Quality of western Canadian lentils

1999

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Introduction

This is the first harvest survey report for western Canadian lentils. The report presents 1999 lentil quality information. Data are from analyses of lentil samples submitted to the Canadian Grain Commission's (CGC) Grain Research Laboratory (GRL) throughout the harvest period by western Canadian producers.

Weather and production review

Weather review

The weather review for the 1999 western Canadian lentil harvest survey was provided by the Weather and Crop Surveillance department of the Canadian Wheat Board. A cool, wet spring in many prairie regions delayed the seeding of crops and led to an extended harvest period.

Seeding

The 1999 growing season started earlier than usual in parts of the Prairies as warmer than normal temperatures in the second half of April encouraged planting. The warm, dry conditions continued into the first week of May and producers in some regions, especially southern Alberta and southeastern Manitoba, managed to seed most of their crops by this time. This was not the case for the rest of the prairie region, especially eastern Saskatchewan and western Manitoba, where seeding was delayed by heavier than normal snow cover and excessive soil moisture levels. May precipitation over most of the southern and central Prairies was significantly above normal, while amounts in northern regions were closer to normal. Temperatures in May also turned cooler with most prairie locations reporting deviations of one to two degrees below normal. These conditions slowed seeding progress and resulted in serious planting delays. The wet conditions continued through the first half of June, which resulted in continued planting delays in the eastern half of the Prairies.

Growing Season

The wet conditions persisted through June across most of the Prairies. In areas where crops were planted and emerging, these soil moisture levels resulted in above average stands with excellent yield potential. The frequent rainfall pattern continued through July helping to maintain crop conditions. Temperatures remained cooler than normal through June and July, with stations reporting monthly averages ranging from 0.5°C to 3.0°C below normal. The coolest temperatures were reported in the western regions of the Prairies during June and July. The cooler weather during late July and early August provided ideal conditions for flowering and the yield potential in most regions was above normal. August brought a change in the weather as rains generally tapered off and temperatures climbed to normal or above normal across the Prairies. The warm temperatures encouraged crop development, although most regions were still 10 to 15 days behind normal development at the end of the month.

Harvest

The lateness of pulse crops across the prairie region raised concerns about the potential for severe quantity or quality loss due to frost. The first sub-zero temperatures were reported in the foothills of southern, central and east-central Alberta during the first week of September. During the same week, parts of northern and west-central Saskatchewan

reported light frosts. The remainder of the Prairies did not report freezing temperatures until the latter part of September. In most regions, the first frost in 1999 was very close to or after the average frost date for the region.

Harvest began in southeastern Manitoba and southern Alberta by the middle of August, but these regions were the exception rather than the rule. The bulk of the western Canadian harvest started in September and finished in October. Precipitation during September and October was below normal, especially in the western half of the Prairies. This helped maintain quality of the pulses, despite the prolonged harvest. The eastern half of the Prairies received normal to above normal precipitation during September and October, which resulted in some deterioration of crop quality.

Production review

Production of lentils increased by 50% to 0.72 million tonnes as shown in Table 1. There was a 33% increase in harvested area as well as a 13% increase in yields. The total supply increased by about 47% to 0.74 thousand tonnes[1].

Saskatchewan accounts for 97% of Western Canada's lentil production. Laird continues to be the dominant variety grown in Saskatchewan accounting for approximately 50% of total lentil production. Eston accounts for 15% of lentil production with the remaining 35% made up CDC Richlea, red lentils, such as CDC Crimson and CDC Red Wing, and French green varieties.[2]

Table 1 • Production of western Canadian lentils—1999[1]

Province	Harvested area	Production	Yield
	thousand hectares	thousand tonnes	kg/ha
Manitoba	6.1	8.8	1443
Saskatchewan	481.6	702.6	1459
Alberta	8.9	12.4	1393
Western Canada	**496.6**	**723.8**	**1458**

[1] Statistics Canada, Field Crop Reporting Series, No.8.
November estimate of Production of Principal Field crops, Canada, 1999.

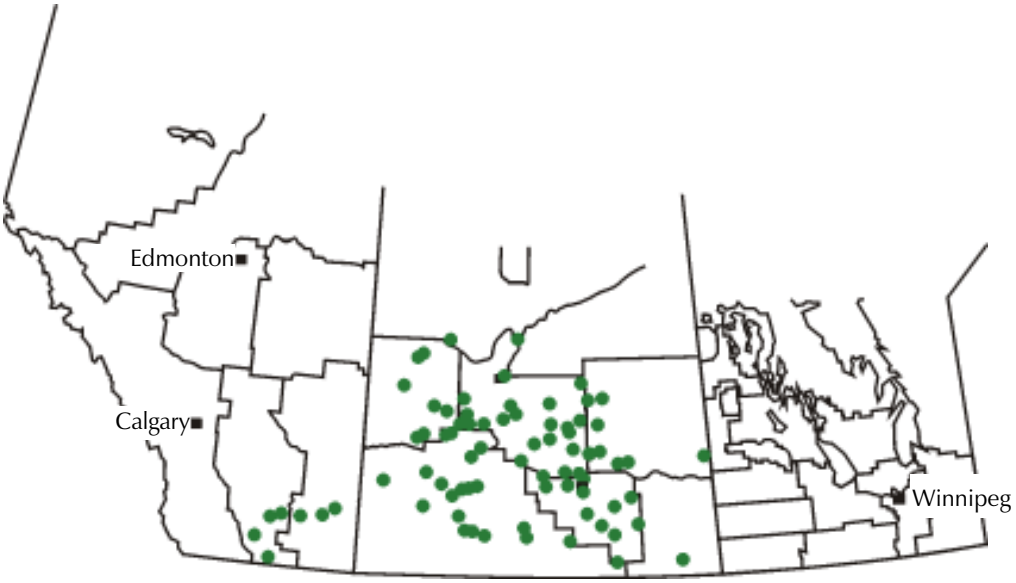
[1] Agriculture and Agri-Food Canada Policy Branch, Market Analysis Division. Canada: Special Crops Situation and Outlook. February 17, 2000.

[2] Saskatchewan Agriculture and Food. 1999 Specialty Crop Report. January 2000.

Harvest survey samples

Samples for the CGC harvest survey are collected from producers across western Canada. For the 1999 harvest survey, 118 lentil samples were received for analysis. Due to the wet conditions in southwestern Manitoba and southeastern Saskatchewan, very few producer envelopes were sent to these areas. There were no lentil samples received from Manitoba and only 9 samples from Alberta, all from the southeastern region of the province. It is important to note that the samples reported by grade and province do not necessarily represent the actual distribution of grade or production in that province.

Figure 1 • Map showing location of harvest survey samples



Quality of 1999 western Canadian lentils

This is the first harvest survey report on western Canadian lentils. It is not possible to make comparisons with data from previous years except for commenting on the long term trend in protein content based on previous survey work as shown in Figure 2. The average protein content for 1999 is 27.2% which is slightly higher than the 1998 average of 27.0% and higher than the long term average of 25.8%.

Table 2 contains protein data compiled by grade and province. Although protein content by grade level is relatively consistent, it is interesting to note that protein levels decrease as the grade of the lentils increase. The protein content by variety for the lentil harvest survey samples appears in Table 3.

Figure 2 • Protein content of western Canadian lentils

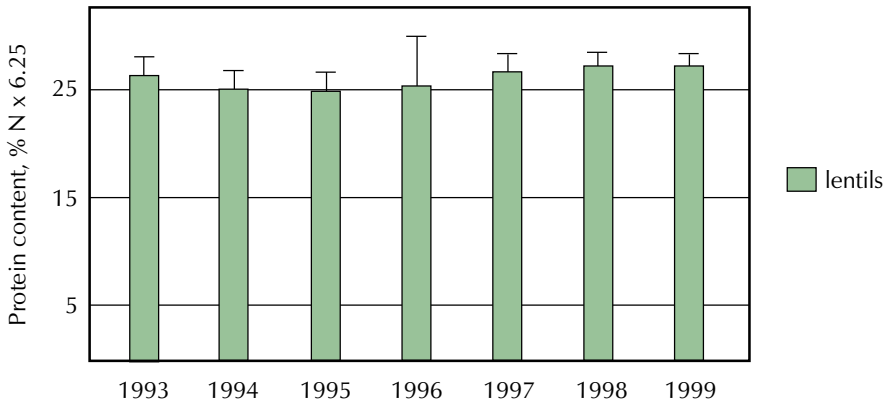


Table 2 • Quality data for the 1999 harvest survey of western Canadian lentils

Province	Grade	No. of samples	Protein content[1], %		
			mean	min.	max.
Alberta	No. 1 Canada	4	26.2	23.9	27.8
	No. 2 Canada	5	27.3	26.4	28.4
	All grades	**9**	**26.8**	**23.9**	**28.4**
Saskatchewan	No. 1 Canada	22	26.6	24.6	29.6
	No. 1 Canada French	3	27.8	27.3	28.5
	No. 2 Canada	26	27.0	24.7	29.6
	Extra No. 3 Canada	20	27.4	25.1	29.1
	No. 3 Canada	32	27.6	25.3	30.2
	All grades	**103**	**27.2**	**24.6**	**30.2**
Western Canada	No. 1 Canada	26	26.6	23.9	29.6
	No. 1 Canada French	3	27.8	27.3	28.5
	No. 2 Canada	31	27.1	24.7	29.6
	Extra No. 3 Canada	20	27.4	25.1	29.1
	No. 3 Canada	32	27.6	25.3	30.2
	All grades	**112**	**27.2**	**23.9**	**30.2**

[1] N x 6.25; dry matter basis

Table 3 • Quality of 1999 harvest survey western Canadian lentils by variety

Variety	No. of samples	Protein content[1], %		
		mean	min.	max.
CDC Milestone	2	26.4	25.4	27.4
CDC Redwing	9	28.1	27.0	29.0
CDC Richlea	12	25.8	23.9	27.3
CDC Crimson	12	26.8	24.9	28.8
Eston	17	28.5	26.7	30.2
French green	3	27.8	27.3	28.5
Laird	47	27.1	25.1	28.9

[1] N x 6.25; dry matter basis

Methods

Protein

Protein content is determined by near-infrared (NIR) spectroscopy using an NIRSystems 6500 scanning near-infrared spectrometer. The instrument is calibrated and results are verified by the AOAC Official Method 992.23 – Crude Protein in Cereal Grains and Oilseeds Generic Combustion Method using a LECO FP-428 Nitrogen and Food Protein Determinator. Protein content is reported as percentage, N x 6.25, calculated on a dry matter basis.

Grading

All 1999 harvest survey pea samples were inspected by the staff of the Special Crops unit, Industry Services Headquarters, Canadian Grain Commission as per the Canadian Grain Commission's *Official Grain Grading Guide,* August 1, 1999, Chapter 18, Lentils.