Chapter VII: Conclusion

Data discussed demonstrates that the three experimental groups manifest very interesting and characteristic trends. The results indicate that homeopathy is able to reduce parasitic burden keeping animals below the threshold of FECs, that can cause zootechnical damage. Moreover, animals of the homeopathic group tested in the fourth sampling, resulted in excreting an inferior number of eggs than those of the “Drug” group. Therefore, in the long term, chemical drenches are not able to assure a valid protection against parasitic diseases.

Negative correlations were found between EPG with PCV, HgB and blood proteins therefore indicating that at these level of infestations, gastrointestinal nematodes are capable of influencing parameters which are highly linked to the health status of an animal. Parasitic burdens can indeed cause anemic states and loss of blood proteins inducing a pathological state and associated detrimental effects.

In this study, the haematological parameters are significant when differences between results of the two samplings are taken into consideration; this is true regarding Haemoglobin, Eosinophil count, Lymphocyte count and Neutrophil count. On the other hand, mean values of the Red cell distribution Width are found to be significant only of the “Drug” group in the 2nd sampling. The leukocyte differential formula is helpful to assess when evaluating animal welfare because of the direct relationship between these blood cells and glucocorticoid levels. Lymphocytopenia, eosinopenia and neutrophilia are three factors which together indicate an increase of the cortisol level due to stressful events, and even though these blood cells reflect what could be a condition of stress, no significant correlation is evidenziated.

On a global scale, biochemical analysis of serum seems to be more closely associated with the physiological phase of the animal in terms of productivity. For instance, the values which result in being significant are cholesterol, creatinine, glucose, NEFA and blood proteins. The trends have been discussed in depth and it can be established that they are significant only when analyzed regarding the period and not the group. Therefore, these indicators essentially reflect the characteristic and expected modifications of the energetic, protein and lipid metabolisms, which come about during the period that comprises postpartum and lactation. Naturally, the substances belonging to the lipid metabolism gradually undergo a decrease (cholesterol and NEFA); glucose increases and the protein asset demonstrates a mild improvement (creatinine decreases and blood proteins increase).

The immunological assay carried out demonstrates only a few interesting results which deserve to be commented. Lysozyme values decrease in all three groups from the 1st to the 2nd sampling, which could be caused by the decrease of the parasitic burden. CD4+ T cells are found to be higher in the animals of the “Control” group in sampling 2 which could also be influenced by the higher parasitic infection. However, these correlations do not result in being statistically significant. On the bright side, the most interesting correlation of all, in my view, is the one seen between the CD4+/CD8+ ratio and the cortisol value. Indeed, in this study, this particular positive correlation is found to be significant. Therefore, as the value of cortisol in the blood increases so does the ratio.

CD4+ and CD8+ percentages do not result in being significant when studying the relationship between these and parasitic burdens, neither with the homeopathic remedy.
Therefore, in this research, a direct association of these immune cells and the state of disease has not been found.

Interestingly enough, periparturient ewes demonstrate three very important correlations with cortisol, lysozyme and CD4+/CD8+ ratio. Ewes in this critical and delicate physiological phase have indeed shown a lower ratio of the two T cell subsets, suggesting a lower lymphocyte reactivity. In addition, cortisol values are lower which can easily be associated with the increase of prolactin in the blood due to the onset of lactation. Finally, lysozyme values are higher, almost double in periparturient sheep which seem to possess an enhanced innate immunity but an attenuated acquired immune response.

Fertility rate and BCS result satisfactory demonstrating resilient characteristics of this breed. FAMACHA® scores registered indicate that further parameters need to be evaluated simultaneously in order to fully assess the health status.

In wrapping up this conclusion, the fact that no significant differences have been revealed between the three experimental groups when regarding the parameters which measure the health status, confirms the notion that homeopathic medication can be used as a valid supplemental tool in controlling parasitic diseases, especially in certain locations where environmentally-friendly methods of reducing pasture contamination should be implemented without refrain.