SESSION 8b.

DISCUSSION

Mr. Preston explained that the greater efficiency of United Selective 2,4-D over other forms of 2,4-D in Queensland might be due to the fact that it contained a high percentage of wetting agent. It had been found in U.S.A., for example, that Tween 20, a wetting agent, increased the penetration of 2,4-D into leaves by 150-200%. The main factor in the use of wetting agents was cost versus increased efficiency.

Early work in N.S.W. had confirmed Mr. Dodd's statement that amine formulations were more effective on noogoora burr than esters, but later work had shown that under some conditions the volatility of the esters compensated for poor coverage and gave better results.

Mr. Preston stated that the addition of emulsifiers to ester formulations had given interesting results. Emulsions ranging from homogenised emulsions with no chemical emulsifiers, to those with high percentages of emulsifiers had been tested. At low rates of addition, and up to a certain critical point, effectiveness did not vary greatly but above this critical point the effectiveness dropped off sharply. This might be due to the wetting of the leaf surface by the aqueous phase and the run-off of the oily phase containing the active ingredient.

In regard to volumes of carrier, it was stated by Mr. Preston that the kill of linseed decreased as volumes were increased from 5 to 50 gallons per acre; 50 gallons per acre was a safe limit for this plant. On the other hand the injury to skeleton weed became progressively greater as volumes were increased to an optimum of 40 gallons per acre.

Mention was made of an instance in N.S.W. of an increase in the palatability of variegated thistle (Silybum marianum) sprayed with $\frac{3}{8}$ lb. of 2,4-D per acre. It was suggested that combined spraying and grazing might effect substantial economies in treatment costs except for the possibility of nitrate poisoning to stock. However, no deaths occurred in sheep grazed on sprayed mintweed, a plant known to cause nitrate poisoning in animals. Mr. Dodd stated that hemlock sprayed with 2,4-D, and subsequently grazed had recovered and that this recovery might have been due to removal of leaves containing the 2,4-D. No poisoning of animals resulted from ingestion of sprayed hemlock.