

## MANAGING PARASITES WITH GOOD NUTRITION

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We all know that if we eat better, we feel better. For many years, we have also known that protein nutrition can affect a sheep's resilience to gastrointestinal parasites and it can also reduce the consequences of parasite infections. Therefore, as sheep producers it is important to pay close attention to what our sheep are eating.

To better understand how nutrition can affect parasitism, we need to take a closer look at what happens within growing animals and reproducing animals. One of the first signs that we see is the reduction in feed intake. Research by Sykes et al., 1988 and Coop et al., 1982 found that feed intake is often reduced by as much as 15 to 20%. Another problem that is occurring internally is the loss of protein and tissue damage within the digestive tract. This relates to decreased efficiency in the utilization of feeds. Both of these cause production losses through decreased growth, decreased milk production and to some extent decreased reproductive efficiency.

Numerous research studies have looked at how to improve production and growth without the use of anthelmintic (dewormer) treatments. These studies found that increasing the metabolizable protein in the diet during times of protein scarcity enables sheep to become more resilient to parasite infections and may also contribute to developing immunity to infections. Research looked at a number of different protein supplements including soybean meal, fish meal, cottonseed meal, urea and dried distillers grains with solubles (DDGS). Many of these studies have also found a reduction in fecal egg counts over a long

term period when dietary protein levels were increased.

As animals react to parasite infections and the scarcity of nutrients, they tend to allocate how they will use their feedstuffs. Coop and Kyriazakis, 1999, state a possible ordering of priorities to the animals. Young, growing animals will tend to focus on maintaining body protein, then acquiring immunity to parasites, followed by protein gain and then maintaining body lipids or body condition. For reproducing animals, they state that maintenance of body protein is the priority followed by pregnancy or lactation, then expression of immunity and body condition.

So, how can we as sheep producers use this information for our flocks? Certainly, looking at nutrition and protein in particular can be useful in an integrated approach to internal parasite management. Protein supplementation during times of the year when sheep consume lower quality feed would certainly help sheep to better manage parasites. Increasing metabolizable protein by as much as 20 to 25% was indicated in research by Datta et al., 1998, Donaldson et al., 2001 and Houdijk et al., 2003.

The benefits of increasing protein levels are especially seen with ewes rearing multiple lambs when they are in relatively poor body condition and with young growing lambs that have the genetic potential for fast growth. Further research is needed to

determine the best protocol for protein supplementation to develop immunity and resilience to gastrointestinal parasites. For now, producers should monitor protein levels in rations throughout the year to insure that feeds are meeting the national resource council's recommendations.

For more information on managing parasites in sheep, contact Melanie at the Penn State Extension office in Bedford County at 814.623.4800 or by email at meh7@psu.edu.



**Monitoring forage nutritional levels and adding supplements to adjust protein levels is one method that producers can use to assist sheep in better managing parasite infections.**