

CHEMICAL SHEARING : EFFECTS IN FIELD TRIALS OF REPEATED DOSES OF CYCLOPHOSPHAMIDE ON PREGNANCY, WOOL GROWTH AND CPA TOLERANCE

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The anti-cancer drug, cyclophosphamide (CPA) has been proposed as a chemical defleecing agent for wool harvesting. The CPA is highly toxic and a long-term study was undertaken to evaluate its effects in a breeding flock of Merino ewes.

Four groups of 5 were given 15, 20, 25 and 30 mg of CPA /kg body weight orally in -the last trimester of pregnancy in 1973. A control group was conventionally shorn. The treatments were repeated in 1974 but in 1975 and 1976 the groups on 15 and 20 mg of CPA/kg were given 30 and 25 mg of CPA/kg respectively. The lambs produced each year received the same CPA treatment as their dams.

Doses of 15 and 20 mg of CPA/kg did not remove wool from all the ewes in the, second year and they failed also to remove wool from the ewes' offspring on their first exposure to CPA. The 25 and 30 mg of CPA/kg dose rates in the last trimester of pregnancy were effective in all 4 annual defleecings, with no measurable long-term effects on the ewes, either in wool production (Table 1), or on the lambs they reared.

TABLE 1: Wool quantity and quality of the experimental groups in 1976.

CPA(mg/kg)	Fleece weight (kg±SE)		Fibre diam. µm	Staple length cm
	Greasy	Scoured		
0(control)	4.12±0.34	2.66±0.21	21.95±0.95	8.8±0.7
25	4.60±0.28	2.86±0.16	20.94±0.43	9.1±0.6
30	4.23±0.16	2.66±0.15	20.65±1.23	9.4±0.2

Doses of CPA did not induce statistically significant differences in the fleece, confirming Rougeot and Thebault (1975) 5-year observations.

Rugs were used from the time of drug administration to prevent the loss of wool in the field. Since the sheep were not housed at any stage of the investigation, rugging was required. after CPA defleecing, to prevent losses from exposure to the early winter conditions. In the 4 years of CPA defleecing, 2 deaths were attributed to adverse weather conditions. The chemical defleecing of sheep was shown to be possible with CPA in. small flocks of sheep with limited supervision of the animals. No decrement in fecundity, lamb growth or' wool yield was detected in these groups.

Lambs from the CPA-treated ewes had growth rates similar to those of the control group. The lambs born were maintained in the experimental flock and the wool production of the CPA-treated offspring did not vary from that of the control group. A second generation of sheep was apparently unaffected by the CPA treatment.

ROUGEOT, J. and THEBAULT, R-G. (1975). Tome II: *Espece ovine*, Paris, France; INRA and ITOVIC, 352-360.

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