Association of seed colour and fibre content in *Brassica napus* canola

J. Philip RANEY, Jo-Anne RELF-ECKSTEIN and Gerhard RAKOW

Abstract:

The oil from canola seed is recognized worldwide as "healthy" oil and as a result competes favourably with other edible oils. However, the meal from canola seed does not have universal acceptance and often must be sold at a heavy discount relative of soybean meal. There are number of reasons for this including anti-nutrients, protein content, amino acid digestibility and energy level (fibre content, digestibility of carbohydrate). Converting the canola crop from black-seeded cultivars to yellow-seeded cultivars would address a number of these issues through the inherent reduction in fibre content. Yellow-seed colour is associated with low fibre content in a number of species, including *Brassica napus*. Not all fibre components are equally affected; acid detergent lignin is strongly affected and is reduced by to 1% of dry ‘meal’ or about an 80% reduction in the lightest seed colour lines. Acid detergent and neutral detergent fibres are affected less markedly and their reduction can be largely explained by the reduction in lignin content. As the presence of lignin can negatively influence the digestibility of meal protein as well as reduce the overall energy level of the meal, it is an important fibre to reduce. Near-infrared calibration equations can be developed for the prediction of fibre contents in canola seed which are accurate enough for the selection of low fibre germplasm in a breeding program.