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THE HYPOCHOLESTEROLAEMIC EFFECT OF OAT BRAN, BARLEY AND MALTED BARLEY

K.A. JACKSON and D.L. TOPPING

Cereals such as oats and barley lower plasma cholesterol in both experimental animals and man (Chen et al. 1981; Newman et al. 1989). These cereals are high in water soluble (1→3), (1→4)-ß-D-glucan which is believed to be the active hypocholesterolaemic agent (Wood et al. 1989). However, during the malting process, the ß-glucan in barley is almost completely degraded.

In this study we have compared the effects of oat bran, barley and malted barley on plasma cholesterol. The control fibre source was wheat bran which is high in insoluble non-starch polysaccharides.

Twenty four rats were randomly divided into four groups of six and allowed free access to food and water for 14 days. The diets were based on the AIN-76 recommendations for rats, with total dietary fibre included at 7.5% of dry weight for each of the fibre sources. Cholesterol (1%) and cholic acid (0.2%) were added to each diet.

The results show that malted barley is equally as effective as oat bran and barley in lowering plasma cholesterol in the cholesterol-fed rat.

Dietary group	Plasma total cholesterol* (mmol/l)
Wheat bran	8.14 ± 0.57^{a}
Oat bran	5.17 ± 0.34^{b}
Barley	5.55 ± 0.25^{b}
Malted barley	5.73 ± 0.45^{b}

*Mean of six observations per group ± SEM
Values with common superscripts are not significantly different $P<0.05$

All three soluble fibre sources tested in this study lowered plasma cholesterol levels when compared with wheat bran. This finding suggests very strongly that ß-glucan is not the sole hypocholesterolaemic agent.

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CSIRO Division of Human Nutrition, O'Halloran Hill, SA 5158