Correcting cobalt deficiency

Laurence C. Snook

Follow this and additional works at: http://researchlibrary.agric.wa.gov.au/journal_agriculture4

Recommended Citation

Available at: http://researchlibrary.agric.wa.gov.au/journal_agriculture4/vol2/iss2/4
IMPORTANT DISCLAIMER

This document has been obtained from DAFWA's research library website (researchlibrary.agric.wa.gov.au) which hosts DAFWA's archival research publications. Although reasonable care was taken to make the information in the document accurate at the time it was first published, DAFWA does not make any representations or warranties about its accuracy, reliability, currency, completeness or suitability for any particular purpose. It may be out of date, inaccurate or misleading or conflict with current laws, polices or practices. DAFWA has not reviewed or revised the information before making the document available from its research library website. Before using the information, you should carefully evaluate its accuracy, currency, completeness and relevance for your purposes. We recommend you also search for more recent information on DAFWA's research library website, DAFWA's main website (https://www.agric.wa.gov.au) and other appropriate websites and sources.

Information in, or referred to in, documents on DAFWA's research library website is not tailored to the circumstances of individual farms, people or businesses, and does not constitute legal, business, scientific, agricultural or farm management advice. We recommend before making any significant decisions, you obtain advice from appropriate professionals who have taken into account your individual circumstances and objectives.

The Chief Executive Officer of the Department of Agriculture and Food and the State of Western Australia and their employees and agents (collectively and individually referred to below as DAFWA) accept no liability whatsoever, by reason of negligence or otherwise, arising from any use or release of information in, or referred to in, this document, or any error, inaccuracy or omission in the information.
COBALT is essential in the food eaten by sheep and cattle. As little as one part of cobalt in 10,000,000 parts of food appears to be adequate. But if this mere trace is missing, ruminants will waste away and die, even when the feed appears excellent in every other way.

For many years it was considered that cobalt deficiency in Western Australia was confined to the coastal areas. It is now apparent, however, that quite serious losses are occurring over extensive areas where the cobalt deficiency is only marginal. In many cases, the pastures contain enough cobalt to maintain adult stock in apparent good health, but there is not enough present for the well-being of young animals. Quite a lot of unthriftiness in lambs and calves could be a direct result of sub-optimal intakes of cobalt. Even the apparent good health of the adults may be a delusion. Border-line deficiencies can be costly, for the very reason that symptoms are not obvious, although production is at a lower level than otherwise would be obtained. A deficiency on one farm was discovered for example, while seeking the cause of frequent cases of ketosis or acetoinemia in the cows. The loss of appetite which precipitates this disease was apparently due to a partial deficiency of cobalt. In a beef herd at Mayanup, an infertility problem appears to have been overcome with cobalt supplements. On an adjacent farm the growth rate of the lambs has improved following the application of cobalt. At Cranbrook, a weaner problem was cured in a fortnight following the use of cobalt drench. At Mt. Barker, lack of size in a stud flock appears to be due to a partial lack of cobalt in the pasture.

Analyses of liver and blood from suspect properties are confirming the suspicion that border-line cobalt deficiency may occur in many so-called “sound” areas. Where young stock, in particular, fail to thrive on what appears to be good feed, the possibility of cobalt deficiency should be considered.

Stock suffering from cobalt deficiency show many of the symptoms associated with worm infection. In fact such animals often carry a heavy worm burden because the unthriftiness associated with cobalt deficiency makes them particularly susceptible to infection with worms. This type of unthriftiness can be prevented by making sure that all young stock receive adequate cobalt.

Cobalt bullets provide farmers with an excellent diagnostic tool where cobalt deficiency may be suspected. If cobalt bullets are given to half of a line of unthrifty weaners or calves, the treated animals will quickly respond if cobalt is needed. If, within two or three weeks, no difference is apparent between the two groups, then it can be accepted that lack of cobalt is not the main cause of the unthriftiness.

Cobalt deficiency can be overcome cheaply and simply by the use of superphosphate containing cobalt. This costs only 44s. per ton more than ordinary super and contains enough cobalt to correct any deficiencies if applied once every three years. The extra cost is trivial and no
extra labour is involved. In deficient areas the farmer should buy superphosphate containing cobalt every third year. Alternatively, each year one-third of the fertiliser should contain cobalt. Each bag of cobalt superphosphate contains about 7 ozs. of cobalt sulphate for an additional cost of 4s. The private individual cannot buy cobalt salt as cheaply as this, so nothing is gained by “mixing one’s own,” or applying the cobalt in any other form. Cobalt is not a plant food but there are many advantages in treating the pastures. This means that every animal grazing on the pasture necessarily obtains adequate amounts of cobalt. All the work involved in the administration of cobalt bullets is thereby eliminated and there is no worry about unthriftiness in animals which reject the bullets.

Much has yet to be learnt about the frequency with which cobalt must be applied to correct deficiencies in a pasture. On deep coastal sands 2 ozs. of cobalt sulphate per acre is just about enough for 2 years. At the Bramley Research Station, pasture treated with 2 ozs. per acre contained an abundance of cobalt for 2 years, but was borderline in the third year. Cobalt superphosphate contains almost 7 ozs. of cobalt sulphate per bag and this should be a generous allowance for three years under most conditions. Whenever the farmer has doubts in this regard he should consult his District Adviser.

Emphasis has been given in this talk to the cheapness and effectiveness of using cobalt superphosphate to correct cobalt deficiency. Where top dressing is not carried out, other methods have to be used. The use of cobalt bullets is now widespread. Salt licks can also be used by adding 1 oz. of commercial cobalt sulphate to each 100 lb. of lick. When drinking water can be treated by adding 1 oz. of cobalt sulphate to each 10,000 gallons of water, the cost is negligible—a mere 30s. per annum for each thousand sheep.

Before concluding, emphasis can again be given to the seriousness of the losses which occur when sheep and cattle are on rations deficient in cobalt. Any risk of a lack of this essential element can be eliminated cheaply and easily where cobalt superphosphate can be used as a fertiliser.