



**DEPARTMENT
of AGRICULTURE**

Provincial Government of the Western Cape

**Assessing canola seed losses during
ripening and harvesting in the
Western Cape**

FINAL Report

**INSTITUTE FOR PLANT PRODUCTION
DIRECTORATE: TECHNOLOGY RESEARCH AND DEVELOPMENT SERVICES**

**INSTITUUT VIR PLANTPRODUKSIE
DIREKTORAAT: TEGNOLOGIE NAVORSING EN ONTWIKKELING DIENSTE**

FINAL REPORT

**ASSESSING CANOLA SEED LOSSES DURING RIPENING AND HARVESTING IN THE
WESTERN CAPE**

Report to

Protein Research Foundation

by

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Introduction

A critical step in production of canola (*Brassica napus*) is seed harvest (Thomas et al., 1991). Significant seed losses can occur due to natural shedding and crop disturbance by harvesting machinery. The farming community of the Western Cape has raised questions about the difference between the potential yield of canola (as indicated by several seasons of canola cultivar trials) and the actual (or realized) yields achieved by producers and delivered to the silo. Avoidable seed losses currently exacerbate the perception that canola production is less profitable than wheat production.

During the 2007 season the post-harvest volunteer canola present in the fields following early summer rains indicated large losses of canola either prior to or during harvest, or both. Although a great deal of work had been done to compare yields produced by different pre-harvest treatments including swathing, direct combining, growth regulators and desiccants (Ogilvy et al., 1992), there is a limited amount of information on the amounts of seed lost in harvesting (Bowerman, 1984). The loss of seed maybe attributed to natural shedding (including inclement weather conditions during ripening) and/or harvest machine losses. Yield losses vary widely. A conservative estimate of 150kg per hectare loss in seed over the estimated 38 000 ha of canola planted in 2008, could result in a loss of 5700 ton. In South Africa no assessment of these losses has been done.

The two main methods of harvesting canola in the Western Cape are swathing (favored by the Southern Cape producers) and direct combining (favored by the Swartland producers). Swathing is a safer option in adverse weather conditions, as the ripening seed is protected within a well formed swath (MacLeod, 1981, Vera et al,

2006). Price et al. (1996) reported overall losses in canola ranging from 1,7% to 4,9% for direct combining and 2,6% to 4,6% for the swathed crop. The losses due to natural shedding were 1,2% to 2% in the direct combined canola and zero to 0,9% in the swathed crop. It is important to note that these losses were observed in a crop that was harvested at the recommended time. Other reports indicate that when harvested under ideal conditions losses of 2 – 5 % are expected, compared to losses of up to 50% when canola is harvested in unfavorable conditions (MacLeod, 1981; Thomas et al., 1991; Brown et al., 1995). Losses of between 12 and 30% were recorded in a crop rotation trial in the Swartland (Hardy 2000). If canola is harvested after the recommended time, crop loss can be expected as a result of over-ripening, which causes pods to shatter easily, especially under adverse weather conditions (Sabry & Copeland, 2001). It is therefore important to assess these losses in a South African context so that a clear picture of the effect of harvesting can be obtained in order to minimize seed losses from ripening until the seed is in the silo.