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Pulling the wool off

Department of Agriculture, Western Australia
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Pulling the wool off

The Department of Agriculture has begun a three year project to study the potential for "chemical shearing" or, more correctly, biological defleecing.

In recent years, sheep research workers have been investigating alternatives to shearing — one of the biggest direct costs to wool growers. "Chemical shearing", or biological defleecing, is one of these alternatives. Sheep are dosed with a drug to cause wool fibres to completely or partly stop growing. If the drug causes a complete break in the fibre, a "frank" break, the fleece falls away some days after the drug is administered. This leaves a naked sheep (pictured) which is then vulnerable to exposure. Such sheep must be kept in sheds for about four weeks to allow a protective stubble of wool to grow. Another possibility is an adhesive coat which can be sprayed on to the sheep following defleecing. If the dose of the drug is less, it may cause a "mini-break" in the fibre. The fleece does not fall away completely, but is held together and in place by some unbroken fibres. The mini-break seems more practical especially when it is associated with the development of automated fleece plucking machinery. However, a major problem at present is that much of the fleece falls off in the paddock. One solution to this problem is being investigated by Dr David Harris, an industrial chemist appointed for this project. The aim is to develop a washable adhesive which can hold the fleece together until "shearing" time. The adhesive would be sprayed on when the drug for defleecing is applied, and about five weeks later the fleece could be peeled off, leaving a protective stubble of wool.

Other research by the Department of Agriculture is to examine the effects of season and stocking rate on the efficiency of any administered drug. For example, in autumn when feed shortage causes some degree of natural break in the wool, less of the drug may be needed, or perhaps husbandry techniques could be developed which would do away with the need for the drug.

The Western Australian research is part of an intensive, nation-wide programme on alternatives to shearing. One major research effort by the CSIRO Division of Animal Production is seeking a suitable defleecing drug. Proper "chemical shearing" — applying a chemical to the fleece to cause a break — is also under investigation by the Queensland Department of Primary Industries. Despite the enormous obstacles to biological and chemical defleecing, the potential benefits are large. The Australia-wide programme is aimed in the short term to see if it is ever likely to be feasible. If the programme does show some possibilities, it may still take many years to develop the methods to the stage where they are practical.

"Shearing" at Wongan Hills as part of the wool harvesting research. Sheep treated with a drug to cause complete shedding of the wool require protection to avoid exposure.