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‘N AKKERBOUKUNDIGE EVALUASIE VAN CANOLA IN DIE SOMERREËNVALGEBIED

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Opsomming

Uitbreiding van canola produksie het die potensiaal om twee knelpunte in die Suid-Afrikaanse landbou te verlig. Aan die eenkant kan dit die veevoerbedryf se afhanklikheid van oliekoekinvoere verlig. Aan die anderkant kan canola as wisselbougewas, die volhoubaarheid van graanproduksie bevorder. Die doelwitte van die projek was om canola onder besproeiing in die winter en onder droë land in die somer in die somersaaigebied akkerboukundig te evalueer, ‘n riglyn vir die geskikte planttyd te bepaal en beskikbare kultivars te evalueer. Enkele canola kultivars naby Atlanta, Koedoeskop, Rustenburg, Potchefstroom, Standerton, Sandvet en Vaalharts in die winter (2001, 2002) geplant terwyl plantdatumproewe by Potchefstroom en Jan Kempdorp geplant is in 2002. Somer proewe is gedurende Oktober en November by Bethal, Brits en Bethlehem geplant. Opbrengste met die winter aanplantings behaal, het van nul tot 4 ton ha⁻¹ by Koedoeskop, 1.4 tot 3.6 ton ha⁻¹ by Rustenburg, 1.8 tot 3.7 ton ha⁻¹ by Potchefstroom en van 0.6 tot 4.2 ton ha⁻¹ by Vaalharts gevarieer. By Sandvet is die canola gedurende Augustus ernstig deur hael beskadig maar het steeds ‘n opbrengs van 2.4 ton ha⁻¹ gegee. Oor die geheel beskou het die olie-inhoud van die graan van 36 tot 49% gevarieer en die proteïen-inhoud van 18 tot 26%. Someraanplantings het misluk weens saailinge wat vrek, waarskynlik weens te hoë temperature. Die plantdatumproef dui daarop dat daar gedurende Mei tot 20 Junie geplant kan word en dat hoë temperature gedurende die blom- en graanvulstadium die opbrengs beperk. Die kritiese gemiddelde daaglikse temperatuur van die graanvulperiode waarbo die opbrengs beperk word, is ongeveer 18°C. Gedurende die 2003 en 2004-seisoene is beskikbare kultivars, vir evaluasie, is elf proewe by Brits, Lichtenburg, Potchefstroom, en Prieska geplant. ‘n Rekord koue gepaardgaande met swart ryp het op 21 Augustus 2003 voorgekom wat alle proewe ernstig beskadig het. Dit is gevolg deur maksimum temperature van meer as 30°C wat reeds aan die einde van September 2003 voorgekom het en vir sowat twee weke geduur het wat opbrengste beperk het. Gunstiger weer is gedurende 2004 ondervind alhoewel. Opbrengste van kultivars van so laag as 0.3 tot so hoog as 4.2 ton ha⁻¹ oor lokaliteite in die twee seisoene gevarieer het. Die vogvrye olie-inhoud het van 32 tot 44% en die proteïen-inhoud van 22 tot 30% gevarieer. Die grootste omgewingsrisiko vir canola is waarskynlik ongunstige temperature naamlik ryp en hitte in die peulstadium. Onkruid blyk nie ‘n ernstige probleem te wees nie terwyl insekte met bestaande middels suksesvol bekamp kan word. Sclerotinia-stamvrot blyk die enigste siekte te

wees wat 'n risiko in hou, maar kan waarskynlik met gesonde wisselbou voorkom word.

Abstract

Increased production of canola has the potential to alleviate two bottle-necks in South African agriculture. It can relieve the dependence of the animal feed industry from imported protein on the one hand and it may enhance the sustainability of cropping systems on the other hand. The aims of this project were to evaluate canola as an irrigation winter crop, as a summer crop, to determine the suitable planting period and evaluate available cultivars. For the winter crop evaluation (2001 and 2002), a number of cultivars were planted at Atlana, Koedoeskop, Rustenburg, Potchefstroom, Standerton, Sandvet and Vaalharts. For the summer crop evaluation, canola was planted during October and November at Bethal, Brits and at Bethlehem. Planting date trials were planted at Potchefstroom and Vaalharts. Grain yield for the winter planted crops varied from zero to 4 ton ha⁻¹ at Koedoeskop, 1.4 to 3.6 ton ha⁻¹ at Rustenburg, 1.8 to 3.7 ton ha⁻¹ and from 0.6 to 4.2 ton ha⁻¹ at Vaalharts. Although hail damaged the canola at Sandvet during August, it recovered and yielded 2.4 ton ha⁻¹. Seed oil content varied from 36 to 49% and protein content from 18 to 26%. The summer trial failed due to seedling death probably due to high temperatures. For planting, May till 20th June was found the most suitable period for planting. Later dates will result in high unfavourable temperatures during the grain filling period. A mean daily temperature of 18°C during the grain filling period appears to be the threshold where grain yield is negatively affected. During the 2003 and 2004 seasons, all available cultivars were planted at seven localities for evaluation. Record minimum temperatures with severe frost were recorded on the 21st of August 2003. This was followed by daily maximums of more than 30°C at the end of September 2003 and which persisted for two weeks. These extreme temperatures limited yields. Temperatures were more favourable in 2004. Yields of cultivars varied from 0.3 to 4.2 tons ha⁻¹ over localities in the two seasons. The moisture free seed oil content varied between 32 and 44% and the protein content between 22 and 30%. The biggest source of risk is unfavourable temperatures (both frost and heat) during the pod stage. Weeds appear not to be a serious problem and insects can be controlled with insecticides. Sclerotinia-stemrot appears to be the only disease risk but can most likely be avoided by applying healthy crop rotation.