

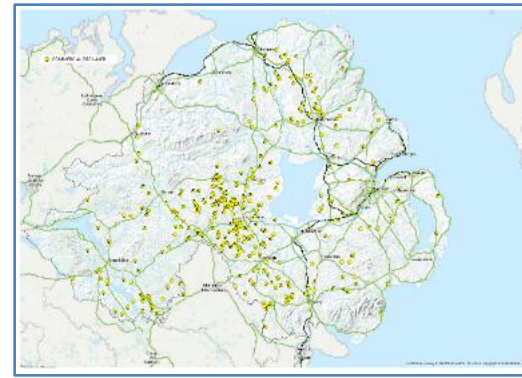
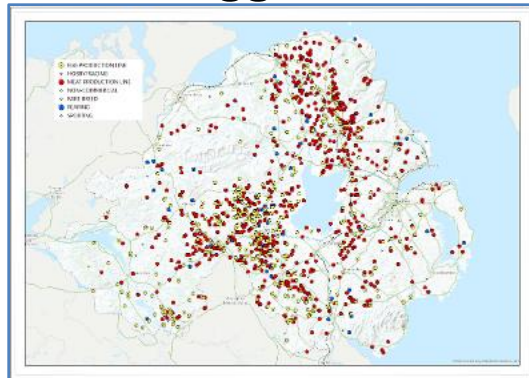
Layers in Northern Ireland 2019

Ian Stewart BVMS MRCVS

Capacity for laying hens in Northern Ireland

			Capacity	Sites
Mar-19	NI	Organic	163,872	24
		Free Range	4,223,480	313
		Barn	201,810	16
		Enriched Cage	1,785,532	34
*16 "sites" with > one system of production			6,374,694	*387

- 7 large egg packing stations ,approx 5 million eggs daily
- 0.5 million hens in Northern Ireland ,eggs packed in GB
- Human Population of Northern Ireland 1.8 million
- Large number of eggs sold to GB and ROI market



Really common layer problems

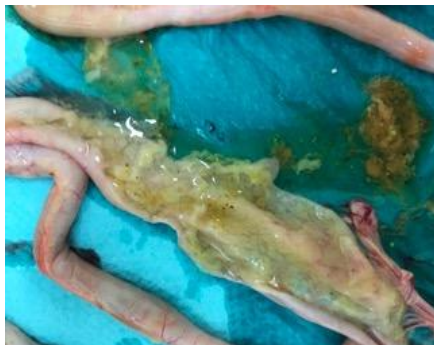
- Intestinal dilatation syndrome
- Spotty liver disease

Intestinal Dilatation Syndrome

- Sudden onset feed refusal or selective feeding
- Drop in production 10 to 25%
- Onset 30 to 50 weeks of age
- Low body weights ,range 100-200g under average wt for age
- No mortality
- Hens look very normal !!
- Progressive !!! % of flock become very light wt
- Concomitant infections/parasitism important



Initial acute phase



- Hens stop in their tracks



Chronic phase



Immature looking birds, very low body wt - hiding up on perches

Many hens not in lay

Intestinal dilatation - abnormal enlargement distal small intestine,
region of Meckel's diverticulum
1 mth to develop

These gut changes could be the cause of the wt loss due to
malabsorption, or may be the result of light hens not feeding

Which comes first ?

Chronic Phase

Distended mesenteric blood vessels

Discoloured ileum with areas of necrosis and haemorrhage

Sporadic gut torsions are the only mortality

2018 50 flocks 500 k hens epidemiologically linked,
only one feed supplier

2019 25 flocks 250k hens several feed suppliers



Chronic phase

- Histopathology, chronic and active changes, inflammatory rather than neoplastic
- Loss of villi
- Loss of crypts, **crypt necrosis**, some with hyperplastic epithelium and necrotic material in lumina
- Mucus cell hyperplasia
- **Prominent lymphoid infiltrates** in lamina propria
- **Inflammation** continues through the muscularis
- Chronic **serositis/peritonitis**
- Tony Patterson MRCVS



Aetiology

- Multi-factorial

Trigger ---As yet to be determined

- Gut health, microbiome
feed issue, toxins, mycotoxins ?
- Genetic
- Infectious, bacterial eg campylobacter ?
viral eg corona virus TuCov ?
unknown pathogen ?

I would like to acknowledge during 2018 the help from:

Mr Paul McMullin MVB MSc DPMP MRCVS

RCVS specialist in PMP

EBVS specialist in poultry vet science

Spotty Liver Disease



Spotty Liver Disease

- Young hens cases > older hen flocks 25 to 50 weeks
- Free range, now also enriched colony systems
- Single outbreak, now recurring infection
- Biosecurity site infection established, subsequent flocks
- Infection from other species, co grazing, slurry
- Production stress peak egg production
- Gut health feed related, parasitism-capillaria

Clinical signs

Drop in egg production

Mortality Peracute and acute infection
 crop full of feed

Dull depressed individual birds, flock looks normal

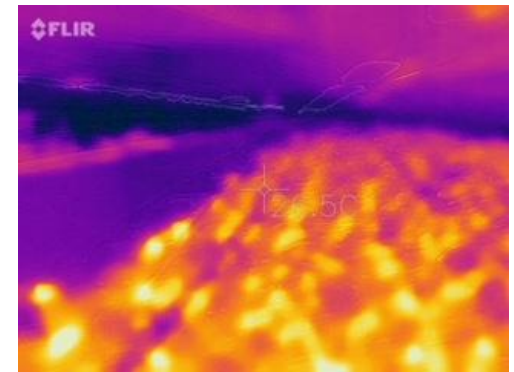
Pyrexia body temp $> 41^{\circ}\text{C}$

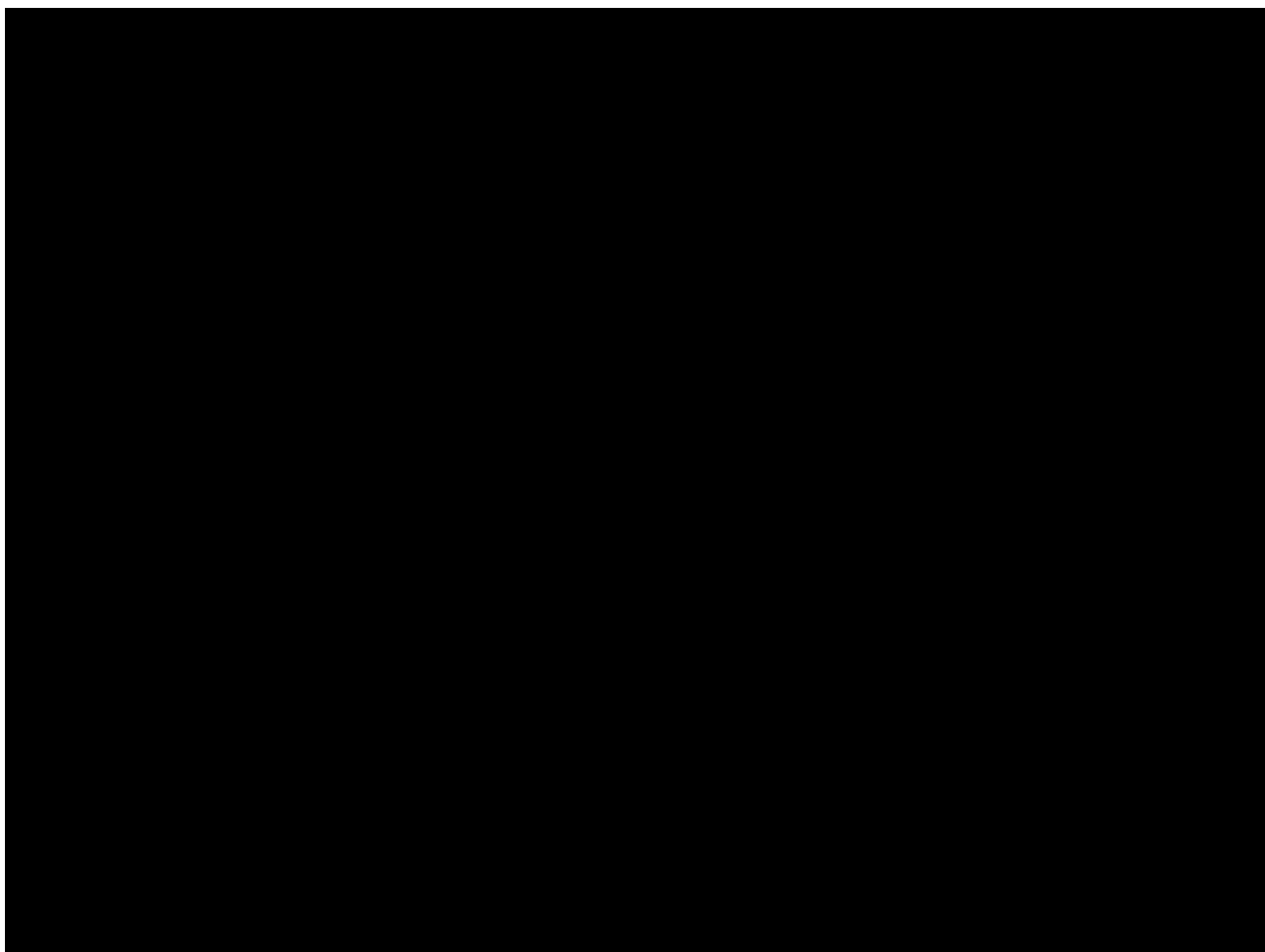
Dark red hyperaemic combs and wattles

Rapidly moribund

Yellow watery diarrhoea

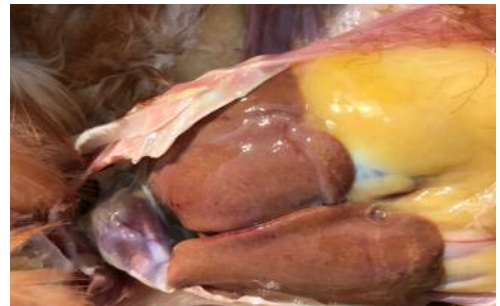
Nest box deaths, die during oviposition





Post mortem findings

- Normal hens in good body weight, often heaviest hens, excess abdominal fat
- In full lay, often fully shelled egg in shell gland
- Darkened feathered looking breast muscle
- Hepatomegaly, with hundred of tiny white spots



Post mortem findings

- Protein/fibrin over liver
- Excess abdominal fluid
- Excess pericardial fluid
- Catarrhal enteritis



Diagnosis

- Campylobacter hepaticus
- Post mortems
- Culture Sensitivity and MIC
- Histopathology multifocal hepatic necrosis with fibrin and associated inflammatory infiltrates
- Molecular confirmation PCR AFBI Vic Smyth

Treatment & Prevention

Antibiotic

in water medication 10 days
oxytetracyclines or tiamulin or tylosin
responsible use MIC difficult to treat

59 flock outbreaks /400 flocks (220 sites) last 18 mths 15% N Ireland
50% required 1 treatment }
25% required 2 treatments } 89 antibiotic treatments
10% required 3 treatments }
10% required 4 or more treatments }

Biosecurity

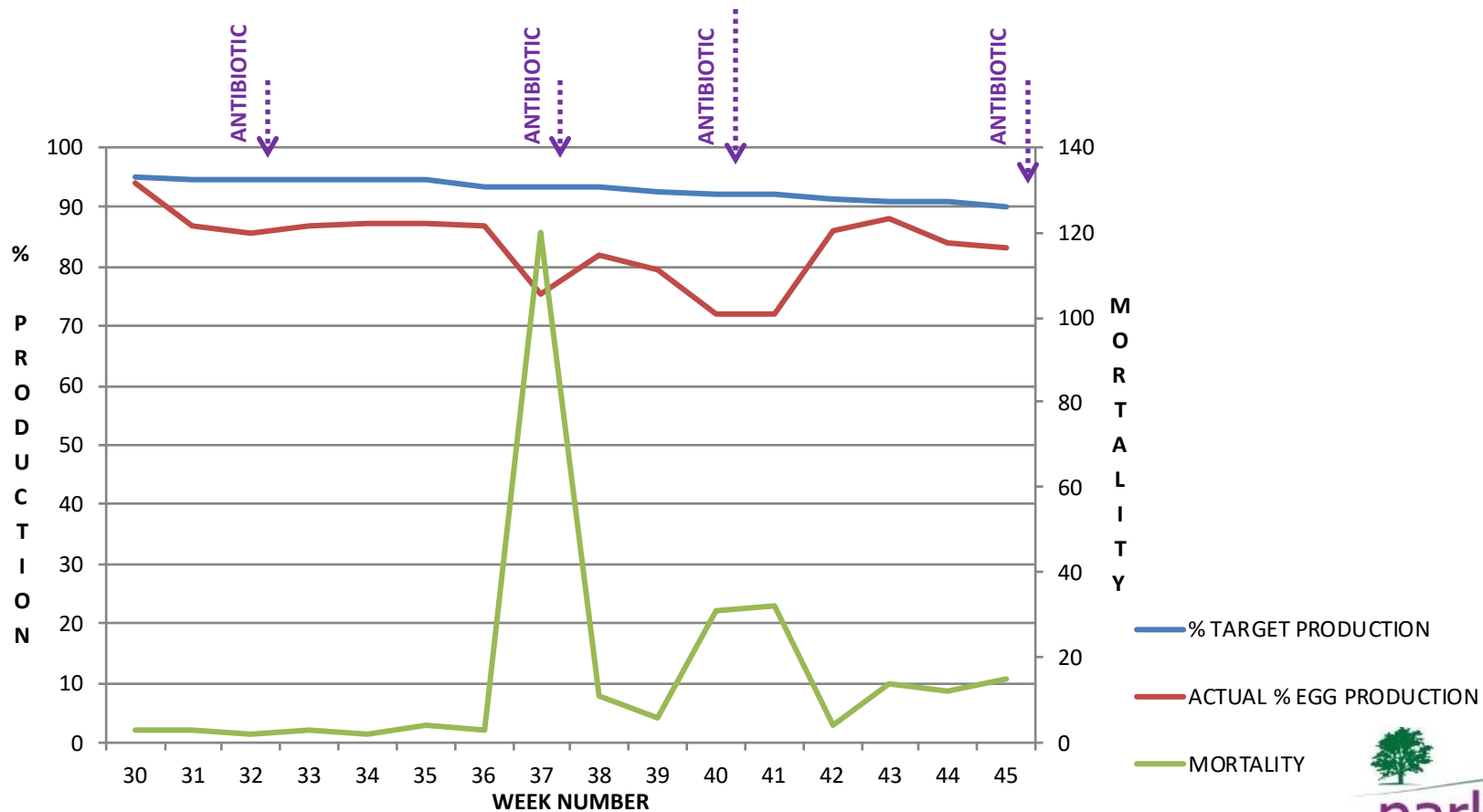
Gut health

probiotic lactic acid bacteria, bactocell
organic acids
MOS
plant essential oils
herbal extracts
in feed preservatives eg formic

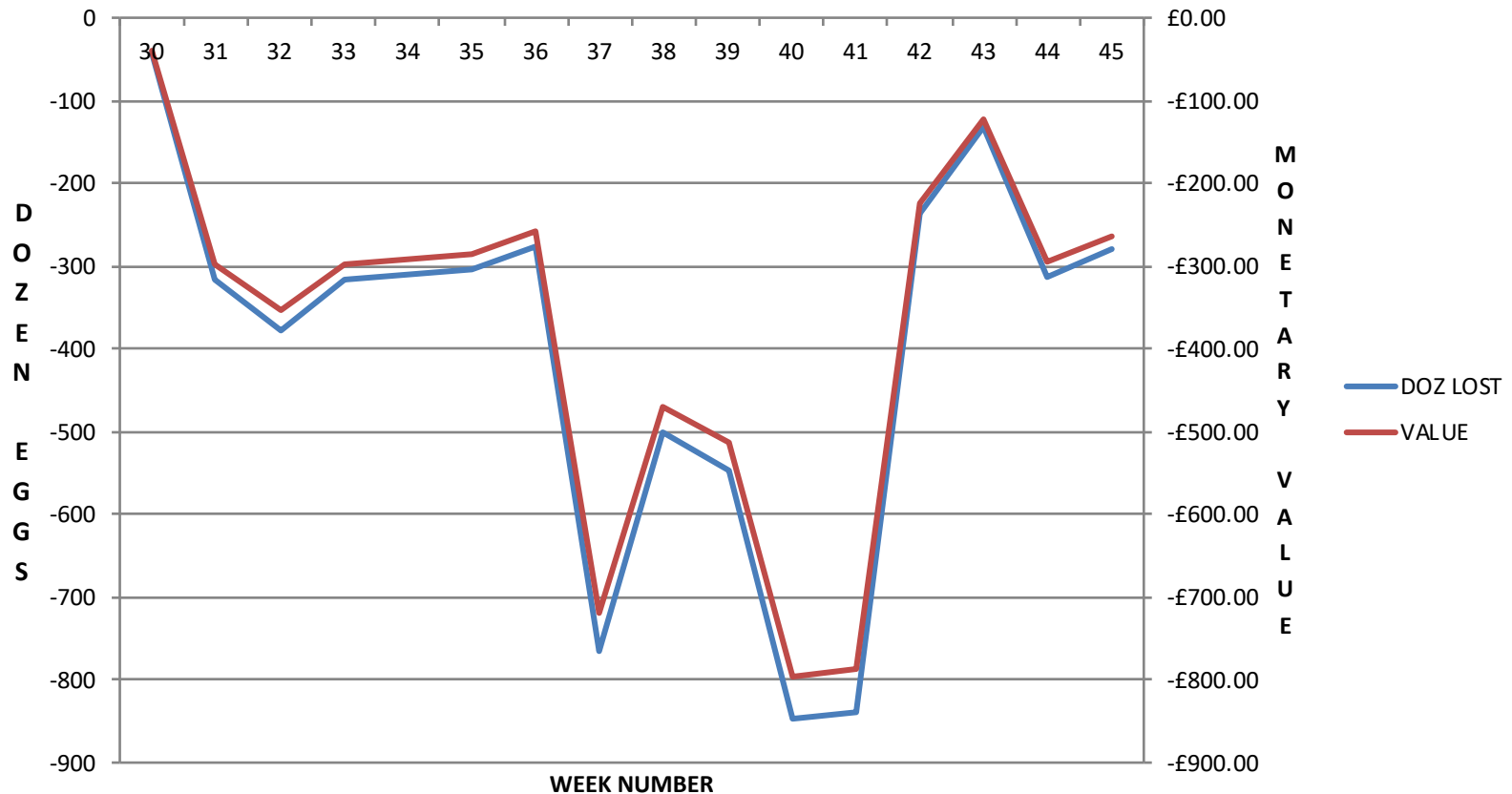
VACCINATION, ASAP

Case History

MJ 1 multi age 5 flock site ex broiler farm converted to FR layers
Spotty liver last 4 years sporadic, now every flock multiple times
Typical outbreak



Production & Monetary Loses MJ H1 2018



Total production loss 10950 dozen eggs equating to 18 eggs per hen housed.

Total monetary loss £10250 equating to £1.41 per bird. (8000 bird free range house)

Cost of antibiotic treatments £1672 equating to 20p per hen housed.

Margin achieved over feed and pullet cost £9.00 per hen housed.



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