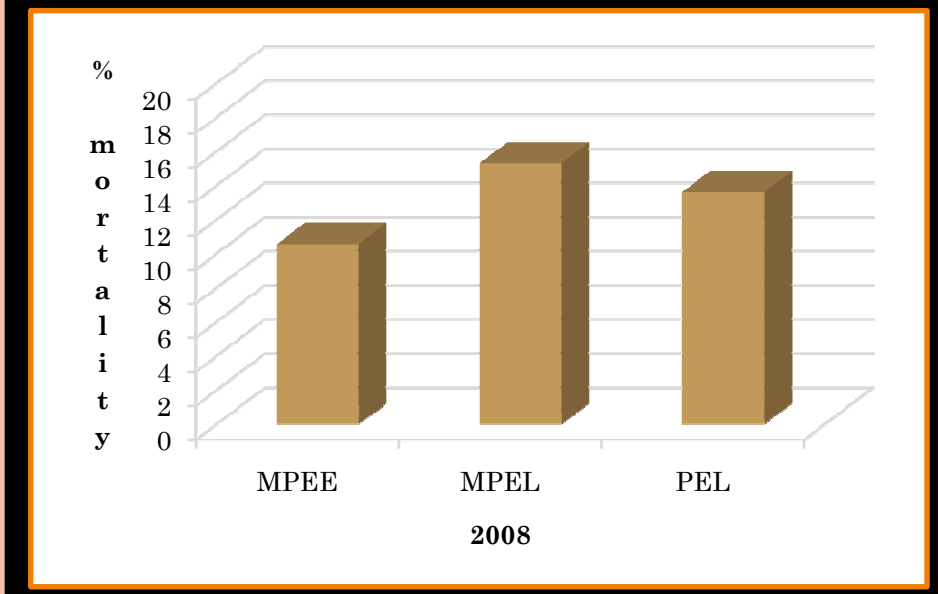
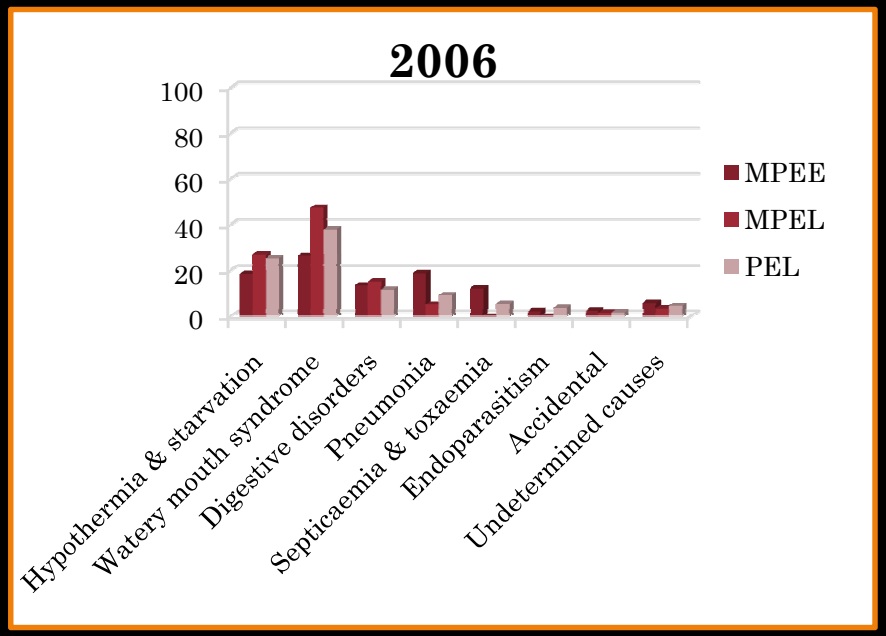
2007

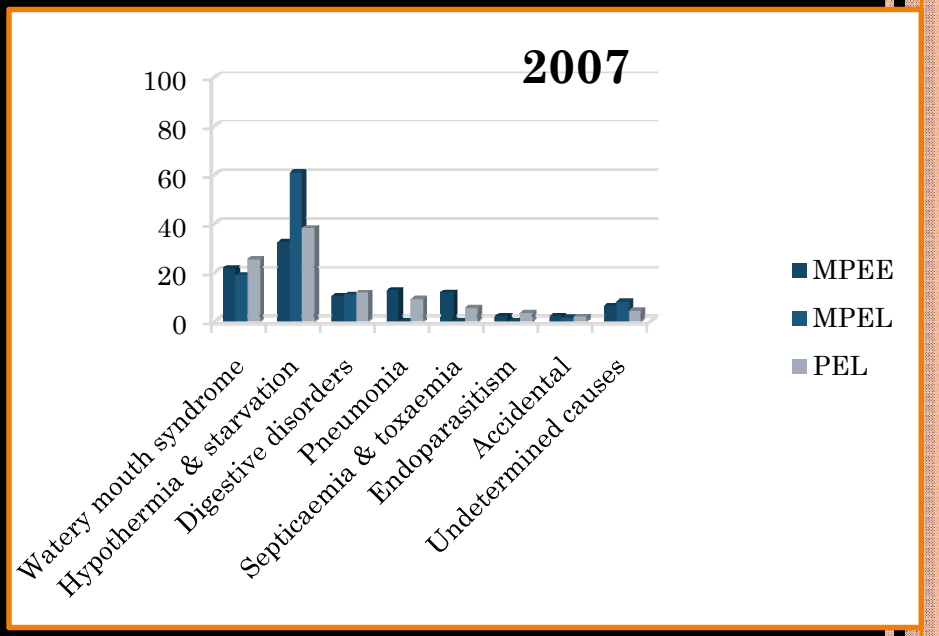

% mortality
20
18
16
14
12
10
8
6
4
2
0
MPEE
MPEL
PEL
2008

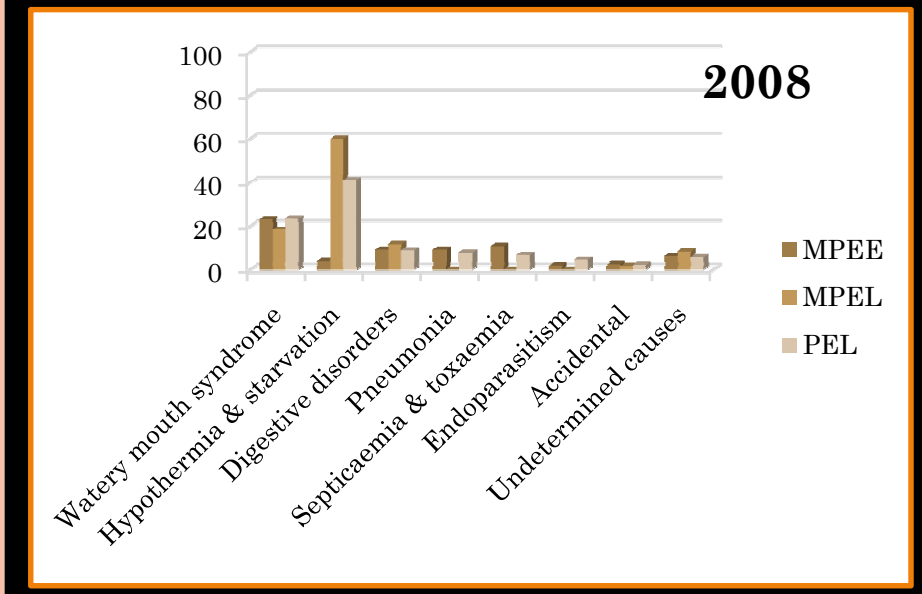
EXTENSIVE

Age in days	Semi-intensive	Extensive	Both systems	
	Percentage of deaths	Percentage of deaths	Percentage of deaths	
0-3	16,97	19,00	17,97	2006
4-7	24,80	26,17	25,47	
8-15	22,68	25,50	24,07	
16-30	17,78	11,33	14,59	
31-45	8,65	8,83	8,74	
46-60	6,69	6,83	6,76	
61-90	2,28	2,33	2,31	
0-3	18,22	19,53	18,87	2007
4-7	30,02	32,60	31,29	
8-15	22,21	22,83	22,52	
16-30	15,01	9,92	12,50	
31-45	8,27	6,93	7,61	
46-60	4,13	5,98	5,05	
61-90	2.14	2.36	2.25	
0-3	18,15	20,56	19,37	2008
4-7	32,05	32,71	32,38	
8-15	22,20	23,18	22,70	
16-30	15,44	10,47	12,92	
31-45	7,34	6,36	6,84	
46-60	3,28	4,86	4,08	
61-90	1,54	2,06	1,80	

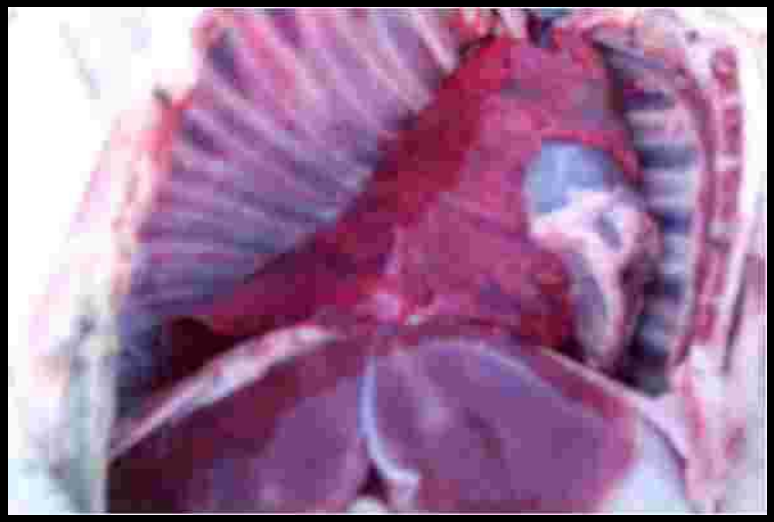
DISEASE	*PERCENTAGE*
Watery mouth syndrome	**33.2**
Hypothermia & starvation	**22.6**
Digestive disorders	**13.4**
Pneumonia	**10.3**
Septicaemia & toxaemia	**9.1**
Endoparasitism	**2.2**
Accidental	**2.1**
Undetermined causes	**7.1**

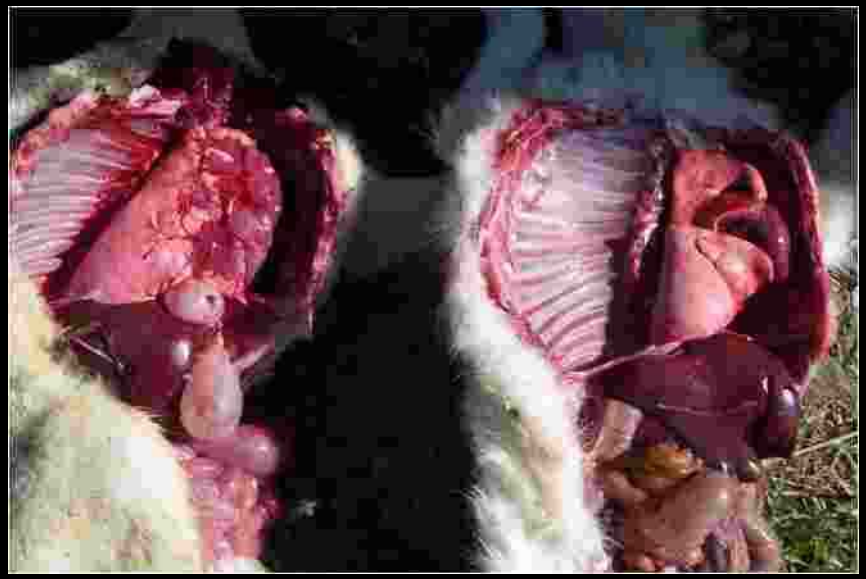






CAUSES OF DEATH






1310 gr


2460 gr
2680 gr

General observations

- The present investigation revealed some important environmental and management factors that affect lamb mortality sheep productive systems in Crete
- Lamb mortality is significantly higher at an early stage of life (2 first weeks)
- Proper monitoring of lambs during the neonatal periods and caring of pregnant ewes should increase the rate of lamb survival of lambs perinatal and postnatal.
- The farmer's income can be significantly enhanced by considering these factors for improving the health status of the animals.

Thank you

- stefanakisa@yahoo.gr
- sotiraki@vri.gr