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Quality of western Canadian chickpeas

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Introduction

This report presents the quality data for the 2009 harvest survey for western Canadian chick peas. Samples submitted by western Canadian producers to the Canadian Grain Commission's (CGC) Grain Research Laboratory (GRL) were collected for data analysis.

Growing and harvesting conditions

The Prairie Provinces experienced a cool spring to start the 2009 growing season. Southern prairies experienced poor soil moisture in early spring, brought on by dry conditions since 2006 and below normal winter precipitation. Cool temperatures in spring delayed snowmelt and overall planting and germination. Moderate rainfall in early June helped improve crop germination.

Frost was reported in many regions into early June. Cool temperatures and dry conditions continued through to July in many of the prairie regions, except in north and central Alberta, which were hot and dry. The cool temperatures delayed crop development, but reduced the stress on the crops and helped maintain the crop conditions until the rains in mid July. The hot and dry conditions experienced in north and central Alberta led to some crop deterioration. Warmer temperatures were seen in the southern prairies in late August and September that helped boost crop development.

Mild temperatures in late August and September and later than normal fall frost helped late maturing crops to mature without significant damage, and the dry conditions helped preserve the crop quality. The warmer temperatures also enabled most crops to be harvested by mid October. Although warm dry conditions in late August and most of September advanced crop maturity, the prevailing cooler than normal growing period and dry conditions led to a later than normal harvest. Wet conditions in mid October delayed harvest of chick peas.

Production review

Production of chick peas (Table 1) for 2009 was estimated at 76 thousand tonnes, which was up 13% from 2008 (67 thousand tonnes), but still down 60% from the 10-year average (190 thousand tonnes). The increased production in 2009 was a result of higher yields, even though the harvested area was approximately the same. Saskatchewan accounted for approximately 75% of western Canadian chick pea production in 2009, while Alberta accounted for the remaining 25%.

Table 1 – Production statistics for western Canadian chickpeas¹

	Harvested area		Production		Yield		Mean production ²
Province	2009	2008	2009	2008	2009	2008	1999-2008
	thousand hectares		thousand tonnes		kg/ha		thousand tonnes
Chick peas							
Manitoba	-	-	-	-	-	-	5
Saskatchewan	30	42	57	67	1890	1580	174
Alberta ³	10	-	18	-	1810	-	164
Western Canada	40	42	76	67	1870	1580	190

¹ Statistics Canada, *Field Crop Reporting Series*, Vol. 88, No. 8.

² Statistics Canada, *Field Crop Reporting Series*, 1999-2008.

³ Includes the Peace River area of British Columbia.

Western Canadian chick peas _____ 2009

Harvest survey samples

Samples for the CGC harvest survey were collected from producers in Saskatchewan and Alberta (Fig. 1). For the 2009 harvest survey, a total of 8 chick pea samples, consisting of 8 kabuli samples and 0 desi samples, were received at the CGC for analysis. All samples were graded and analyzed for protein and starch content. Due to the small number of desi chick pea samples received, only results for kabuli chick peas were included in the 2009 quality report. It is important to note that the samples reported by grade do not necessarily represent the actual distribution of grade.

Figure 1 – Map of western Canada showing origin of 2009 harvest survey chick pea samples



Quality of 2009 western Canadian chick peas

Protein content ranged from 19.0% to 23.2% for 2009 western Canadian chick peas (Table 2). The average protein for 2009 was 21.4%, which was lower than 2008 (24.1%), and the five-year average of 23.2% (Fig. 2).

Chick peas, Kabuli, Canada Western No. 1 from 2009 (Table 3) had lower protein contents (22.0%) than the 2008 (24.6%), but had higher starch contents (42.6% and 39.2%, respectively). Kabuli chick peas from 2009 had higher 100-seed weights than those in 2008 (35.6 g and 31.3 g, respectively), indicating a larger seed size for the 2009 crop. Water absorption values in 2009 for the chick peas, Kabuli, Canada Western No. 1 were similar to their 2008 counterparts (1.08 g H₂O/g seeds and 1.09 g H₂O/g seeds, respectively).

Table 2 – Mean protein content for 2009 western Canadian chick peas by grade¹

Grade	Protein content, %			
	2009			2008
	mean	min.	max.	mean
Saskatchewan				
Chick peas, Kabuli, Canada Western No. 1	22.0	21.4	23.2	24.6
Chick peas, Kabuli, Canada Western No. 2	19.0	19.0	19.0	24.1
Chick peas, Kabuli, Canada Western No. 3	20.7	20.7	20.7	23.7
All grades	20.8	19.0	23.2	24.1
Alberta				
Chick peas, Kabuli, Canada Western No. 1	21.9	21.9	21.9	-
Chick peas, Kabuli, Canada Western No. 2	-	-	-	23.6
Chick peas, Kabuli, Canada Western No. 3	-	-	-	-
All grades	21.8	21.6	21.9	23.6
Western Canada				
Chick peas, Kabuli, Canada Western No. 1	22.0	21.4	23.2	24.6
Chick peas, Kabuli, Canada Western No. 2	19.0	19.0	19.0	24.1
Chick peas, Kabuli, Canada Western No. 3	20.7	20.7	20.7	23.7
All grades	21.4	19.0	23.2	24.1

¹ Protein content (N x 6.25) is determined by near infrared measurement calibrated against the Combustion Nitrogen Analysis reference method.

Figure 2 – Mean protein content of western Canadian Kabuli chick peas

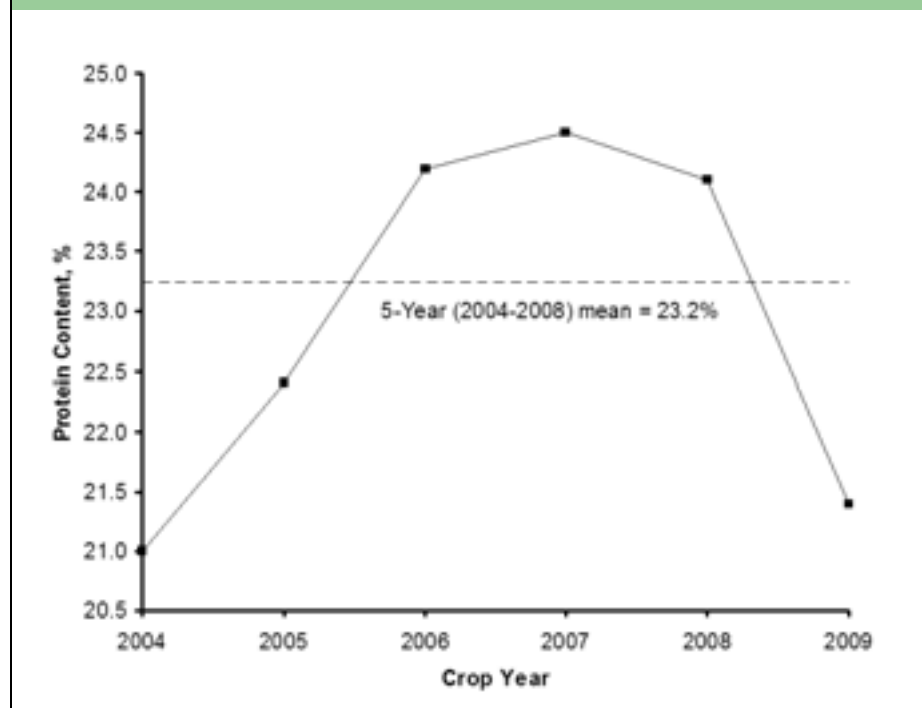


Table 3 – Quality data for 2009 western Canadian Kabuli chick peas

Quality parameter	Chick peas, Kabuli, Canada Western No. 1		Chick peas, Kabuli, Canada Western No. 2	
	2009	2008	2009	2008
Protein, % dry basis				
Number of samples	5	7	-	10
Mean	22.0	24.6	-	24.1
Standard deviation	0.7	1.9	-	1.4
Minimum	21.4	22.1	-	22.5
Maximum	23.2	27.6	-	27.0
Starch, % dry basis				
Number of samples	5	7	-	10
Mean	42.6	39.2	-	40.5
Standard deviation	2.1	2.9	-	2.6
Minimum	40.1	34.3	-	36.4
Maximum	45.2	42.1	-	43.3
100-seed weight, g/100 seeds				
Number of samples	5	7	-	10
Mean	35.6	31.3	-	32.1
Standard deviation	9.1	6.9	-	8.2
Minimum	24.9	22.5	-	36.4
Maximum	46.1	41.4	-	43.3
Water absorption, g H₂O/g seeds				
Number of samples	5	7	-	10
Mean	1.08	1.09	-	1.08
Standard deviation	0.04	0.03	-	0.06
Minimum	1.02	1.05	-	1.01
Maximum	1.11	1.13	-	1.19

Protein content (N x 6.25) is determined by near infrared measurement calibrated against the Combustion Nitrogen Analysis reference method.