



## **Cragg Top – Case Study**

Cragg Top Farm, Barnard Castle, North Yorkshire

**Farmed by:** Richard and Beverly Ward.

**Vet:** Debby Brown, Castle Vets, Barnard Castle

### **SUMMARY**

Cragg Top has been involved in a project looking at the implementation of SCOPS principles since 2007, during which time it has also become a Monitor farm for the locality. Over the last 4 years all of the SCOPS recommendations have been successfully put into practice. Not only has this allowed for better, more targeted parasite control, but there have also been improvements in flock performance, part of which can be attributed to the worm control strategy which is based on monitoring and better knowledge of the parasites on the farm.

### **1. Background and Farm Facts**

200 Ha (500 acres) + woodland. The farm is organic (under the O F & G scheme) and averages 900ft above sea level (range 800 – 1000 ft). The farm is split into three sub units:

- Cragg Top 104 Ha (250 acres)
- Burn Foot 70-80 Ha Grassland + 37 Ha woodland (250 acres of which 20 acres is made into hay as part of the HLS agreement.
- Forthburn 18 Ha (45 acres)

**Sheep:** 800 ewes run as a closed flock., therefore all female replacements are home bred. The ewes are Lleyn & Charollais crosses and all ewe lambs are retained to allow stock numbers to be increased while maintaining a hard culling policy. A New Zealand Suffolk ram purchased for the first time this year with the intention of increasing vigour in the lambs.

Ewes housed and fed from Jan through to March on ration based on Big Bale Silage. They are then turned back out and are all lambed outdoors from 9th April onwards.

The majority of lambs are sold finished either from the farm or from a neighbouring dairy farm where they go on tack. Lambs that are away wintered are sent to the dairy farm in November and about 300 will finish off grass. The remainder are housed after the turn of the year and are finished on barley & peas.

**Suckler Cows:** 100 spring calving cows. Limousin & Belgian Blue X cows and now incorporating Stabiliser Genetics, with the aim of moving away from the original breeding towards the Stabiliser. All replacements are home bred and currently there are 24 heifers ready to come into the herd in 2011.

The cows calve from 21st April and the calves are weaned at housing in late October. This gives a relatively short time on the dams before housing which means that good growth in the first 5-6 months of the calfs' life is vital. The cows are clear of BVD and are regularly screened. They are also monitored as Johnes & Leptospirosis free

In terms of livestock units, the cattle and sheep are quite well balanced (require similar areas of grass annually) which has positive implications for the potential for alternate grazing in parasite control within the practical constraints.

### **Cropping**

Most of the area is down to grazed pasture land, but there is some cropping:

- Grass/clover silage 50 Ha (125 acres)
- 4 Ha (10 acres) Barley / Peas for forage
- Stubble Turnips
- 4.5Ha (11 acres) Clover & Chicory (ploughed in autumn 2010)

The farm is part of the Countryside Stewardship Scheme and Organic ELS and will soon be going into Upland ELS scheme. Chicory & Clover have been trialled at the farm with 5 acres sown at Burn Foot & 6 acres at Cragg Top. This crop was hit hard by the harsh winter and coupled with problems associated with weed control on an organic unit it has been ploughed in, but it is the intention to replace it next year because the lambs have done very well on it.

## **2. Farm Objectives and Challenges**

Cragg Top has been chosen as a Monitor Farm for the North of England and as a result, their physical and financial performance has been analysed on detail. With respect to the internal parasite challenges and potential solutions the relevant issues are:

**Lamb performance** – the growth rate of lambs both pre and post weaning are relatively low despite improvements to the grazing. Internal parasites have been identified as major part of the problem, coupled with a suspected cobalt deficiency which is particularly important for weaned lambs. The impact on the profitability of the farm caused by low growth rates is significant because it slows down lamb finishing and increases feed costs because the numbers finishing off grass/forage is limited.

This issue is also important with respect to the performance of replacement ewe lambs (females are home-bred). It is vital they grow well and are healthy for the future success of the flock and clinical infection for example with *Nematodirus* and/or coccidiosis or heavy infestations of *Teladorsagia* could easily permanently reduce their lifetime productivity. They must also develop their immunity to worms which involves allowing them to meet a worm challenge during their first grazing season, without affecting their performance. s vital to future success.

**Lambing %** - while perhaps not a factor that we immediately associate with internal parasites, there are important links to be considered. Lambing % at Cragg Top has been identified as a priority area for improvement. Impacts of parasites could include ewe lamb growth and development; *Haemonchus* in adult ewes reducing performance; lamb losses due to *Nematodirus* and/or coccidiosis etc. In practice there are three main facets involved; scanning %; number of live births and lamb losses post lambing. In 2009, 149% were scanned with 133% reared which equates to 11% losses from scanning to rearing which is relatively low indicating that it is the number of lambs scanned that needs to be the focus of attention if lambing % is to be increased. In 2010 the higher scan was achieved, with a huge improvement to 172%. Final reared figures are not yet available but there will be a significant improvement in the lambing % overall.

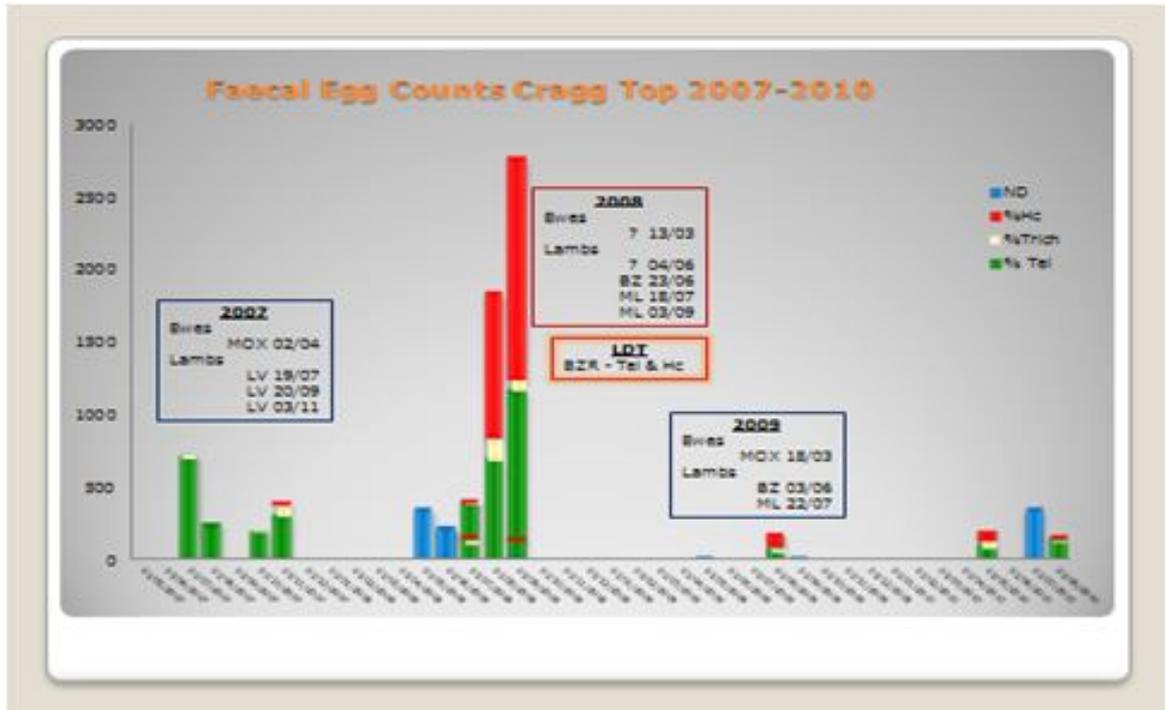
### 3. Internal parasites – Challenges and Solutions

In Table 1 below, the various parasites encountered and the solutions implemented are summarised:

Parasite	Challenge	Solutions adopted
NEMATODIRUS	High challenge on pastures which have carried lambs the previous spring. The altitude/aspect of the farm is likely to have an influence here particularly in years when there is a late and sudden onset to spring which coincides with lambs of 4-6 weeks of age (late May / early June).	BZ is used routinely to treat lambs on the basis of risk assessment. Timing of this is usually in late May / early June and is done irrespective of any FEC monitoring. Where possible high risk pastures are avoided for ewes and lamb in the spring.
COCCIDIOSIS	The impact of this is worse where there is also a concurrent Nematodirus challenge because it tends to be a high risk for lambs at a similar age and Cragg Tops lambing period leaves them at high risk to both.	Lambs are drenched when they are treated for Nematodirus and again 2 weeks later if deemed necessary.
TELADORSAGIA (Ostertagia)	From the monitoring done levels are not out of the ordinary but of course there is BZ resistance to be taken into account	FEC monitoring to determine the need to drench over the main grazing season. Lambs moved to aftermaths post-weaning to avoid the high larval levels July onwards.
HAEMONCHUS CONTORTUS	Contrary to what many believe, Cragg Top underlines the fact that Haemonchus now occurs in all areas of the UK so everyone needs to be on their guard. The main challenge is that it tends to be highly sporadic so careful monitoring is essential coupled with knowledge of the AR status since HC tends to be resistant to BZ in most cases. The other challenge associated with it is that it can affect adult sheep, causing ill thrift and at very high levels anaemia and death.	FEC monitoring in place and knowledge of the AR status of HC means that effective treatments can be used.
TRICHOSTRONGYLUS	2010 has underlined this as a challenge at Cragg Top with very high counts in September – November in finishing lambs. This has had a detrimental effect on performance, particularly on the most badly affected grazing areas as demonstrated by the monitoring of growth rates.	FEC monitoring in lambs which continues into the autumn/early winter. Knowledge of AR status. Moving to 'safe' dairy pastures in November to avoid the challenge.
FLUKE / SCAB	These are not considered to be an endemic problem on the farm. However, there are risks involved when any stock (bulls / rams in this case) are purchased and a suitable quarantine routine is essential (see below).	Quarantine treatments for all incoming stock and any returning from grazing that may have had somebody else's sheep on it.

#### 4. SCOPS Project Data

Samples available for 4 seasons (2007;8;9;10). Summary shown in the graph below (MT ppt) which illustrates the variation between the years in both the extent and the species of worm involved.



ND = Nematodirus

HC = Haemonchus contortus (Barbers Pole)

Trich = Trichostrongylus (Black scour worm)

Tel = Teladorsagia (Ostertagia)

#### 2007

Worm species predominantly Teladorsagia (Ostertagia) from sampling which started in July, though there was the need for treatment for both Nematodirus and coccidiosis in May. – is that correct - was this outside the project

Ewes were treated with moxidectin at lambing and lambs were drenched with LV on 3 occasions in July, September and November based on the results of FECs.

#### 2008

Ewes were treated with moxidectin at lambing and FEC monitoring started in early May.

Lambs were treated on 4 occasions in early June and again in late June (both BZ) and with an ML in mid July and early September.

Haemonchus contortus involved in the very high (>1000eggs) counts in August and September and this demonstrates how Haemonchus can 'pop up' apparently from nowhere and cause problems. An

LDT test showed that there was resistance to BZ in both the Haemonchus and Teladorsagia which may have been a factor in that BZ was used for the first 2 treatments this season.

## 2009

Ewes were again treated with moxidectin at lambing and FEC monitoring started in early May. BZ was used for Nematodirus in early June with lambs only treated once more in late July with an ML. Low FECs all the way through, evidence that Haemonchus was still present but this year at very low levels

## 2010

Ewes were treated with LV this year at lambing to try and avoid a fourth consecutive year of MOX use in the per-parturient period. FEC monitoring started in early May with BZ used for Nematodirus in early June

FECs in lambs remained low through to August, but since then in the latter part of the summer/autumn, FECs have been very high. In mid Oct an FEC of 2225 was recorded and lambs were treated with LV. In early November the count was 425epg and they were treated again (ML) prior to moving to 'clean' dairy ground (delayed move strategy following treatment).

### Anthelmintic Resistance Status

LDT tests showed that there was detectable resistance to BZ in both Haemonchus and Teladorsagia. Subsequently a full FECRT was carried out with the results shown in the table below:

#### FECRT 2010: (epgs)

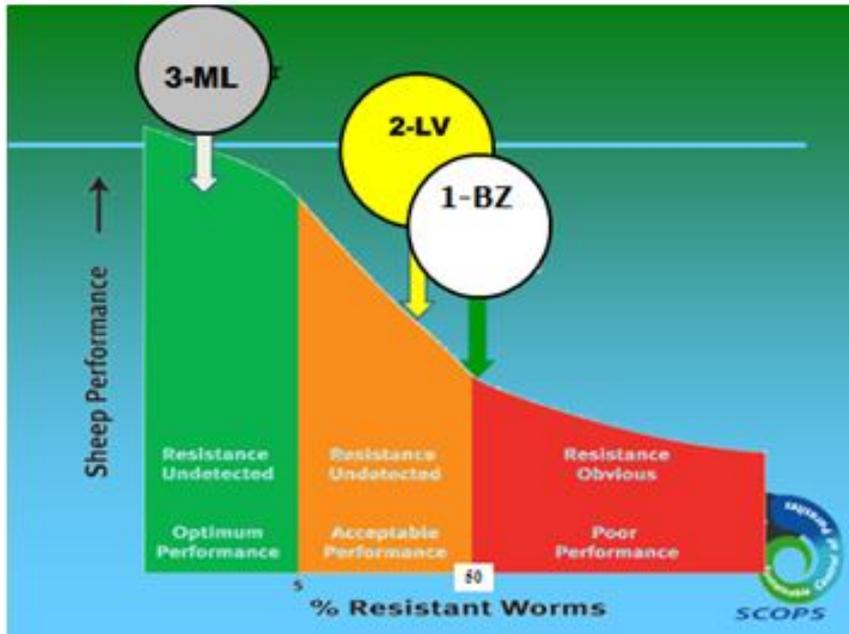
Group	Start	+ 7 days	+ 14 days
A = ML	250 250 Nems		<25 <25 Nems
B = LV	250 200 Nems	75 <25 Nems	
C = BZ	300 275 Nems		150 <25 Nems
D = controls	275 300 Nems	150 300 Nems	375 225 Nems

These data show:

- ML was fully effective against all worm species
- All 3 groups were fully effective against Nematodirus
- BZ and LV not fully effective

Put into graphical form to help illustrate this to help guide future use of groups 1,2 and 3, it is clear that the good news is that the ML group appears still to be fully effective; the bad news is that this situation will have to be protected carefully by reducing selection pressure on the 3-MI group whenever possible.

**Graphic Representation of AR Status at Cragg Top:**



## Discussion Session – Open Day 21<sup>st</sup> October 2010

During the course of the meeting, Vet and SQP delegates were split into groups and were asked to discuss the following questions. The resultant feedback is summarised below:

**How would you suggest a new anthelmintic group is used on this farm?**

- As part of the quarantine routine for in-coming sheep- this should include MOX particularly if there is any risk of sheep scab coming in.
- The AR status of the farm means that the BZ and Lv groups are already showing tangible levels of resistance. This means that the ML group are going to have to be used more in the future for good worm control. Careful, early integration of 4-AD to help slow the development of AR to the ML group should be considered.

**The farm has cattle, sheep and conservation within the production system. Can you suggest ways this balance might be used to improve worm control?**

- An annual grazing plan which looked for area where cattle, sheep and conservation could be integrated to provide pastures of low infectivity in the spring for ewes and lambs + help reduce the Nematodirus risk
- Early season grazing of cattle or conservation to provide lower challenge for weaned lambs
- Possibly some mixed grazing but issues with sward management were recognised.

**Cragg Top is not considered to have a fluke problem, nor is sheep scab a significant threat because they have no open fell. Choose one and suggest what the implications for a farm like this would be.**

- Sheep scab would put added pressure on the MLs, particularly as the farm is organic – this would make the integration of 4-AD monepantel more urgent as a treatment during the mid/late grazing season.
- Fluke would require specific treatments for both cattle and sheep. Choice should be limited to narrow spectrum products where possible and not combinations that result in unnecessary use of a broad spectrum wormer.

## 5. Implementation of SCOPS principles and Future Options

Table 2 lists the 8 SCOPS principles and the actions under each of these at Cragg Top:

PRINCIPLE		ADOPTION	FUTURE OPTIONS / IMPROVEMENTS?
<b>Have a strategy</b>	✓	Working with Vet and making adjustments as the season requires	There is FECPAK on the farm which could be used on a very regular basis to monitor individual mobs more closely. In the light of the Haemonchus issue, this would be very helpful because it can catch you out very quickly.
<b>Drench Correctly</b>	✓	Care taken with does rates and equipment	Eid and increased monitoring of weights will help to gauge dose rate more accurately.
<b>Quarantine treatments for all in-coming sheep</b>	✓	Monepantel + moxidectin for rams on entry in 2010	When the 5 <sup>th</sup> new group is available this will supersede the moxidectin/
<b>Test for anthelmintic resistance</b>	✓	Over the last 4 years this has been done.	Regular drench tests on the ML and LEV group at different times of year as a routine
<b>Use anthelmintics only when necessary</b>	✓	Regular use of FECs during the season with lambs drenched on the basis of these results (except for Nematodirus)	There is scope to try and do more to integrate cattle and sheep grazing on the farm. There are logistical issues but the benefits would be worthwhile in particular if the pastures are given risk ratings and the worst are rested from sheep for as long as possible.
<b>Select the most appropriate product</b>	✓	Care is taken to make sure this is the case. BZ used for Nematodirus; no combinations used unnecessarily;	Monepantel will be integrated into the programme next year as a mid/late season dose. Worm counts too low this summer (2010) and it was thought to be too late in the year by the time the FECs showed high levels in October.
<b>Maintain a susceptible population of worms in refugia</b>	✓	Not all ewes are treated in the spring – fittest and singles are left untreated (<80% are done). Partial treatment of groups of lambs on to aftermaths – leaving the biggest, fittest 10-20% untreated. Delayed movement of lambs on to dairy pastures in the autumn.	With eid coming into play in future it should be possible to instigate more targeted treatments using growth rates of lambs for example. This would replace whole group treatments during the season and further reduce selection pressure.
<b>Reduce Dependence on anthelmintics</b>	✓	Yes. Chicory and clover swards (bioactive forages) have been used and will be used again in the future.	The nutritional aspects of this are also helpful on an upland farm, allowing for improved growth rates and resilience to parasites out with the anthelmintic

Aftermaths are also used for weaned lambs. properties. The main issue for this farm is growing this within the constraints of being organic and the problems this causes with weed control.

Use of dry ewes on high risk pastures in the second part of the season to reduce contamination levels.

Lleyn Rams with High FEC EBV have been purchased to produce ewe replacements. The breeding option is a good one for this farm because it is breeding females. However, this is a long term option and experience says that it may be 13 years or more before there is any tangible effect on ewe egg output sufficient to reduce the need for anthelmintics.

## ***Lesley Stubbings***

November 2010

