
Optimising harvest timing by predicting dry matter content of whole-crop cereals for silage

J. M. de RUITER, S. MALEY and M. ROBSON
Crop and Food Research Limited, PB 4704, Christchurch
deruiterj@crop.cri.nz

Abstract

Timing of harvest is the single most important factor affecting the yield and quality of whole-crop cereals used for conserved feed. Changes in dry matter content (%DM) and relationships to herbage quality and maturation are presented for experiments conducted over three seasons beginning in 2001/2002. Changes in crop characteristics such as ear moisture, ear fresh weight, ear dry weight and leaf fraction were monitored to determine whether growers could use crop-based measurements in place of whole-crop % DM content to assist with

decision making close to harvest. A preliminary model defined the rate of crop maturation for a range of currently grown cultivars. Linear patterns of dry down occurred with only small variation in drying rate for the duration of grain filling. A model with specific inputs for cultivar, date of awn tip appearance (GS49), and developmental response to thermal time formed the basis of a decision support tool that enables growers and contractors to predict optimum harvest timing for whole-crop cereals.

Keywords: silage maturity, supplements, forage, herbage quality