NSW GOVERNMENT
Department of Primary Industries

Quality of Australian canola 2014–15

NSW DPI MANAGEMENT GUIDE

www.dpi.nsw.gov.au

AOF
Australian Oilseeds Federation

jn 13250 03–2015

Quality of Australian Canola 2014

D.E. Seberry, D. McCaffery & T.M. Kingham
Volume No 21
ISSN 1322-9397

Index

Figures

Tables

Acknowledgments

The Australian Oilseeds Federation would like to thank Graincorp Operations Limited and Viterra Ltd for providing the canola samples from the 2014 harvest. The Australian Oilseeds Federation would also like to thank CBH Group for providing the Western Australian quality data. NSW DPI would also like to thank Andrew Ware (SARDI, Port Lincoln SA), Trent Potter (Yeruga Crop Research, Naracoorte SA), Dale Grey (DETJT&R, Bendigo VIC) and GIWA Crop Report (Perth WA) for help in compiling the Weather Production Report. NSW DPI would also like to thank all the staff of the Australian Oils Research Laboratory for their assistance in the analysis of these samples and compilation of the book, their hard work is greatly appreciated.

Introduction

Sample Analysis

Canola samples representing the 2014 harvest were received from the bulk handlers in New South Wales, South Australia and Victoria. These samples are representative of the seed collected at each of their receival points and have been taken to cumulatively represent the Australian harvest. The NSW DPI Australian Oils Research Laboratory has no control over the collection of the samples and all data given is based on the analysis of the samples provided.

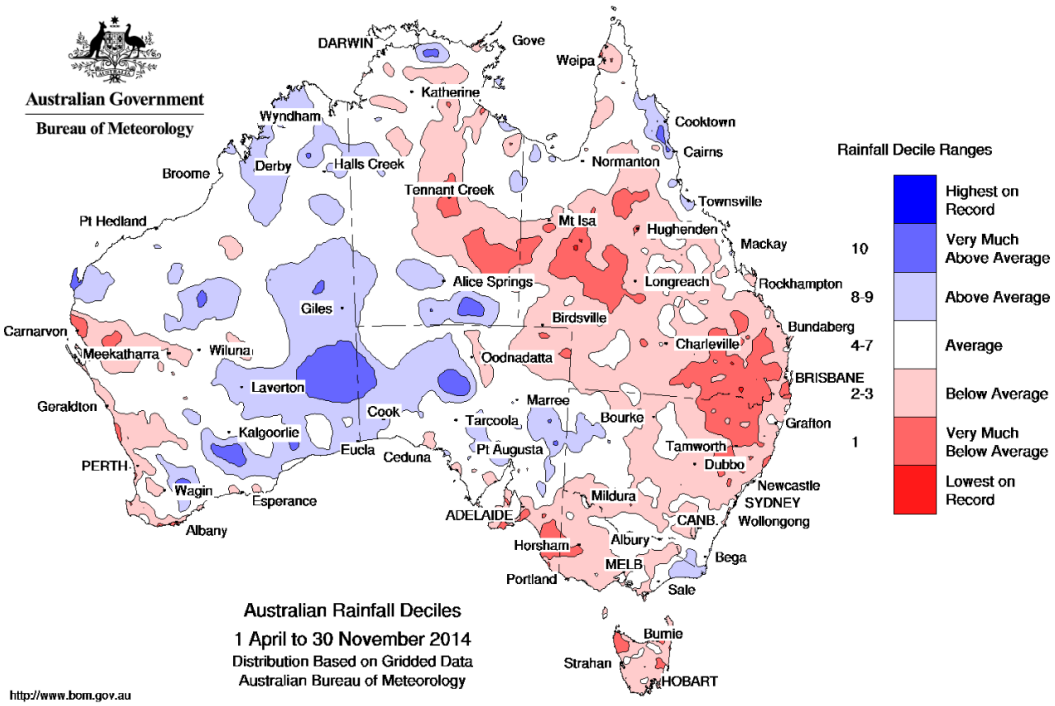
Samples were not available from Western Australia, so CBH Group provided average oil and protein contents for each grade at each Port.

Each sample was analysed for oil, protein and glucosinolate concentrations; fatty acid profiles and volumetric grain weights according to the standard AOF methods outlined in the methods section at the back of this book. The NSW DPI Australian Oils Research Laboratory in Wagga Wagga performed all analyses on the samples. Oil and glucosinolate concentrations are reported at 6% moisture in whole seed and protein is reported in oil-free meal at 10% moisture.

Weather Production Review

The Season

The season was characterised by the following notable events; early sowing across most of Australia following early season rainfall; generally above average temperatures through most of the winter growing period, hottest August on record in parts of Western Australia, severe frosts in the eastern states in the first half of August, and below average rainfall from the end of July through to harvest across most of southern Australia. Figure 1 shows growing season rainfall was generally average to below average and well below average in northern NSW, the Wimmera and the Lower South East of SA. In addition, South Australia, Victoria and NSW experienced an outbreak of the *Beet western yellows virus* (BWYV), a result of the unusual seasonal conditions that provided a set of circumstances for a population explosion of the green peach aphid, the primary vector for the virus.



Source: Bureau of Meteorology

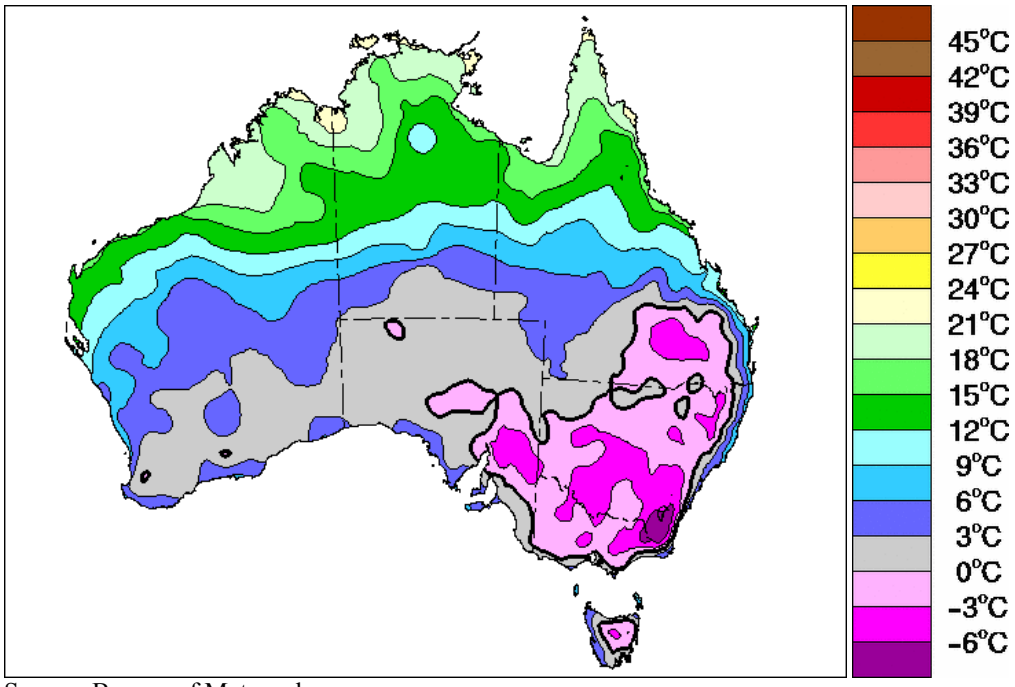
Figure 1: Australian rainfall deciles 1 April to 30 November 2014.

New South Wales

An early break across central and southern NSW allowed the majority of the canola crop to be sown before the end of April. Sowing into good soil moisture resulted in excellent establishment in most areas. The north and northwest of the state missed out on these early rains so little area was planted in the north, with the exception of the Liverpool Plains. No canola was planted west of the Newell highway in the north for the second consecutive season.

Rainfall was below average in May but average to above average for June. Above average temperatures through May and early-mid June advanced crop development earlier than normal. *Beet western yellow virus* was identified in late June, within a week of detection in SA and the Mallee of Victoria. Earliest reports of crop damage were from the Riverina in southern NSW but later crop sampling showed the virus to be widespread, but at lower rates of infection. Many early developing crops commenced flowering in late June and were in full flower by the end of July. Rainfall was highly variable in July and generally below average for the remainder of the season.

Severe frosts were experienced in the first half of August across much of southern NSW, the North East and eastern Mallee of Victoria and across the Mid North of SA. The area affected by the most severe frost is shown in Figure 2. Yield losses were greatest in western areas of the South West Slopes, northern Riverina and south western areas of the Central West Slopes and Plains, where early developing crops did not have time to compensate and were growing on declining soil moisture in early spring.



Source: Bureau of Meteorology

Figure 2: Minimum temperature map 3rd August 2014

Crop development was even earlier in 2014 than it was in 2013, which resulted in earlier Sclerotinia infection and hence the need for control in disease prone areas such as the south east Riverina. From August onwards conditions were dry with below average rainfall, reducing further Sclerotinia infection.

Harvest was much earlier than normal as a result of the early sowing, above average temperatures through winter, followed by the dry spring. Oil contents were surprisingly good considering the seasonal conditions the crop experienced.

Final estimated production for NSW was 835,000 t from an estimated 575,000 ha, for an average yield of 1.45 t/ha.

Victoria

The South West, Wimmera and south-west Mallee started the season with a dry soil profile, which discouraged some planting in the Wimmera. The northern and eastern Mallee, North Central and North East areas had a wet profile at planting due to February storms and excellent mid-April rains which encouraged some extra planting in the Mallee.

The seasonal break was excellent across the whole state with all crops being planted on time in the last week of April and first week of May. Parts of the North East experienced minor to severe waterlogging. Excellent growth occurred during May-July but after a dry July in the northern areas and a dry August across the whole state, crops started to show signs of moisture stress on heavier soil types in the southern Mallee and northern Wimmera. September was the critical month where the North Central, North East and eastern Mallee crops received sufficient rain, but the southwest Mallee and northern Wimmera crops suffered greatly due to a lack of rain. In the South West region

full soil profiles in winter enabled crops to survive through the tight spring except the Lake Bolac to Ararat region, where the rainfall was lower and crops struggled to reach potential.

Unlike 2013 the conditions at petal fall were not conducive to Sclerotinia and very little was observed in the North East in 2014.

The whole season was warmer than average from planting to harvest with much warmer temperatures experienced through August-October. Warmer temperatures in May, particularly in the north-west, led to rapid growth and early ground cover. October was 3-5^{o}C warmer over most of the canola growing regions.

The summer storms caused a green bridge and the early warmth resulted in large flights and rapid generations of Green Peach Aphid. In late July-August the symptoms of *Beet western yellows virus* started to appear in Mallee and Wimmera crops. There was a high rate of spraying of aphids, most with little effect. A few crops suffered major yield loss but the majority recovered better than expected.

Harvest commenced early and finished ahead of usual due to a dry windrowing and harvest period without stoppages. The majority of crop was harvested by the end of November. Yields and oils were excellent in the North East and North Central districts and generally below expectations in other areas, however were consistent with the rainfall received. Crop failure occurred in some parts of the south west Mallee and northern Wimmera.

Final estimated production for Victoria was 647,000 t from an estimated area of 483,000 ha, for an average yield of 1.34 t/ha.

South Australia

A similar area of canola was sown in South Australia in 2014 as had been grown in 2013. Well above average rainfall fell over most of South Australia between January and April, with the exception of the Lower South East district. This enabled planting across most of the state to occur from the middle of April and concluded in the Lower South East in mid-May.

High levels of green peach aphids, thought to have multiplied on host plants over summer, infested emerging canola crops and then transmitted *Beet western yellows virus*. The Lower North had the most significant damage to canola crops, with large areas in the Mid North and central Eyre Peninsula also affected. The lack of summer rain across the South East helped keep levels of the virus to low levels.

Warm and dry conditions in spring led to a rapid increase of Diamondback moth resulting in many growers needing to control this pest for the first time.

Blackleg severity in South Australia was higher than the national average in 2014, but not thought to have caused yield loss in most regions. No other diseases were noted to be present at yield damaging levels in 2014.

Rainfall was generally average to well above average throughout May, June and July but well below average through August, September and October. Frost damage occurred in most canola growing districts. Overall yields were below expectations.

Final estimated production for South Australia was 314,000 t from an estimated area of 302,000 ha, for an average yield of 1.04 t/ha.

Western Australia

Growers in Western Australia sowed a record area of 1.247 million hectares in 2014, surpassing the 2013 record of 1.177 million hectares. The autumn break arrived in the second half of April in the north and early May in the south-east around Esperance. Dry sowing had already commenced in early-mid April in some districts allowing the majority of the crop to be sown on time. Above average temperatures and good rainfall through May in most districts promoted growth of the crop ahead of normal development times. June rainfall was below average to well below average, especially away from the coast. July rainfall was below average in the northern Geraldton port zone. Crops lost yield potential in many inland areas through August when record high temperatures coincided with dry conditions, causing flower abortion and a gap in pods on the main stem. Rainfall was average to below average through September and October. Windrowing and harvest commenced much earlier than usual due to warm winter temperatures that advanced crop growth.

Yields were below average to well below average in the northern and eastern Geraldton port zone and less than anticipated in the central and eastern Kwinana port zone and inland Esperance port zone. Despite this, oil contents were still very good overall, averaging 45-48% where crops were not drought affected, and 40-44% and lower in much drier inland regions.

Sclerotinia was again widespread and favoured by an early sowing and rapid plant development which placed flowering at a time when conditions were favourable. Many crops were sprayed to control the disease in central and coastal crops.

Final estimated production for Western Australia was 1.635 million tonnes from an estimated 1.247 million ha for an average yield of 1.31 t/ha.

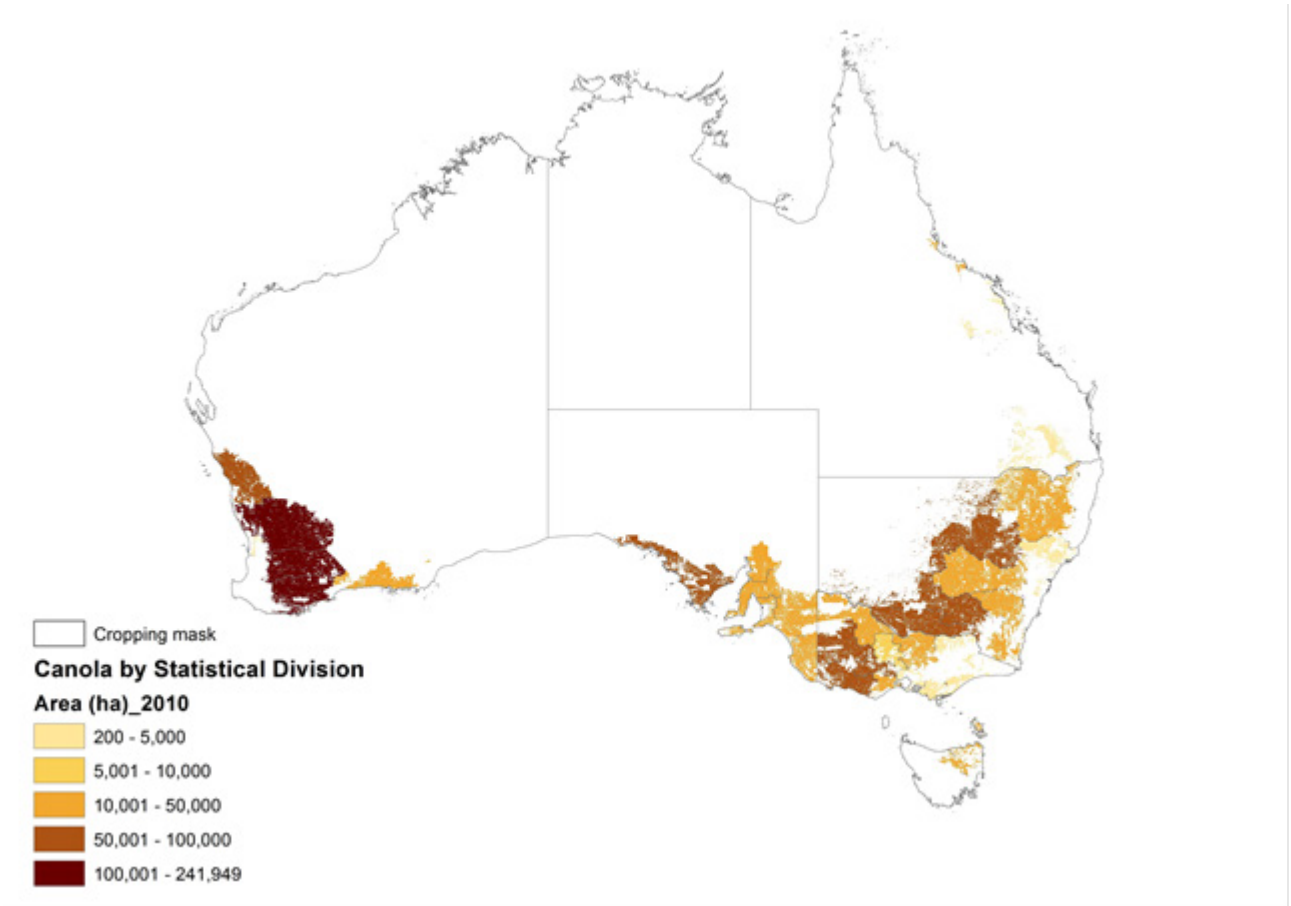


Figure 3: Areas of canola production in Australia
Published with approval of Bureau of Rural Sciences

Yield

Australia produced in excess of 3 million tonnes for the third consecutive year in 2014, following a harvest of 3.9 million tonnes in 2013 and 4.3 million tonnes in 2012.

Area sown and production in each state is shown in Table 1. Final production of 3.431 million tonnes is the third highest on record, however yield per hectare was the lowest of the past three years, due primarily to the below average rainfall in the second half of the season.

The Australian average yield was 1.32 t/ha, this was a 0.32 t/ha decrease from the 2013 harvest. Yield ranged from 1.04 t/ha in South Australia to 1.45 t/ha in New South Wales.

Table 1: Canola production in Australia by state 2014

State	Production (kilotonnes)	Area Harvested (kilohectares)	Average Yield (tonnes/hectare)
New South Wales	835	575	1.45
Victoria	647	483	1.34
South Australia	314	302	1.04
Western Australia	1635	1247	1.31
Australia	3431	2607	1.32

Source: AOF

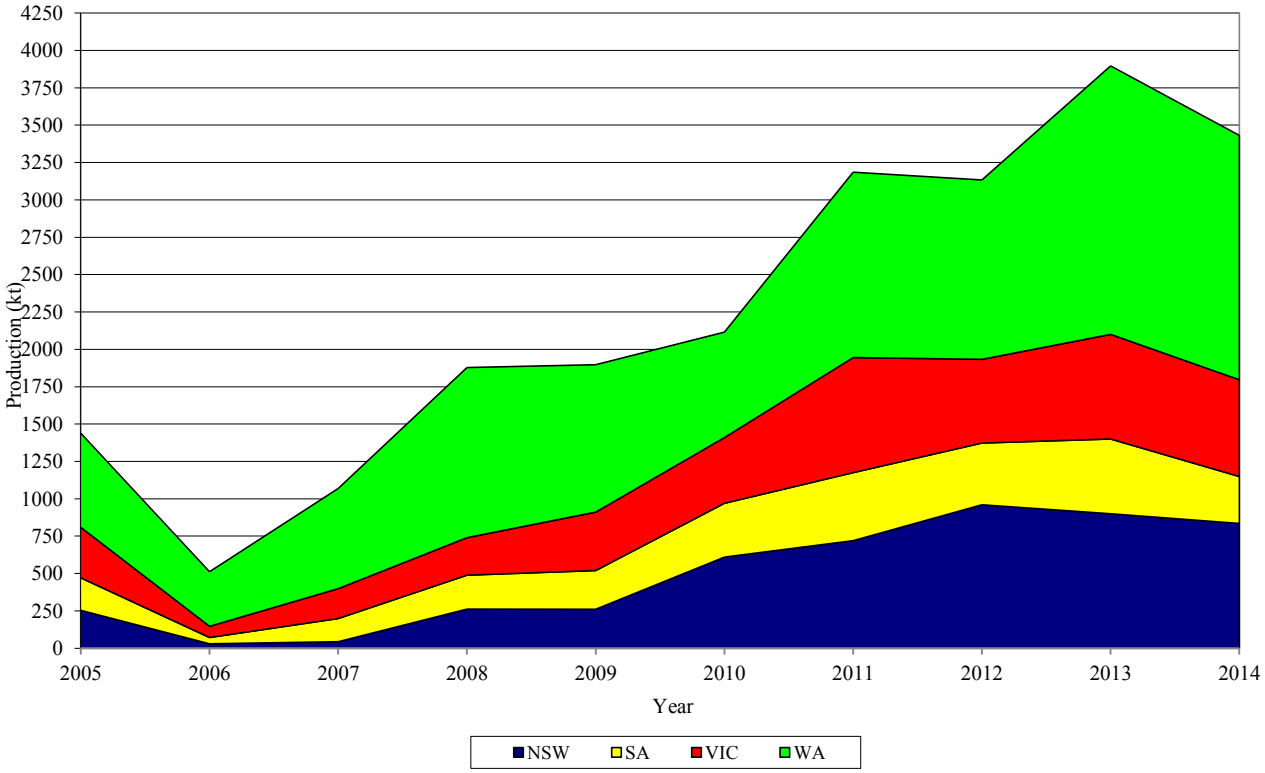


Figure 4: Canola Production in Australia 2005 – 2014

Australian Quality Parameter Summary

The mean regional and state values for all analyses for New South Wales, South Australia and Victoria were calculated on the basis of the tonnage each Site and Grade represents.
Samples were not available from Western Australia so the Port Zone averages are reported as supplied by CBH.
The Australian mean values were calculated using the sum of the tonnages for each Site and Grade in New South Wales, South Australia and Victoria and the total tonnage for Western Australia.
However, due to tonnages being confidential information, no individual site tonnages can be reported.

Table 2: Average quality of Australian canola 2014

Quality Parameter	Australian Mean
Oil content, % in whole seed @ 6% moisture	44.1
Protein content, % in oil-free meal @ 10% moisture	38.8
Glucosinolates, µmoles/g in whole seed @ 6% moisture	6
Volumetric grain weights, lbs/b	54.2
kg/hL	67.5
Oleic acid concentration (C18:1), % in oil	63.7
Linoleic acid concentration (C18:2), % in oil	17.9
Linolenic acid concentration (C18:3), % in oil	9.3
Erucic acid concentration (C22:1), % in oil	< 0.1
Saturated fatty acid concentration, % in oil	7.5
Iodine Value	111.3

Oil Content

The average oil content for the 2014 harvest was 44.1%. This was the second highest on record, with a decrease of 1.6% from the record 2013 harvest. Oil content ranged from a low of 37.2% for the Esperance Port Zone (CAG2 grade) in Western Australia to a high of 46.5% for the Albany and Kwinana Port Zones (CAN2 grades) in Western Australia.

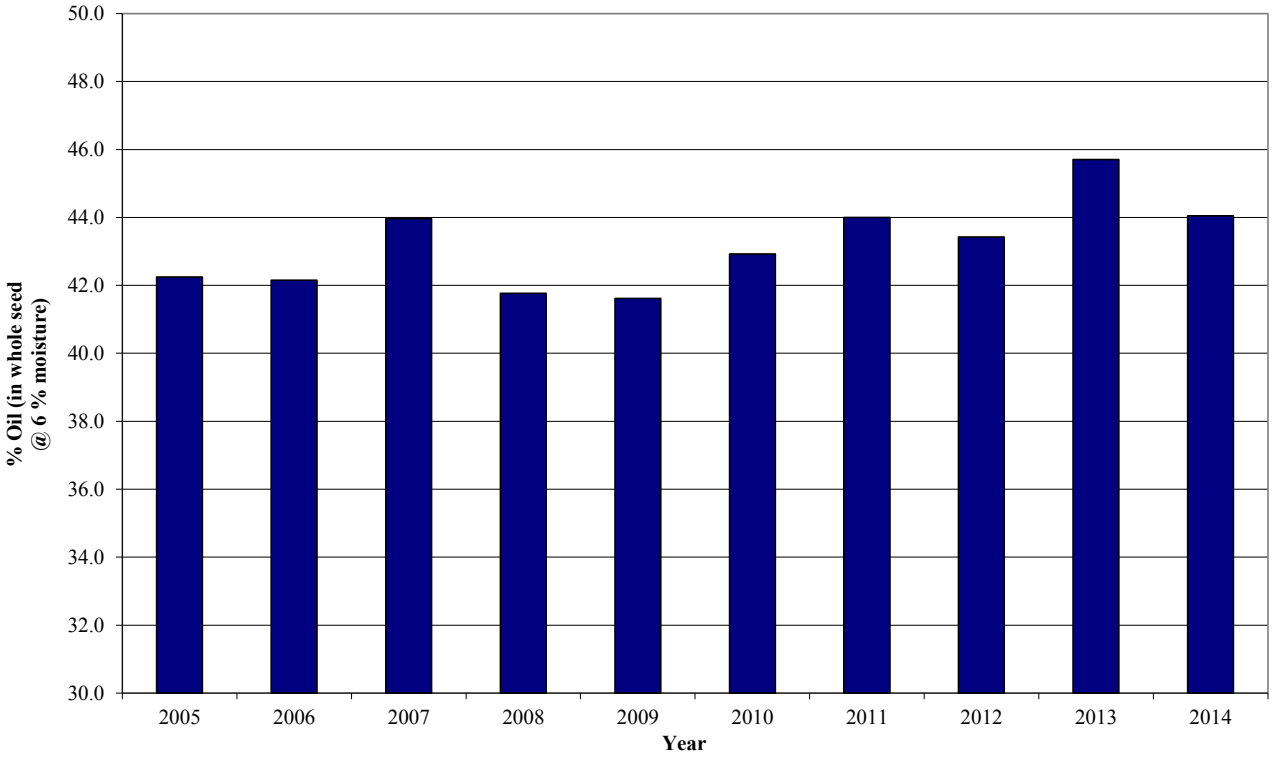


Figure 5: Average Australian oil content 2005 - 2014

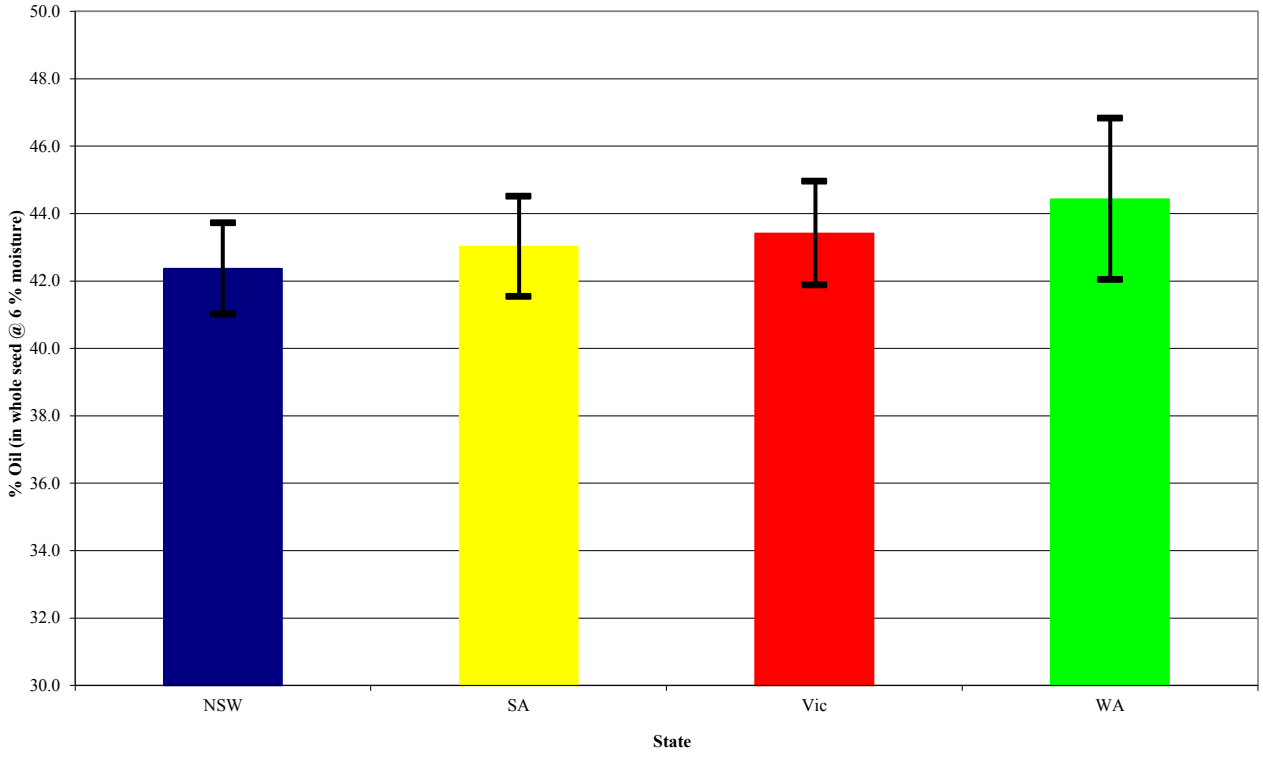


Figure 6: Average oil content by state 2014
Bars show plus or minus one standard deviation for each state.

Protein Content

The average protein content for the 2014 harvest was 38.8% in oil free meal. This was an increase of 1.5% from the 2013 harvest. Protein content ranged from 36.6% in the Albany Port Zone (CAG2 grade) to 43.2% at Murtoa Sub in Victoria.

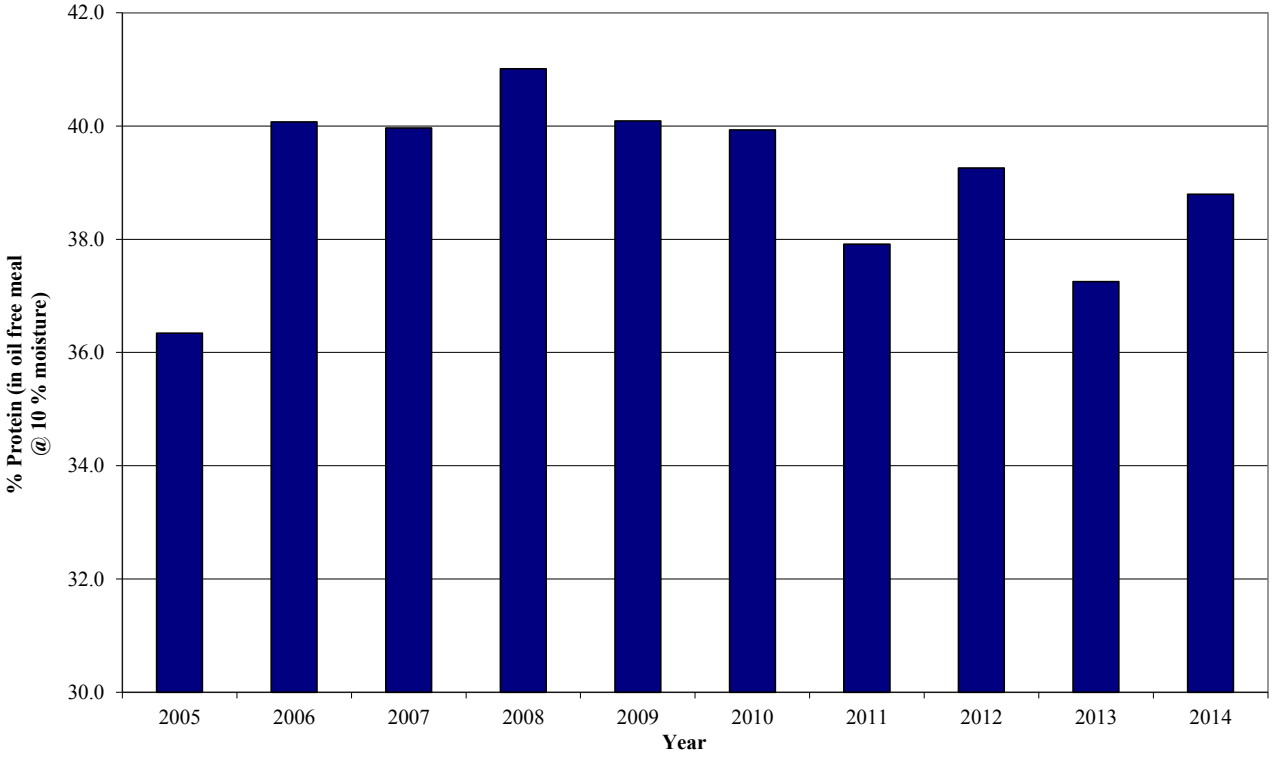


Figure 7: Average Australian protein content 2005 - 2014

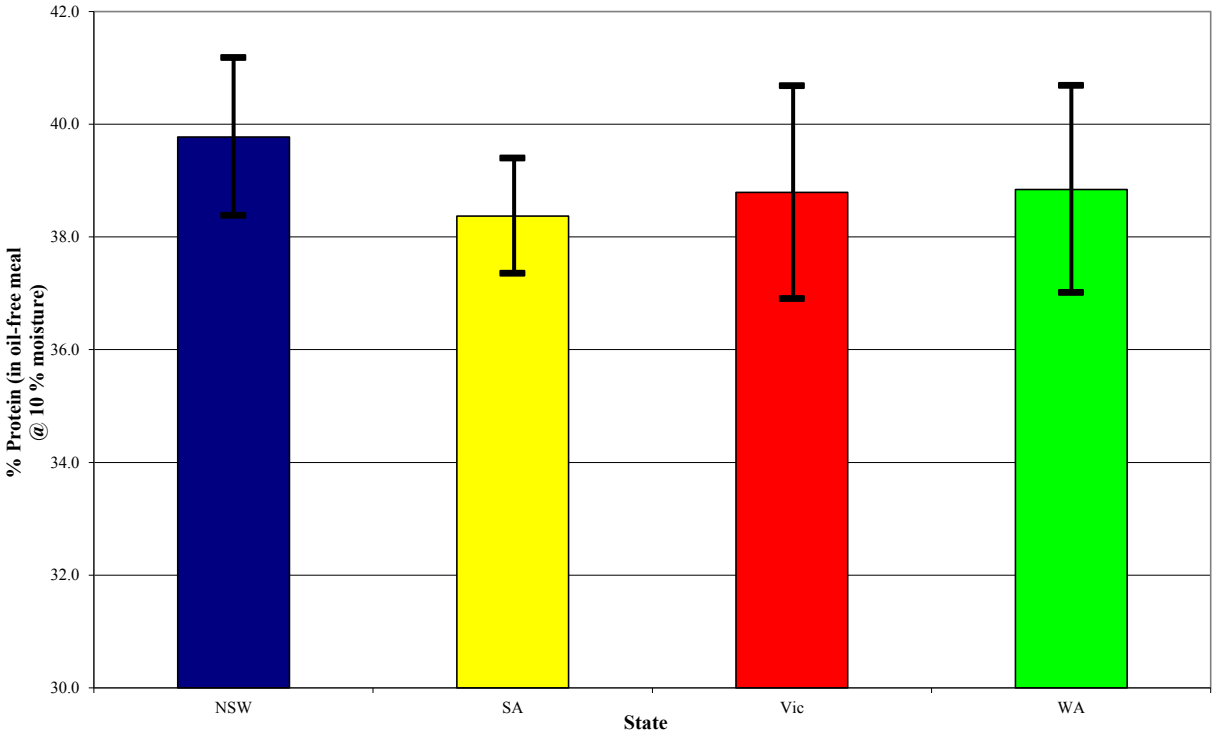


Figure 8: Average protein content by state 2014

Bars show plus or minus one standard deviation for each state.

Glucosinolate Concentration

The average glucosinolate content for the 2014 harvest was 6 µmoles/g which is the same as the 2013 harvest. Glucosinolate content ranged from 3 µmoles/g at Parkes (NSW), Wirrinya (NSW) and Westmere (Victoria) to 12 µmoles/g at Narwonah in New South Wales.

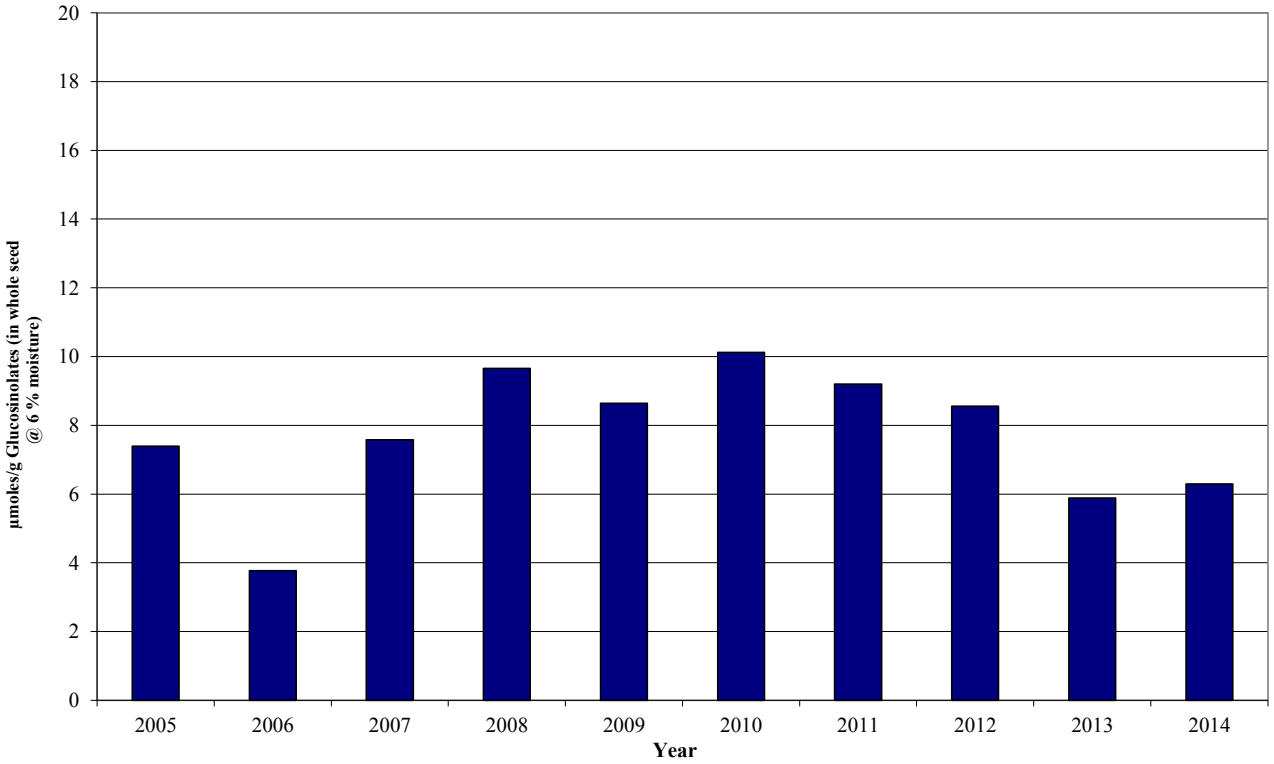


Figure 9: Average Australian glucosinolate content 2005 – 2014

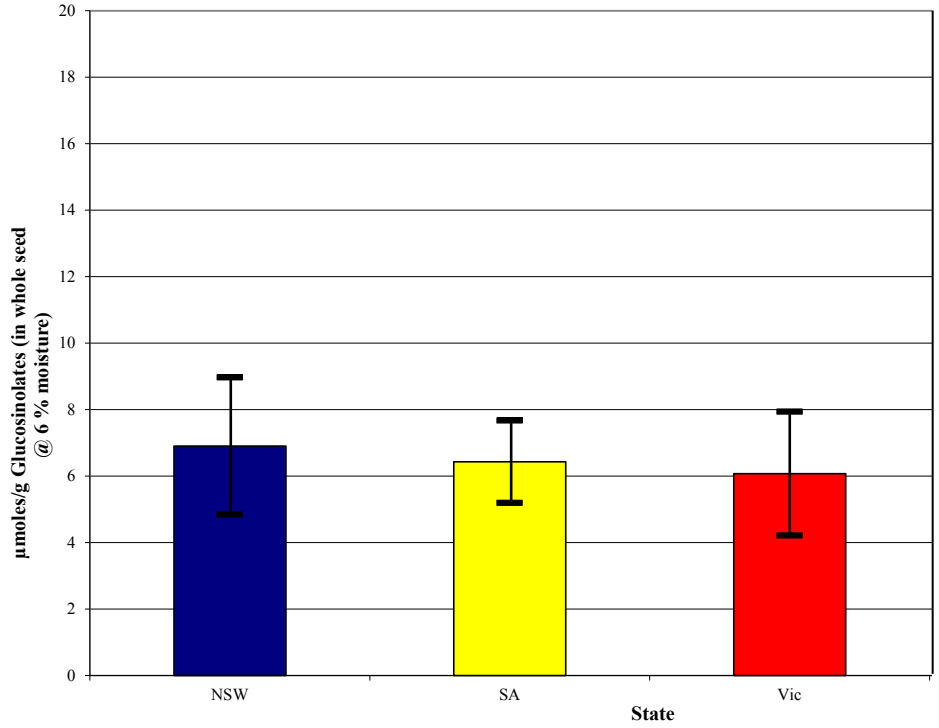


Figure 10: Average glucosinolate content by state 2014
Bars show plus or minus one standard deviation for each state.

Fatty Acid Composition

Oleic Acid

The average oleic acid (C18:1) concentration in the oil produced from the 2014 harvest was 63.7%. This was a 0.9% increase from the 2013 harvest and the highest since the inception of this publication. Oleic acid concentration ranged from 60.1% at Rudall in South Australia to 71.0% at Nevertire in New South Wales.

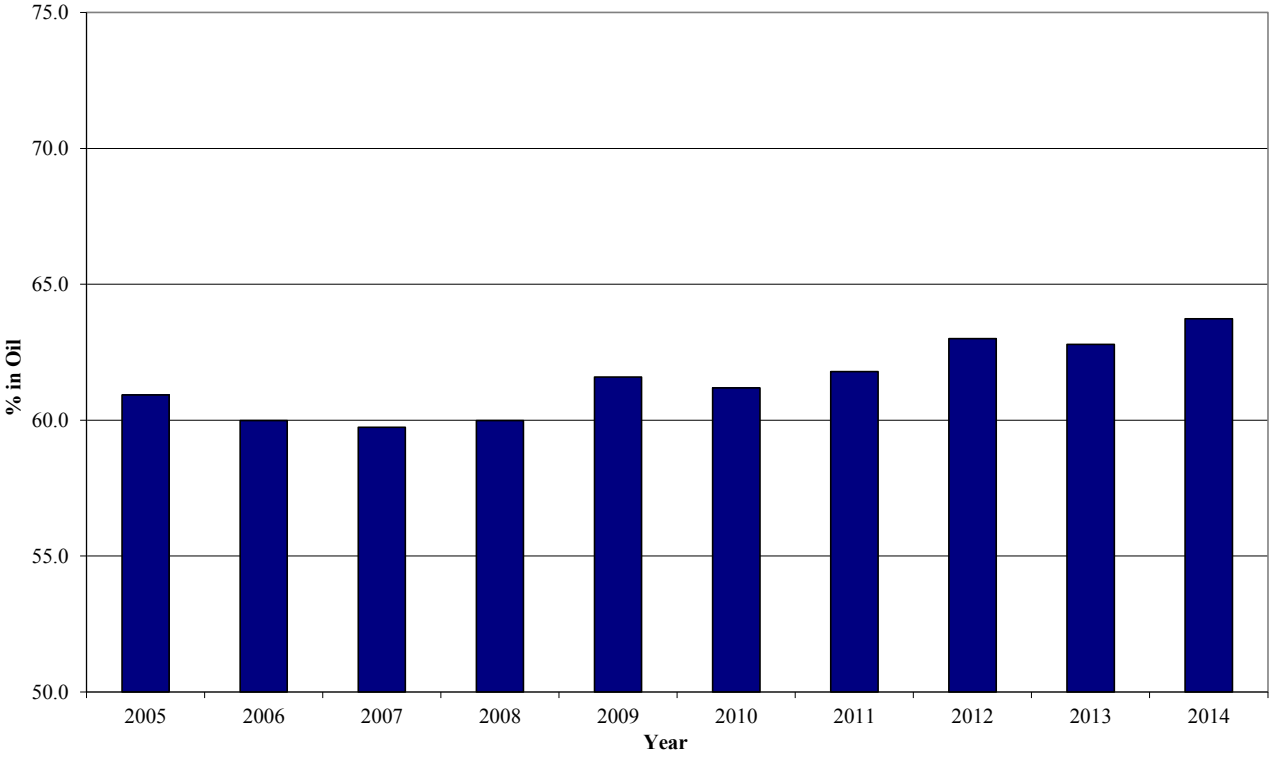


Figure 11: Average Australian oleic acid concentration in canola oil 2005 – 2014

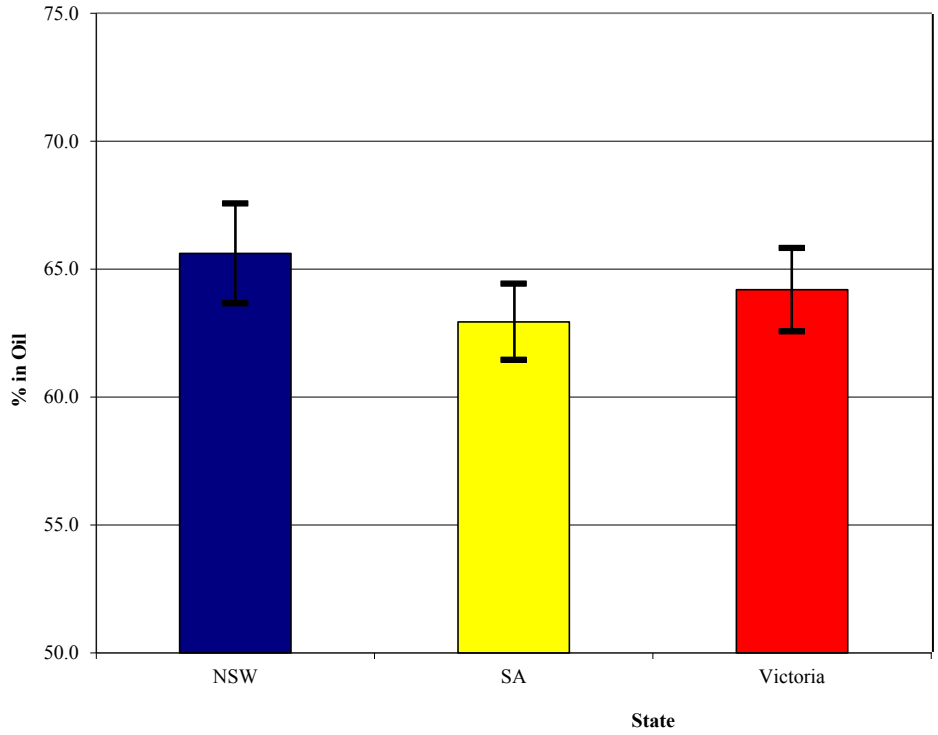


Figure 12: Average oleic acid concentration by state 2014
Bars show plus or minus one standard deviation for each state.

Linoleic Acid

The average linoleic acid (C18:2) concentration in oil produced from the 2014 harvest was 17.9%. This is 0.3% lower than the 2013 harvest and the lowest in the twenty year history of this publication. The concentration ranged from 13.8% at Milvale in New South Wales to 21.4% at Rudall in South Australia.

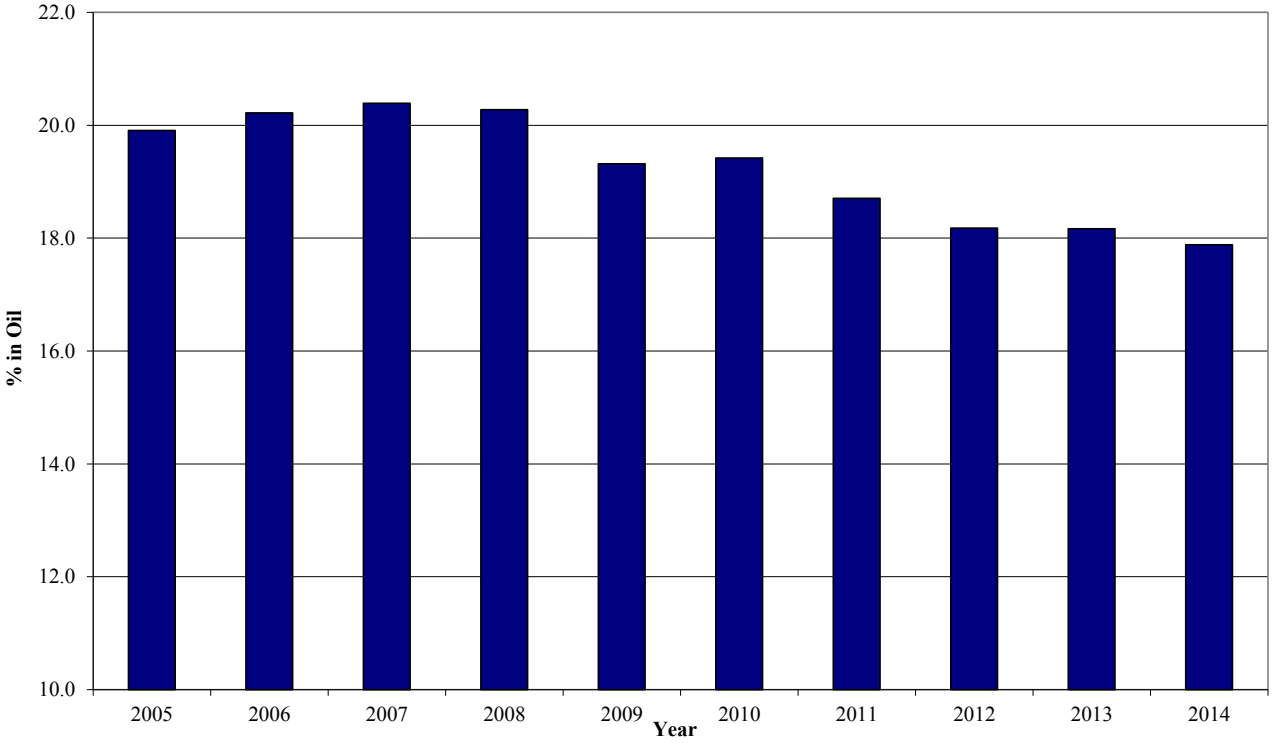


Figure 13: Average Australian linoleic acid concentration in canola oil 2005 – 2014

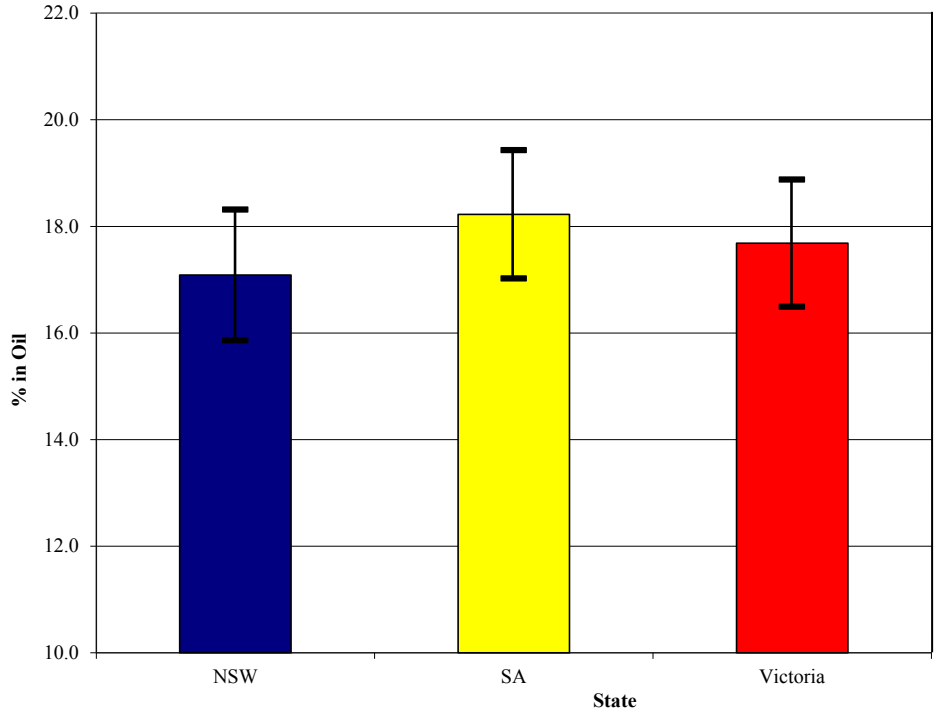


Figure 14: Average linoleic acid concentration by state 2014
Bars show plus or minus one standard deviation for each state.

Linolenic Acid

The linolenic acid (C18:3) concentration for 2014 was 9.3% this was 0.9% lower than the 2013 harvest and the lowest since 2003. Linolenic acid concentrations ranged from 2.9% at Mungeribar in New South Wales to 10.5% at Naracoorte in South Australia (considered a part of GrainCorp's Victorian operation).

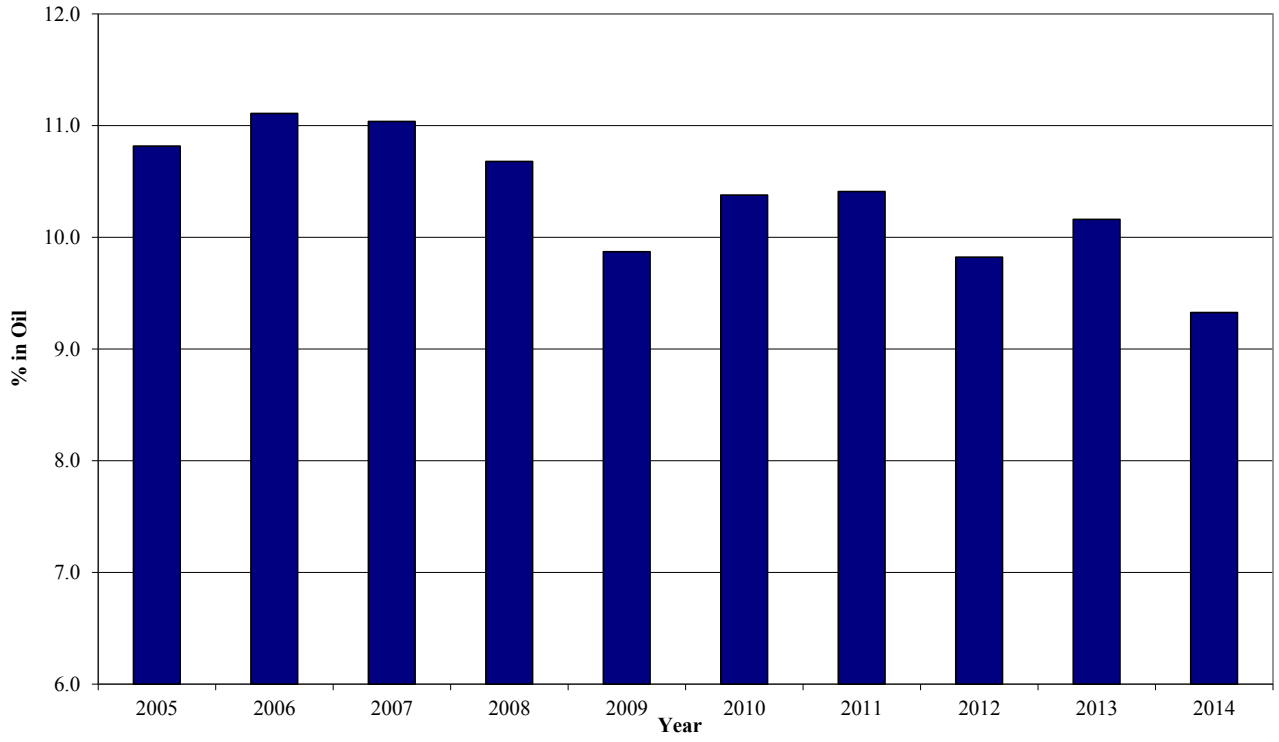


Figure 15: Average Australian linolenic concentration in canola oil 2005 – 2014

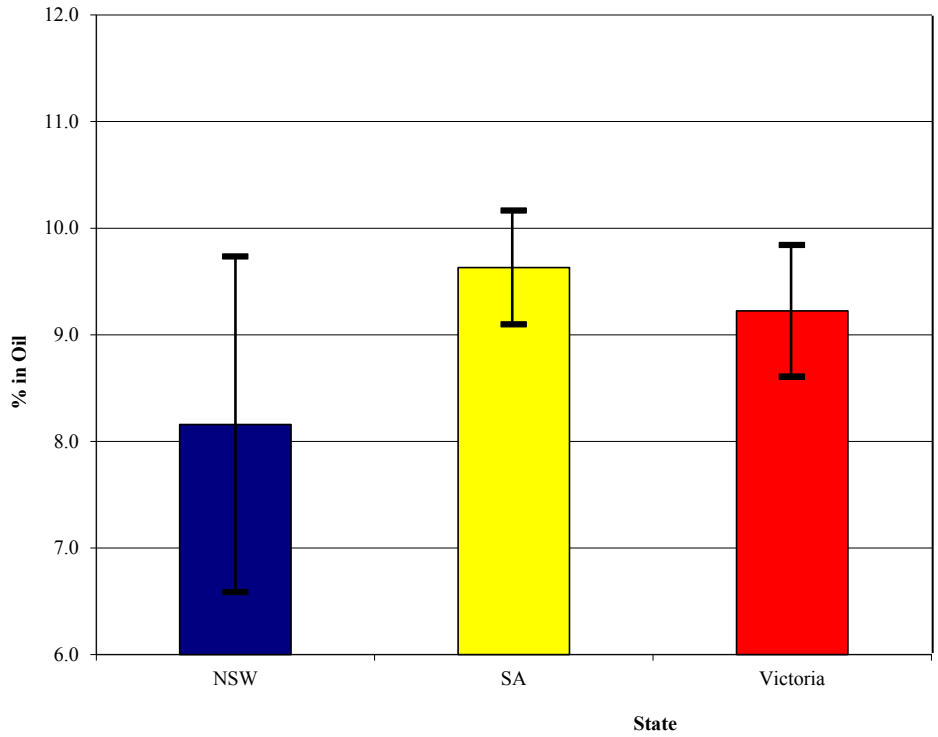


Figure 16: Average linolenic acid concentration by state 2014
Bars show plus or minus one standard deviation for each state.

Saturated Fatty Acid

The average saturated fatty acid concentration for the 2014 harvest was 7.5%. This was 0.2% higher than the 2013 harvest and the highest since 2009. Saturated fatty acid concentration ranged from 7.2% at thirteen sites across New South Wales and Victoria to 8.0% at three sites across South Australia and Victoria.

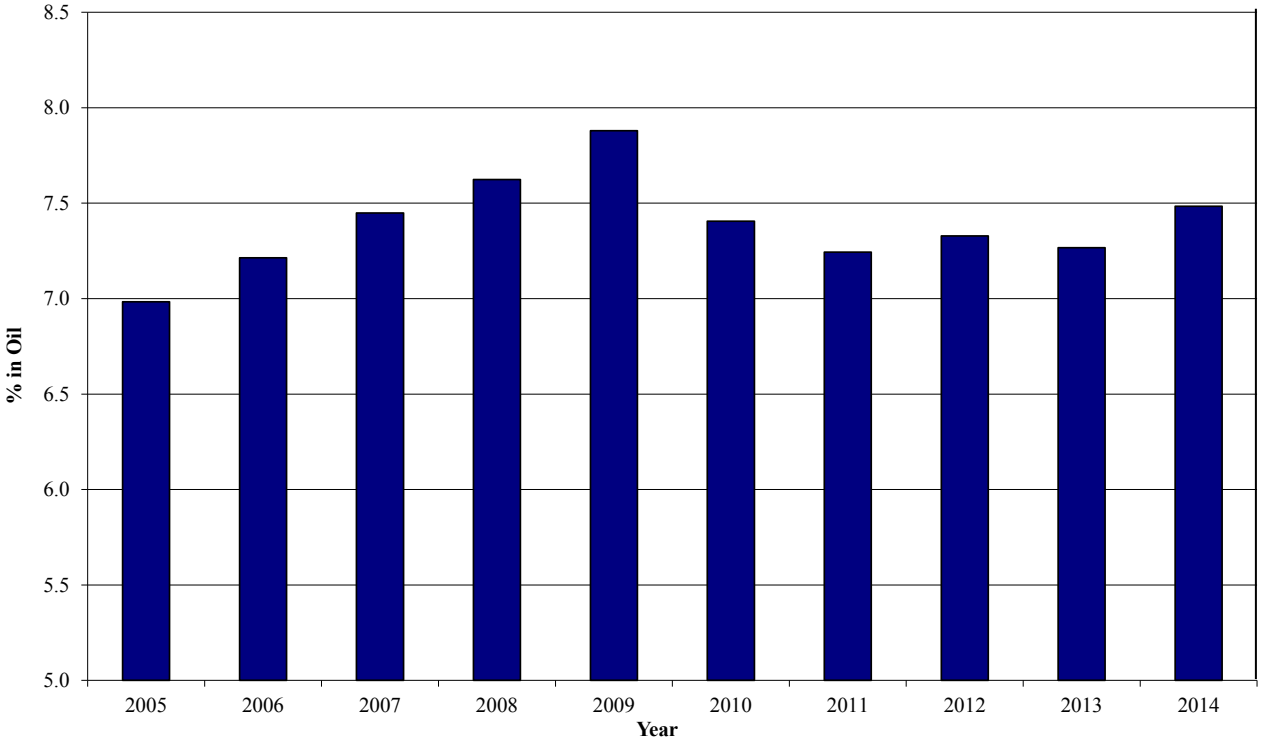


Figure 17: Average Australian saturated fatty acid concentration in canola oil 2005 – 2014

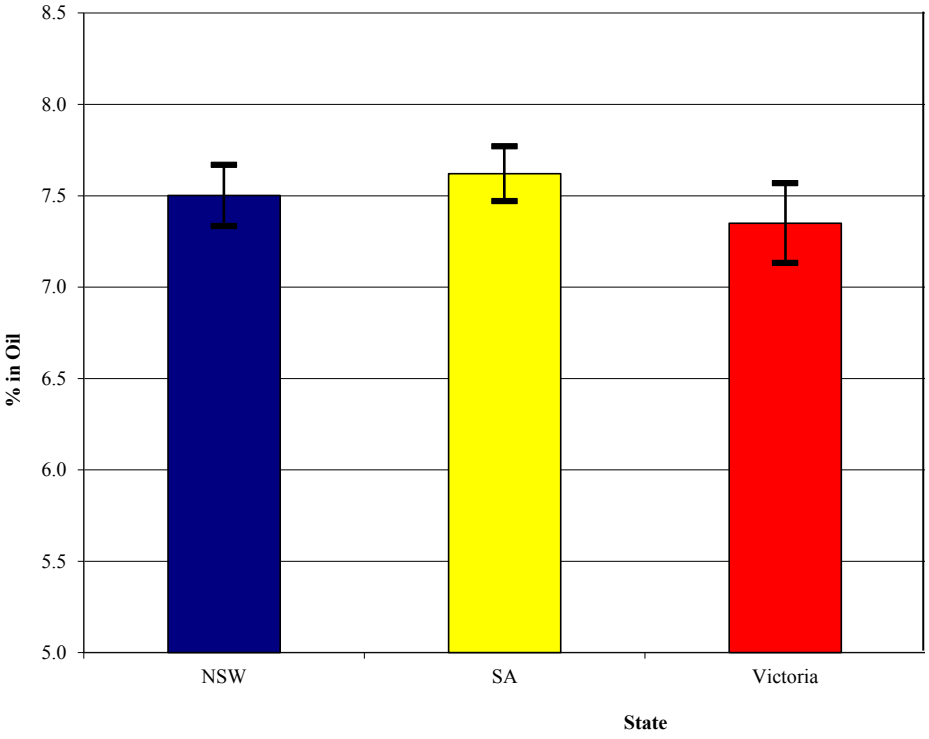


Figure 18: Average saturated fatty acid concentration by state 2014
Bars show plus or minus one standard deviation for each state.

Iodine Value

The average iodine value for the 2014 harvest was 111.3. This is 1.8 lower than the 2013 harvest and the lowest iodine value recorded during the life of this publication. Iodine value ranged from 98.9 at Nevertire in New South Wales to 114.6 at Ouyen in Victoria.

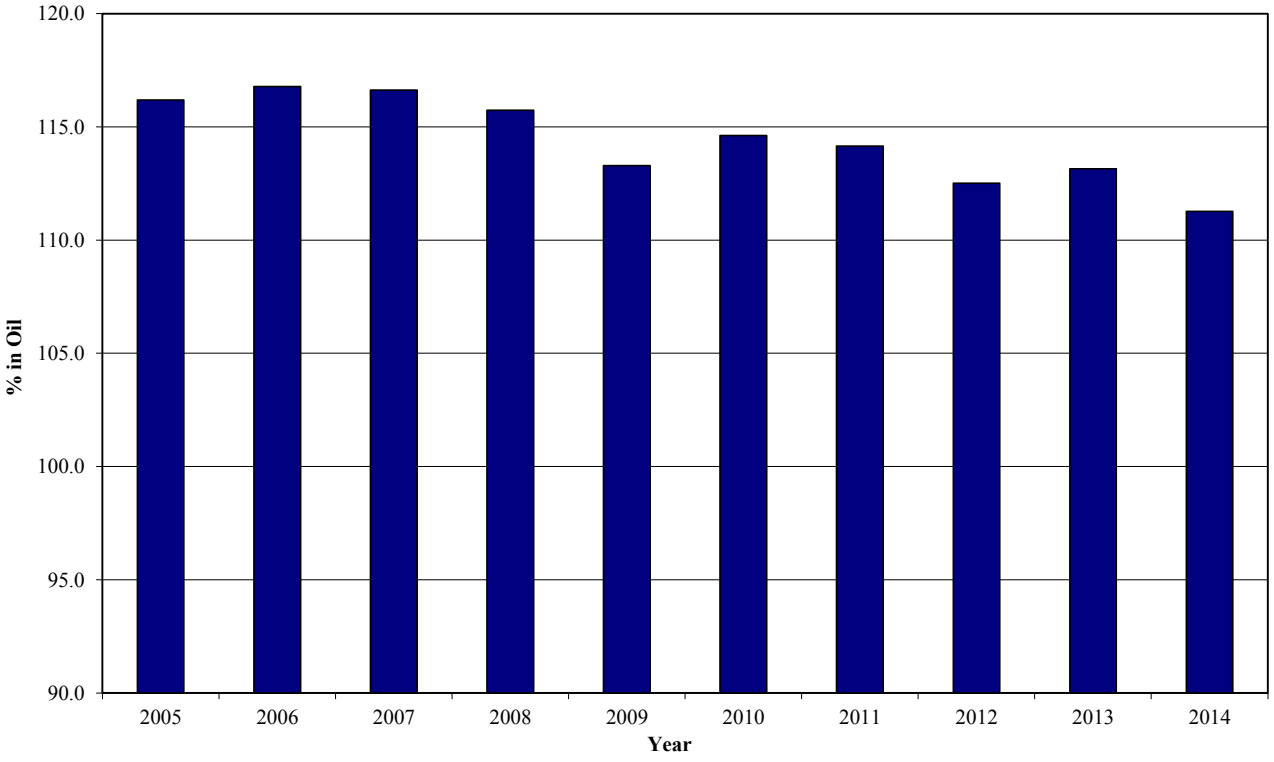


Figure 19: Average Australian iodine value in canola oil 2005 – 2014

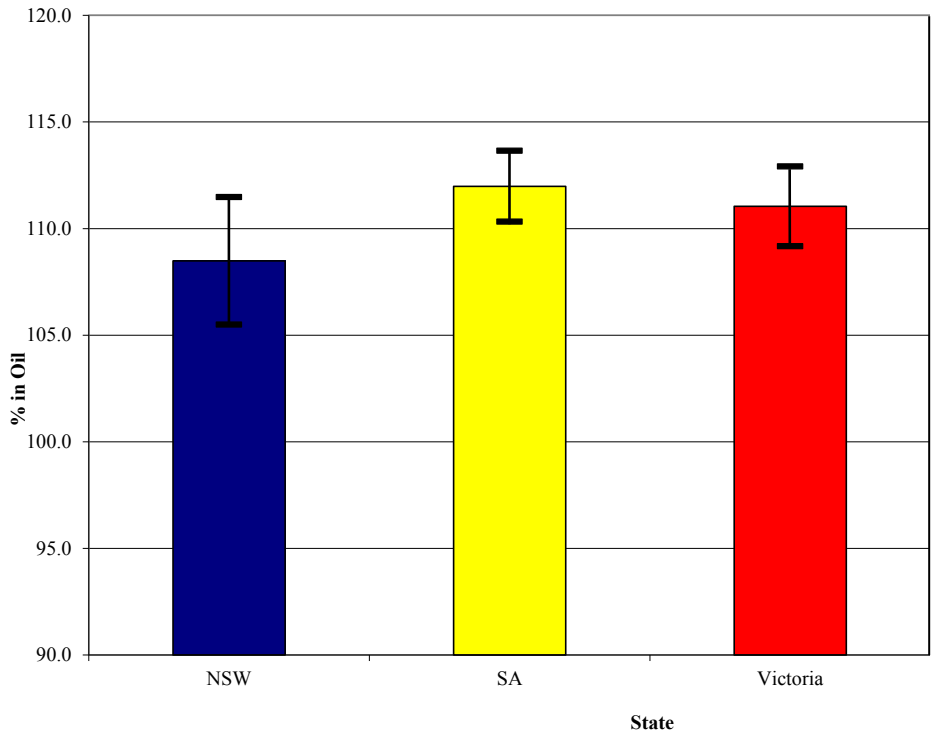


Figure 20: Average iodine value by state 2014
Bars show plus or minus one standard deviation for each state.

Quality Data by State

Table 3: Quality Data – New South Wales

Region/ Zone/ Receival Site	Grade	[1] Oil	[2] Protein	[3] Glucosinolates µmoles/g	[4] Grain Weight lbs/b	kg/hL
Northern NSW						
Moree South						
Moree-Haddads	CAN	41.2	40.6	7	53.6	66.8
Werris Creek						
Premer	CAN	41.2	41.3	7	54.2	67.5
Quirindi	CAN	41.2	42.5	8	54.1	67.4
Northern Mean		**41.2**	**41.4**	**7**	**53.9**	**67.2**
Central NSW						
Dubbo North						
Curban	CAN	43.1	39.8	5	54.0	67.3
Dubbo West						
Mungeribar	CAN	42.7	39.9	7	53.8	67.0
Mungeribar	1011	40.4	39.6	11	53.8	67.0
Narwonah	CAN	41.9	39.9	9	54.1	67.4
Narwonah	1011	39.0	39.6	12	53.9	67.1
Nevertire	CAN	40.9	40.9	8	54.3	67.6
Nyngan	CAN	43.6	37.4	7	53.8	67.0
Parkes North						
Bogan Gate	CAN	44.1	37.2	6	53.7	66.9
Parkes	CAN	44.5	37.9	3	53.8	67.0
Red Bend	CAN	43.3	38.3	5	53.9	67.2
Parkes South						
Bribbaree	CAN	41.8	39.1	9	54.3	67.6
Caragabal	CAN	43.5	38.6	6	53.3	66.4
Milvale	CAN	43.8	36.9	5	54.4	67.8
Wirrinya	CAN	44.5	38.4	3	54.1	67.4
Central Mean		**42.6**	**39.4**	**7**	**53.9**	**67.2**
Southern NSW						
Barellan						
Barellan	CAN	44.1	39.0	6	53.8	67.1
Matong	CAN	42.7	38.4	11	53.7	66.9
Narrandera	CAN	41.0	41.6	5	53.0	66.0
Boree Creek						
Boree Creek	CAN	41.4	40.0	7	53.2	66.3
Milbrulong	CAN	42.9	40.6	6	54.3	67.6
Rand	CAN	43.7	38.5	6	54.6	68.1
Junee						
Coolamon	CAN	42.4	39.4	7	53.0	66.0
Lake Cargelligo						
Wyalong	CAN	42.5	40.1	6	53.0	66.0
Temora	CAN	43.6	38.7	8	54.3	67.7
Ardlethan	CAN	41.2	41.7	6	53.9	67.1
Temora Sub	CAN	42.6	39.3	6	53.9	67.2
Southern Mean		**42.5**	**39.6**	**6**	**53.7**	**66.9**
NSW Mean		**42.4**	**39.8**	**7**	**53.8**	**67.1**
NSW Min		*39.0*	*36.9*	*3*	*53.0*	*66.0*
NSW Max		*44.5*	*42.5*	*12*	*54.6*	*68.1*

[1] % in whole seed @ 6% moisture, [2] % in oil free meal @10% moisture, [3] µmoles/g in whole seed @ 6% moisture

[4] Volumetric Grain Weights- lbs/b: Pounds per bushel, kg/hL: Kilograms per hectolitre

Table 4: Quality Data – South Australia

Port/ Zone/ Receival Site	Grade	[1] Oil	[2] Protein	[3] Glucosinolates µmoles/g	[4] Grain Weight lbs/b	kg/hL
Port Adelaide						
Adelaide Region						
Port Adelaide (Inner)	CANO	41.5	38.4	9	54.4	67.8
Central Region						
Bowmans	CANO	42.0	37.5	7	53.8	67.0
Gladstone	CANO	42.2	37.8	7	53.5	66.7
Roseworthy	CANO	42.8	39.7	6	54.0	67.3
Eastern Region						
Dooen	CANO	41.1	39.7	7	55.1	68.7
Francis	CANO	43.0	40.2	5	54.2	67.5
Keith	CANO	39.8	39.4	7	54.8	68.3
Tailem Bend	CANO	42.3	39.2	9	54.4	67.8
Wolseley	CANO	40.0	40.9	8	54.4	67.8
Port Adelaide Mean		**42.0**	**38.8**	**7**	**54.1**	**67.4**
Port Giles						
Central Region						
Ardrossan	CANO	41.3	37.7	6	54.6	68.0
Port Giles	CANO	42.7	38.2	7	53.8	67.1
Port Giles Mean		**41.9**	**37.9**	**7**	**54.2**	**67.6**
Port Lincoln						
Western Region						
Cummins	CANO	44.9	37.7	5	54.0	67.3
Port Lincoln	CANO	44.0	38.5	5	54.0	67.3
Rudall	CANO	42.7	39.0	7	55.0	68.5
Tumby Bay	CANO	45.1	37.5	5	54.4	67.8
Port Lincoln Mean		**44.6**	**38.0**	**5**	**54.1**	**67.5**
SA Mean		**43.0**	**38.4**	**6**	**54.1**	**67.4**
SA Min		*39.8*	*37.5*	*5*	*53.5*	*66.7*
SA Max		*45.1*	*40.9*	*9*	*55.1*	*68.7*

[1] % in whole seed @ 6% moisture, [2] % in oil free meal @10% moisture, [3] µmoles/g in whole seed @ 6% moisture

[4] Volumetric Grain Weights- lbs/b: Pounds per bushel, kg/hL: Kilograms per hectolitre

Table 5: Quality Data – Victoria

Region/ Zone/	Grade	[1] Oil	[2] Protein	[3] Glucosinolates µmoles/g	[4] Grain Weight lbs/b	kg/hL
North West Vic						
Horsham East						
Murtoa Sub	CAN	41.5	43.2	8	54.7	68.1
Murtoa Sub	CANG	42.3	40.1	10	53.8	67.0
Warracknabeal	CAN	40.2	43.0	8	54.7	68.1
Horsham West						
Goroke	CAN	41.5	41.6	10	54.6	68.0
Lillimur	CAN	41.2	42.3	8	54.3	67.6
Naracoorte	CAN	43.8	38.5	5	53.8	67.0
Natimuk	CAN	41.3	41.2	9	54.7	68.1
Nhill	CAN	41.3	40.6	7	54.9	68.4
Ouyen North						
Ouyen	CAN	42.4	39.6	7	54.1	67.4
Ouyen South						
Beulah	CAN	41.5	41.4	8	54.7	68.1
Rainbow	CAN	41.1	41.6	7	54.6	68.0
Swan Hill North						
Manangatang	CAN	41.6	38.7	8	54.6	68.0
Piangil	CAN	41.1	39.0	9	54.4	67.8
Ultima	CAN	39.4	38.5	10	55.4	69.0
Swan Hill South						
Quambatook	CAN	42.3	39.7	7	54.4	67.8
North West Mean		**41.6**	**40.8**	**8**	**54.5**	**67.9**
South East Vic						
Dunolly						
Boort	CAN	43.0	38.7	7	54.0	67.3
Donald	CAN	40.0	42.5	10	55.0	68.5
Dunolly Sub	CAN	41.6	41.2	8	54.8	68.3
Elmore						
Barnes Crossing	CAN	42.3	36.9	6	53.6	66.8
Deniliquin	CAN	42.3	37.9	7	54.2	67.5
Elmore	CAN	45.0	38.0	4	54.0	67.3
Mitiamo	CAN	44.6	38.5	5	54.0	67.3
Murchison East	CAN	45.0	37.3	5	54.0	67.3
Tandarra	CAN	43.6	39.2	5	54.1	67.4
Westmere						
Berrybank	CAN	44.8	37.1	4	54.3	67.6
Hamilton	CAN	44.8	37.5	5	54.0	67.3
Westmere	CAN	44.5	38.8	3	54.6	68.0
Willaura	CAN	43.7	38.0	6	54.6	68.0
Yarrawonga						
Dookie	CAN	44.8	37.5	5	54.2	67.5
Oaklands	CAN	42.4	38.5	9	54.2	67.5
Oaklands	CANG	42.7	37.1	9	54.2	67.5
St James	CANG	42.9	37.0	6	54.3	67.6
Tocumwal	CAN	44.0	37.4	7	54.2	67.5
Yarrawonga	CAN	44.0	37.2	6	54.1	67.4
South East Mean		**44.0**	**38.2**	**5**	**54.2**	**67.6**
Victoria Mean		**43.4**	**38.8**	**6**	**54.3**	**67.7**
Victoria Min		*39.4*	*36.9*	*3*	*53.6*	*66.8*
Victoria Max		*45.0*	*43.2*	*10*	*55.4*	*69.0*

[1] % in whole seed @ 6% moisture, [2] % in oil free meal @10% moisture, [3] µmoles/g in whole seed @ 6% moisture

[4] Volumetric Grain Weights- lbs/b: Pounds per bushel, kg/hL: Kilograms per hectolitre

Table 6: Quality Data – Western Australia

Port Zone/ Receival Site	Grade	[1] Oil	[2] Protein	[3] Glucosinolates µmoles/g	[4] Grain Weight lbs/b	kg/hL
Albany						
Albany	CAG1	45.7	36.9			
Albany	CAG2	46.0	36.6			
Albany	CAN1	46.4	37.0			
Albany	CAN2	46.5	36.7			
Esperance						
Esperance	CAG1	46.7	36.8			
Esperance	CAN1	46.3	36.9			
Esperance	CAN1HE	46.2	36.2			
Esperance	CAN1	45.7	35.6			
Geraldton						
Geraldton	CAG1	44.4	40.5			
Geraldton	CAG2	42.5	42.6			
Geraldton	CAN1	44.4	41.3			
Geraldton	CAN2	43.2	41.6			
Kwinana						
Kwinana	CAG1	45.9	37.7			
Kwinana	CAG2	45.9	37.5			
Kwinana	CAN1	46.1	38.1			
Kwinana	CAN2	46.5	37.6			
WA Mean		**44.4**	**38.8**			
WA Min		*37.2*	*36.6*			
WA Max		*46.5*	*42.6*			

[1] % in whole seed @ 6% moisture, [2] % in oil free meal @10% moisture, [3] µmoles/g in whole seed @ 6% moisture

[4] Volumetric Grain Weights- lbs/b: Pounds per bushel, kg/hL: Kilograms per hectolitre

Fatty Acid Composition by State

Table 7: Fatty Acid Composition – New South Wales

Region/ Zone/ R	Grade	14:0	16:0	16:1	17:0	17:1	18:0	18:1	18:2	18:3	20:0	20:1	22:0	22:1	24:0	24:1	Total	[1] Sat.	[2] Iodine Value
Northern NSW																			
Moree South																			
Moree-Haddads	CAN	0.1	4.0	0.3	0.2	0.2	2.3	64.9	17.0	9.0	0.5	1.1	0.2	<0.1	0.1	0.1	100	7.4	109.8
Werris Creek																			
Premer	CAN	0.1	4.2	0.3	0.2	0.1	2.1	64.2	17.9	8.7	0.6	1.1	0.2	<0.1	0.1	0.1	100	7.5	110.1
Quirindi	CAN	0.1	4.0	0.3	0.2	0.2	2.4	64.8	17.6	8.4	0.5	1.0	0.2	0.1	0.1	0.1	100	7.5	109.3
Northern NSW Mean		**0.1**	**4.1**	**0.3**	**0.2**	**0.2**	**2.2**	**64.6**	**17.5**	**8.7**	**0.5**	**1.1**	**0.2**	**0.1**	**0.1**	**0.1**	**100**	**7.5**	**109.8**
Central NSW																			
Dubbo North																			
Curban	CAN	0.1	4.1	0.3	0.1	0.1	2.0	65.8	16.9	8.4	0.5	1.1	0.2	<0.1	0.1	0.1	100	7.2	109.0
Dubbo West																			
Nyngan	CAN	0.1	4.3	0.3	0.2	0.1	2.3	64.5	17.9	8.3	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.7	109.2
Nevertire	CAN	0.1	3.9	0.3	0.1	0.1	2.7	71.0	16.6	3.1	0.6	1.1	0.2	<0.1	0.2	0.1	100	7.8	98.9
Mungeribar	CAN	0.1	4.2	0.3	0.1	0.1	2.1	64.6	17.3	8.8	0.6	1.1	0.3	<0.1	0.2	0.2	100	7.5	109.6
Mungeribar	1011	0.1	4.0	0.3	0.1	0.1	2.7	69.5	18.1	2.9	0.6	1.1	0.2	<0.1	0.2	0.1	100	7.9	100.0
Narwonah	CAN	0.1	4.4	0.3	0.1	0.1	2.1	63.5	18.7	8.5	0.5	1.1	0.2	<0.1	0.1	0.1	100	7.6	110.5
Narwonah	1011	0.1	4.0	0.3	0.2	0.2	2.4	65.8	16.9	8.4	0.5	1.0	0.2	0.1	0.1	0.1	100	7.4	108.7
Parkes North																			
Bogan Gate	CAN	0.1	4.2	0.3	0.1	0.1	1.9	67.7	14.9	8.4	0.5	1.2	0.3	0.1	0.1	0.1	100	7.3	107.2
Parkes	CAN	0.1	4.2	0.3	0.2	0.1	2.2	65.7	16.6	8.8	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.5	109.2
Red Bend	CAN	0.1	4.2	0.3	0.1	0.1	2.1	66.8	15.4	8.7	0.6	1.1	0.3	<0.1	0.1	0.1	100	7.5	108.0
Parkes South																			
Bribbaree	CAN	0.1	4.1	0.3	0.1	0.1	1.9	68.2	14.4	8.5	0.5	1.2	0.3	<0.1	0.2	0.1	100	7.2	107.0
Caragabal	CAN	0.1	4.3	0.3	0.1	0.1	2.0	65.3	16.9	8.8	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.4	109.6
Milvale	CAN	0.1	4.1	0.3	0.1	0.1	1.9	69.1	13.8	8.2	0.6	1.2	0.3	<0.1	0.1	0.1	100	7.2	106.0
Wirrinya	CAN	0.1	4.3	0.3	0.1	0.1	1.9	66.2	16.4	8.6	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.3	108.9
Central NSW Mean		**0.1**	**4.2**	**0.3**	**0.1**	**0.1**	**2.2**	**66.2**	**17.0**	**7.7**	**0.6**	**1.1**	**0.3**	**<0.1**	**0.2**	**0.2**	**100**	**7.5**	**107.5**
Southern NSW																			
Barellan																			
Barellan	CAN	0.1	4.2	0.3	0.1	0.1	1.9	65.3	17.1	8.8	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.2	109.9
Matong	CAN	0.1	4.1	0.3	0.2	0.1	2.0	66.0	15.6	9.5	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.2	109.7
Narrandera	CAN	0.1	4.6	0.3	0.1	0.1	1.9	61.9	19.4	9.5	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.6	112.9
Boree Creek																			
Boree Creek	CAN	0.1	4.3	0.3	0.1	0.1	1.9	64.3	16.8	9.8	0.5	1.1	0.3	<0.1	0.2	0.2	100	7.4	111.2
Milbrulong	CAN	0.1	4.4	0.3	0.1	0.1	1.9	64.1	17.7	9.2	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.4	111.0
Rand	CAN	0.1	4.3	0.3	0.1	0.1	1.9	64.3	17.5	9.3	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.4	110.9
Junee																			
Coolamon	CAN	0.1	4.4	0.3	0.1	0.1	1.9	63.9	17.7	9.5	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.4	111.4
Lake Cargelligo																			
Wyalong	CAN	0.1	4.4	0.3	0.1	0.1	2.0	64.3	17.9	8.7	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.6	110.0
Temora																			
Ardlethan	CAN	0.1	4.3	0.3	0.1	0.1	2.0	65.2	16.5	9.2	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.5	109.9
Temora	CAN	0.1	4.4	0.3	0.1	0.1	1.9	65.2	17.0	8.9	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.4	109.8
Southern NSW Mean		**0.1**	**4.3**	**0.3**	**0.1**	**0.1**	**1.9**	**64.7**	**17.2**	**9.2**	**0.5**	**1.1**	**0.3**	<0.1	**0.1**	**0.1**	**100**	**7.4**	**110.5**
NSW Mean		**0.1**	**4.2**	**0.3**	**0.1**	**0.1**	**2.2**	**65.6**	**17.1**	**8.2**	**0.5**	**1.1**	**0.3**	**<0.1**	**0.1**	**0.1**	**100**	**7.5**	**108.5**
NSW Min		*0.1*	*3.9*	*0.3*	*0.1*	*0.1*	*1.9*	*61.9*	*13.8*	*2.9*	*0.5*	*1.0*	*0.2*	<0.1	*0.1*	*0.1*	*100*	*7.2*	*98.9*
NSW Max		*0.1*	*4.6*	*0.3*	*0.2*	*0.2*	*2.7*	*71.0*	*19.4*	*9.8*	*0.6*	*1.2*	*0.3*	*0.1*	*0.2*	*0.2*	*100*	*7.9*	*112.9*

[1] Sat - Sum of the saturated fatty acids including 14:0, 16:0, 17:0, 18:0, 20:0 and 24:0

[2] Iodine Value - Calculated from the fatty acid composition

Table 8: Fatty Acid Composition – South Australia

Port/ Zone/ Receival Site	Grade	14:0	16:0	16:1	17:0	17:1	18:0	18:1	18:2	18:3	20:0	20:1	22:0	22:1	24:0	24:1	Total	[1] Sat.	[2] Iodine Value
Port Adelaide																			
Adelaide Region																			
Port Adelaide (Inn	CANO	0.1	4.4	0.3	0.2	0.2	2.2	61.8	18.7	9.9	0.6	1.0	0.3	<0.1	0.2	0.1	100	8.0	112.5
Central Region																			
Bowmans	CANO	0.1	4.3	0.3	0.2	0.1	2.2	64.0	17.7	9.1	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.7	110.5
Gladstone	CANO	0.1	4.5	0.3	0.1	0.1	2.0	65.0	17.2	8.6	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.6	109.3
Roseworthy	CANO	0.1	4.4	0.3	0.2	0.1	2.1	64.2	17.9	8.9	0.5	1.1	0.3	<0.1	0.1	<0.1	100	7.6	110.5
Eastern Region																			
Dooen	CANO	0.1	4.0	0.3	0.2	0.2	2.2	66.4	15.7	8.7	0.6	1.1	0.3	0.1	0.1	0.1	100	7.5	108.3
Francis	CANO	0.1	4.3	0.3	0.1	0.1	2.0	63.0	18.2	9.7	0.6	1.1	0.3	<0.1	0.1	0.1	100	7.6	112.1
Keith	CANO	0.1	4.4	0.3	0.2	0.2	2.2	62.5	18.6	9.5	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.8	111.9
Tailem Bend	CANO	0.1	4.3	0.3	0.2	0.1	2.0	62.6	18.2	10.0	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.6	112.6
Wolseley	CANO	0.1	4.3	0.3	0.2	0.1	2.1	64.9	16.7	9.0	0.6	1.2	0.3	<0.1	0.2	0.1	100	7.7	109.4
Port Adelaide Mean		**0.1**	**4.3**	**0.3**	**0.2**	**0.1**	**2.1**	**63.7**	**17.8**	**9.3**	**0.5**	**1.1**	**0.3**	**<0.1**	**0.1**	**0.1**	**100**	**7.7**	**111.0**
Pt Giles																			
Central Region																			
Ardrossan	CANO	0.1	4.4	0.3	0.2	0.2	2.3	62.6	18.1	9.8	0.6	1.0	0.3	<0.1	0.2	0.1	100	7.9	111.8
Port Giles	CANO	0.1	4.3	0.3	0.2	0.2	2.2	62.2	18.2	10.3	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.7	113.1
Port Giles Mean		**0.1**	**4.3**	**0.3**	**0.2**	**0.2**	**2.2**	**62.4**	**18.1**	**10.0**	**0.6**	**1.0**	**0.3**	**<0.1**	**0.2**	**0.1**	**100**	**7.8**	**112.4**
Pt Lincoln																			
Western Region																			
Cummins	CANO	0.1	4.4	0.3	0.2	0.1	2.0	61.8	19.1	10.0	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.5	113.6
Port Lincoln	CANO	0.1	4.4	0.3	0.2	0.1	2.0	63.1	17.6	10.1	0.6	1.0	0.3	<0.1	0.1	0.1	100	7.6	112.3
Rudall	CANO	0.1	4.5	0.3	0.2	0.1	2.0	60.1	21.4	9.4	0.4	0.9	0.2	<0.1	0.1	0.1	100	7.6	114.5
Tumby Bay	CANO	0.1	4.3	0.3	0.2	0.1	2.0	62.6	18.5	9.9	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.4	112.9
Port Lincoln Mean		**0.1**	**4.4**	**0.3**	**0.2**	**0.1**	**2.0**	**62.2**	**18.7**	**10.0**	**0.5**	**1.0**	**0.3**	**<0.1**	**0.1**	**0.1**	**100**	**7.5**	**113.2**
SA Mean		**0.1**	**4.4**	**0.3**	**0.2**	**0.1**	**2.1**	**62.9**	**18.2**	**9.6**	**0.5**	**1.0**	**0.3**	**<0.1**	**0.1**	**0.1**	**100**	**7.6**	**112.0**
SA Min		*0.1*	*4.0*	*0.3*	*0.1*	*0.1*	*2.0*	*60.1*	*15.7*	*8.6*	*0.4*	*0.9*	*0.2*	*<0.1*	*0.1*	*<0.1*	*100*	*7.4*	*108.3*
SA Max		*0.1*	*4.5*	*0.3*	*0.2*	*0.2*	*2.3*	*66.4*	*21.4*	*10.3*	*0.6*	*1.2*	*0.3*	*0.1*	*0.2*	*0.1*	*100*	*8.0*	*114.5*

[1] Sat - Sum of the saturated fatty acids including 14:0, 16:0, 17:0, 18:0, 20:0 and 24:0

[2] Iodine Value - Calculated from the fatty acid composition

Table 9: Fatty Acid Composition – Victoria

Region/ Zone	Grade	14:0	16:0	16:1	17:0	17:1	18:0	18:1	18:2	18:3	20:0	20:1	22:0	22:1	24:0	24:1	Total	[1] Sat.	[2] Iodine Value
North West Vic																			
Hosham East																			
Murtoa Sub	CAN	0.1	4.2	0.3	0.2	0.1	2.0	63.4	18.0	9.5	0.5	1.1	0.3	<0.1	0.2	0.2	100	7.5	111.6
Murtoa Sub	CANG	0.1	4.4	0.3	0.1	0.1	2.2	63.2	17.6	10.0	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.7	112.0
Warracknabeal	CAN	0.1	4.3	0.3	0.2	0.1	2.0	61.9	19.3	9.8	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.5	113.3
Hosham West																			
Goroke	CAN	0.1	4.1	0.3	0.1	0.1	1.9	65.8	16.0	9.3	0.6	1.2	0.3	<0.1	0.2	0.2	100	7.2	109.7
Lillimur	CAN	0.1	4.4	0.3	0.2	0.2	2.1	64.6	17.0	8.9	0.6	1.1	0.3	<0.1	0.2	0.1	100	7.8	109.4
Naracoorte	CAN	0.1	4.2	0.3	0.2	0.1	2.0	63.1	17.1	10.5	0.6	1.1	0.3	<0.1	0.2	0.2	100	7.5	112.5
Natimuk	CAN	0.1	4.2	0.3	0.1	0.1	1.9	65.5	16.4	9.2	0.5	1.1	0.3	<0.1	0.2	0.1	100	7.2	110.0
Nhill	CAN	0.1	4.3	0.3	0.2	0.2	2.1	63.3	18.5	9.0	0.5	1.0	0.3	<0.1	0.2	0.2	100	7.6	111.0
Ouyen North																			
Ouyen	CAN	0.1	4.5	0.3	0.2	0.1	2.1	60.7	19.9	10.3	0.4	0.9	0.2	0.1	0.1	0.1	100	7.6	114.6
Ouyen South																			
Beulah	CAN	0.1	4.3	0.3	0.2	0.1	2.1	61.1	19.8	10.2	0.5	0.9	0.2	<0.1	0.1	0.1	100	7.4	114.4
Rainbow	CAN	0.1	4.5	0.3	0.2	0.1	2.0	60.9	20.4	9.7	0.5	0.9	0.2	<0.1	0.1	0.1	100	7.6	114.1
Swan Hill North																			
Manangatang	CAN	0.1	4.2	0.3	0.2	0.2	2.2	62.3	18.7	10.1	0.5	0.9	0.2	<0.1	0.1	0.1	100	7.5	113.2
Piangil	CAN	0.1	4.2	0.3	0.2	0.1	2.3	64.2	17.3	9.3	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.6	110.7
Ultima	CAN	0.1	4.1	0.3	0.2	0.2	2.4	63.3	17.9	9.4	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.8	111.2
Swan Hill South																			
Quambatook	CAN	0.1	4.3	0.3	0.2	0.1	2.1	62.8	18.6	9.7	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.4	112.5
North West Mean		**0.1**	**4.3**	**0.3**	**0.2**	**0.1**	**2.0**	**63.6**	**17.8**	**9.5**	**0.5**	**1.0**	**0.3**	**<0.1**	**0.1**	**0.1**	**100**	**7.5**	**111.6**
South East Vic																			
Dunolly																			
Boort	CAN	0.1	4.2	0.3	0.2	0.1	2.1	65.6	16.6	8.7	0.6	1.1	0.3	0.1	0.1	0.1	100	7.5	109.0
Donald	CAN	0.1	4.1	0.3	0.2	0.1	2.1	62.5	18.7	9.8	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.4	112.9
Dunolly Sub	CAN	0.1	4.2	0.3	0.1	0.1	1.8	63.9	18.3	9.2	0.5	1.1	0.3	<0.1	0.1	0.1	100	7.2	111.6
Elmore																			
Barnes Crossing	CAN	0.1	4.4	0.3	0.1	0.1	2.0	64.9	17.1	8.9	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.5	109.9
Deniliquin	CAN	0.1	4.3	0.3	0.1	0.1	1.9	64.8	17.3	9.0	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.4	110.3
Elmore	CAN	0.1	4.4	0.3	0.1	0.1	1.9	62.4	19.9	9.0	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.3	112.6
Mitiamo	CAN	0.1	4.3	0.3	0.1	0.1	1.9	64.2	18.1	9.0	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.3	111.1
Murchison East	CAN	0.1	4.1	0.3	0.1	0.1	1.9	66.0	16.5	8.8	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.2	109.5
Tandarra	CAN	0.1	4.3	0.3	0.1	0.1	1.9	64.6	17.8	8.8	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.2	110.5
Westmere																			
Berrybank	CAN	0.1	4.3	0.3	0.1	0.1	1.9	63.1	18.2	10.0	0.5	1.0	0.2	<0.1	0.1	0.1	100	7.2	113.0
Hamilton	CAN	0.1	4.3	0.3	0.2	0.1	1.9	63.3	17.7	10.1	0.5	1.0	0.3	<0.1	0.1	0.1	100	7.3	112.6
Westmere	CAN	0.1	4.3	0.3	0.1	0.1	1.8	62.4	18.8	10.1	0.5	1.0	0.3	<0.1	0.1	0.2	100	7.3	113.6
Willaura	CAN	0.1	4.3	0.3	0.1	0.1	1.8	63.7	17.6	10.0	0.5	1.1	0.3	<0.1	0.1	0.2	100	7.2	112.5
Yarrawonga																			
Dookie	CAN	0.1	4.1	0.2	0.1	0.1	2.0	67.1	16.2	8.0	0.6	1.0	0.3	<0.1	0.1	0.1	100	7.3	107.6
Oaklands	CAN	0.1	4.3	0.3	0.1	0.1	1.9	66.4	15.8	8.9	0.5	1.1	0.3	0.1	0.2	0.2	100	7.3	108.8
Oaklands	CANG	0.1	4.4	0.3	0.1	0.1	2.3	63.7	17.9	8.9	0.6	1.0	0.3	<0.1	0.2	0.1	100	8.0	110.1
St James	CANG	0.1	4.3	0.3	0.1	0.1	2.4	64.5	17.4	8.6	0.6	1.0	0.3	<0.1	0.2	0.2	100	8.0	109.1
Tocumwal	CAN	0.1	4.1	0.3	0.1	0.1	1.8	66.1	16.2	8.7	0.5	1.1	0.3	<0.1	0.2	0.3	100	7.2	108.9
Yarrawonga	CAN	0.1	4.2	0.3	0.1	0.1	2.0	66.7	16.2	8.3	0.5	1.0	0.3	<0.1	0.1	0.2	100	7.3	108.1
South East Mean		**0.1**	**4.3**	**0.3**	**0.1**	**0.1**	**1.9**	**64.4**	**17.6**	**9.1**	**0.5**	**1.0**	**0.3**	**<0.1**	**0.1**	**0.1**	**100**	**7.3**	**110.9**
Victoria Mean		**0.1**	**4.3**	**0.3**	**0.1**	**0.1**	**2.0**	**64.2**	**17.7**	**9.2**	**0.5**	**1.0**	**0.3**	**<0.1**	**0.1**	**0.1**	**100**	**7.3**	**111.0**
Victoria Min		*0.1*	*4.1*	*0.2*	*0.1*	*0.1*	*1.8*	*60.7*	*15.8*	*8.0*	*0.4*	*0.9*	*0.2*	*<0.1*	*0.1*	*0.1*	*100*	*7.2*	*107.6*
Victoria Max		*0.1*	*4.5*	*0.3*	*0.2*	*0.2*	*2.4*	*67.1*	*20.4*	*10.5*	*0.6*	*1.2*	*0.3*	*0.1*	*0.2*	*0.3*	*100*	*8.0*	*114.6*

[1] Sat - Sum of the saturated fatty acids including 14:0, 16:0, 17:0, 18:0, 20:0 and 24:0

[2] Iodine Value - Calculated from the fatty acid composition

Definitions

Canola is defined as seed of the species *Brassica napus or Brassica rapa* but containing less than 30 micromoles of specified glucosinolates per g of oil-free air-dry solids and not more than 2% erucic acid in the oil component, as a proportion of the total fatty acids content. The specified glucosinolates are any one or a mixture of 3-butenyl, 4-pentenyl, 2-hydroxy-3-butenyl and 2-hydroxy-4-pentenyl glucosinolates (p 27, AOF 2014).

Methods

Moisture Content:

Moisture is determined on whole seed using a 6500 near infrared (NIR) spectrometer calibrated using AOF 4-1.6: "Moisture Content of Oilseeds Oven Method". The moisture contents are used to convert the raw data for oil, protein and glucosinolates to the appropriate moisture content for reporting.

Oil Content:

Oil content is determined by NIR, calibrated from results obtained using method AOCS Am2-93 "Determination of Oil Content in Oilseeds". Oil is extracted from ground seed on either a Foss Soxtec™ 2050 or a Büchi B-811 Extraction System using hexane for four hours. The sample is reground and extracted for 2 hours. The sample is again ground and extracted for a further 2 hours. The results are reported as a percentage of the seed at 6% moisture.

Protein Content:

Protein content is determined on whole seed by NIR, calibrated from samples analysed by the LECO elemental analyser using AOF 4-3.3: "Protein, Crude, of Meals (Combustion)". Results are reported as percent protein (Nitrogen x 6.25) and calculated to 10% moisture in oil-free meal.

Glucosinolate Content:

Total glucosinolate concentration is determined by NIR, calibrated by method AOF 4-1.22: "Glucosinolate Content, Glucose Method, Canola and Rapeseed". The method involves an enzymatic hydrolysis to release glucose followed by a colorimetric reaction and determination by a UV-Vis spectrophotometer. The method has compared favourably with the HPLC methodology of the AOCS with the added advantage of speed and economy. Results are reported as μmoles glucosinolates/gram whole seed at 6% moisture.

Fatty Acid Composition:

Fatty acid composition involves methylation of fatty acids with a methanolic solution of potassium hydroxide. The method is based on IOC COI/T.20/Doc. No. 24 2001: "Preparation of the Fatty Acid Methyl Esters from Olive Oil and Olive-Pomace Oil". The methyl esters are then separated on a gas chromatograph using a BPX70 capillary column. Fatty acids are reported as a percentage of the total fatty acids.

Iodine Values:

Iodine values are calculated from the fatty acid profile using AOF 4-2.14: "Iodine Value by Fatty Acid Composition".

Volumetric Grain Weights:

Volumetric grain weights are measured using a Franklin chrondrometer and reported as both pounds/bushel and kilograms/hectolitre.

References

Australian Oilseeds Federation *Section 1: Quality Standards, Technical Information & Typical Analysis* (2014) **Issue 13** p 27


NSW
GOVERNMENT
Department of
Primary Industries


AOF
Australian Oilseeds
Federation