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Quality of western Canadian peas 2025

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Table of Contents

Tables

Figures

Introduction

This report presents harvest quality data for yellow and green peas grown in western Canada in 2025. Pea samples were submitted to the Canadian Grain Commission's Harvest Sample Program by producers and grain companies. Quality data is compiled from the results of analytical tests performed in the Grain Research Laboratory.

Growing and harvesting conditions

Figure 1 and Figure 2 show the monthly mean temperature differences from normal in the Prairie region during the 2025 growing season (June and July). Figure 3 shows the total precipitation in the Prairie region from April 1 to October 31, 2025.

Figure 1 Mean temperature difference from normal in the Prairie region from June 1 to June 30, 2025

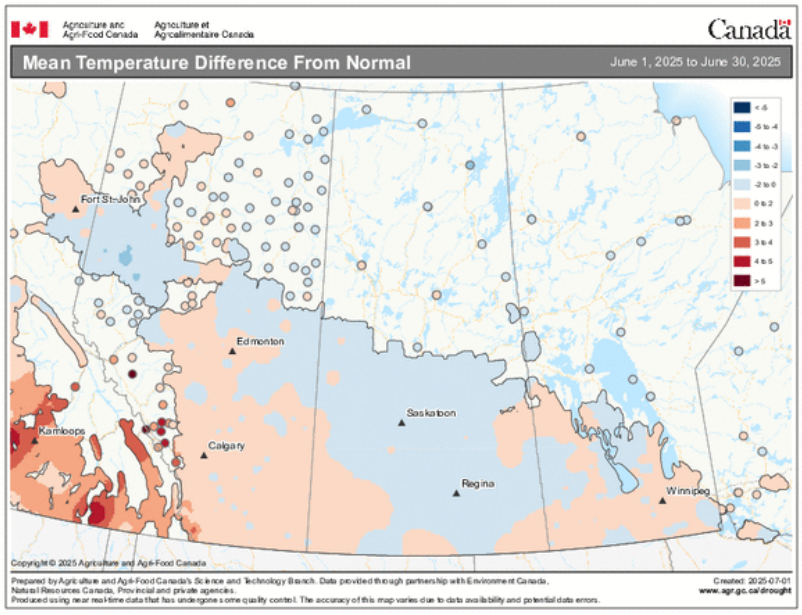


Figure 2 Mean temperature difference from normal in the Prairie region from July 1 to July 31, 2025

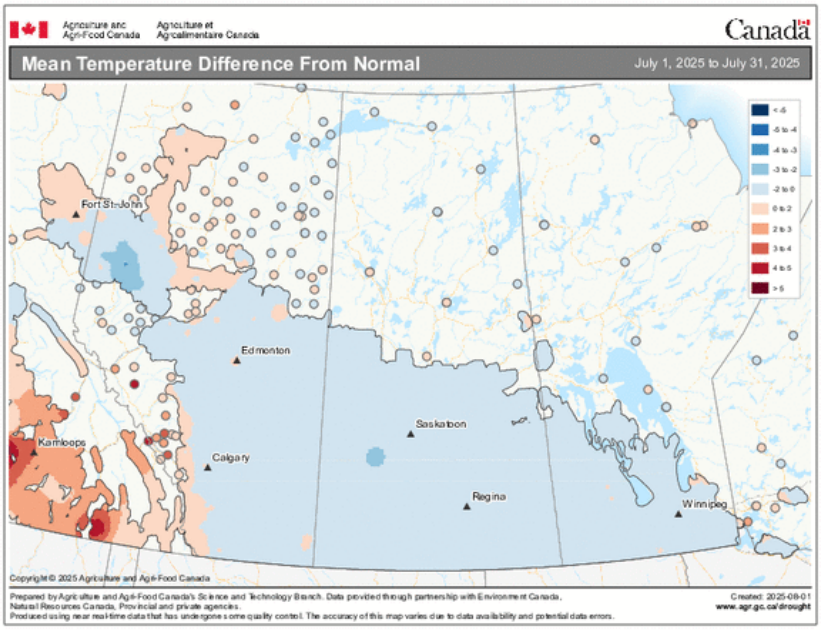
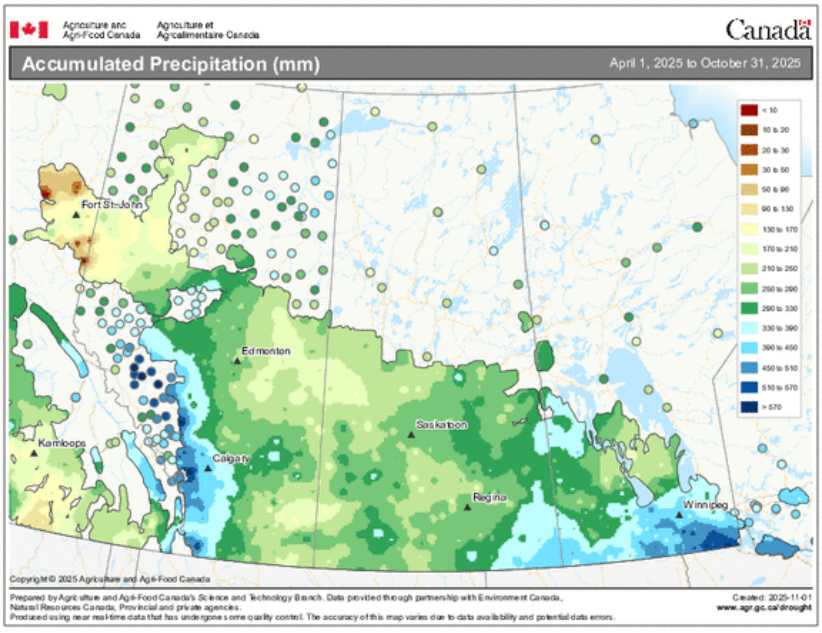


Figure 3 Total precipitation in the Prairie region from April 1 to October 31, 2025



In Alberta, seeding started in early May and was completed by early June. Warm temperatures advanced plant growth, but cool temperatures later in the season delayed crop maturity in northern areas and the Peace region (Figure 1 and Figure 2). Rainfall was also limited throughout the growing season in these areas (Figure 3). Overall, crop growing conditions were below the 5-year-average in the Peace region but were above average for other areas. The pea harvest began in early August and was completed by mid-September under good conditions.

In Saskatchewan, seeding started between late April and early May and was completed by mid-June. Conditions were dry early in the growing season but later in the season timely rains helped crops develop. The pea harvest began in late July and early August and was finished by mid-September. Due to low moisture levels (Figure 3) and agronomic challenges, crop yields in the southwest and northwest were lower than average. In other areas, yields were average to above average. Many peas were in the top two grades.

In Manitoba, warm, dry and windy conditions allowed seeding to begin in late April and be completed by late May. Precipitation varied across regions during the growing season (Figure 3). Drought stress in the Interlake region and some eastern areas caused crops to mature crops early and this negatively affected the filling of pods. The pea harvest occurred between early August and mid-September. Crop yields varied from below average to above average, depending on moisture conditions.

Production

Pea production in 2025 was estimated to be 3.9 million tonnes, which is approximately 31.6% higher than in 2024, and 10.0% lower than the 10-year average of 3.6 million tonnes (Table 1). The higher production is due to a 21.6% increase in yield and an 8.1% increase in harvested area compared to 2024. Alberta had the highest proportion of pea production (47.2%), followed by Saskatchewan (45.8%) and Manitoba (6.9%).

Table 1 Production statistics for 2025 western Canadian peas [1]

	Harvested area (thousand hectares)		Production (thousand tonnes)		Yield (kg/ha) [2]		Mean production (thousand tonnes)
Location	**2025**	**2024**	**2025**	**2024**	**2025**	**2024**	**2015–2024**
Manitoba	79	76	271	262	3,451	3,434	177
Saskatchewan	694	698	1,800	1,533	2,593	2,195	1,815
Alberta [3]	606	501	1,855	1,191	3,061	2,377	1,579
Western Canada	1,379	1,276	3,927	2,985	2,847	2,341	3,571

[1] Source: Statistics Canada.
[2] kg/ha = kilograms per hectare.
[3] Includes the Peace River area of British Columbia.

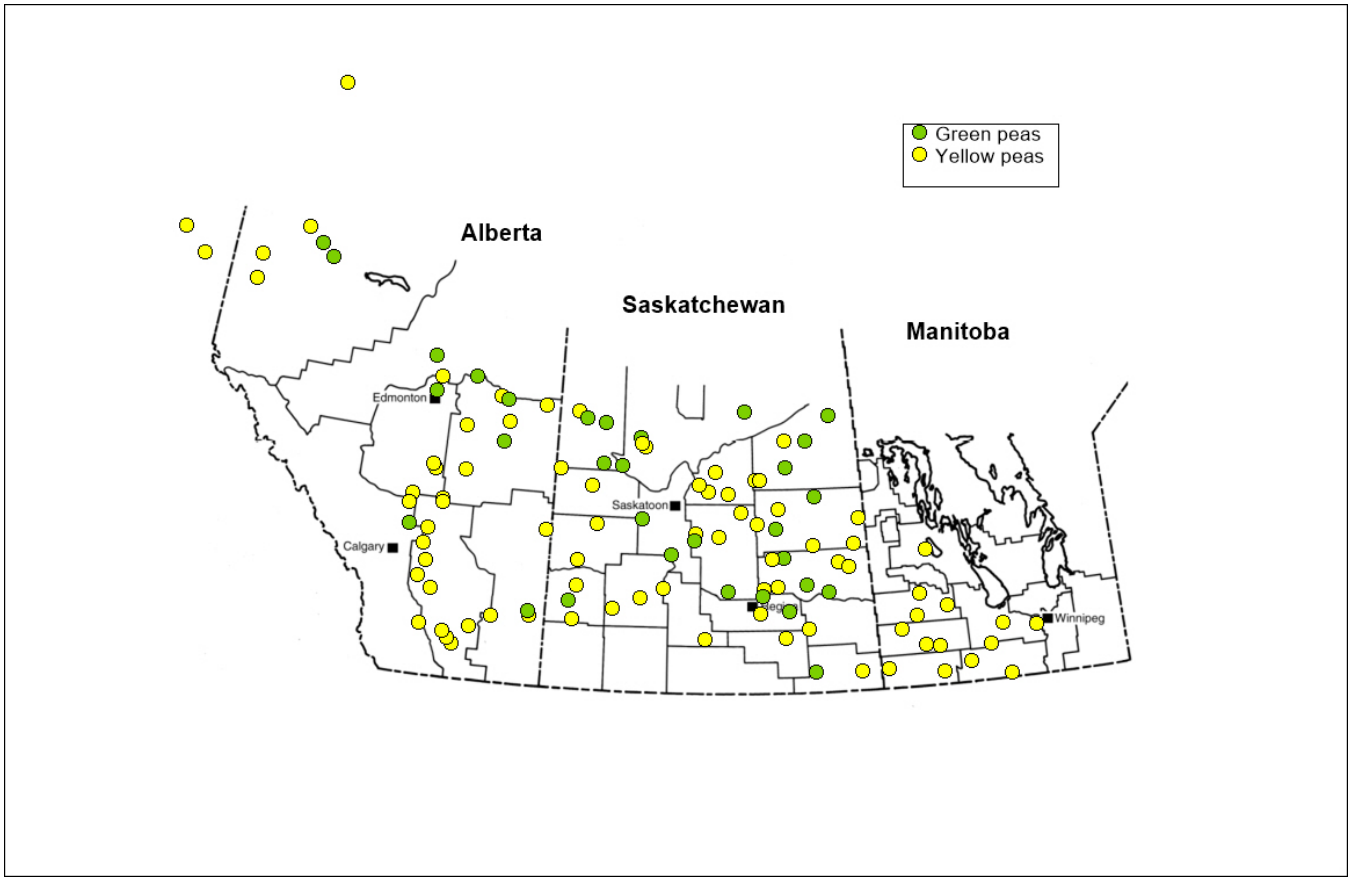
Harvest samples

Samples were submitted to the Canadian Grain Commission's Harvest Sample Program by pea producers and grain companies across western Canada (Figure 4). The program received 363 pea samples, consisting of 272 yellow pea samples and 91 green pea samples.

All samples were graded and analyzed for protein content. Composite samples were prepared based on class (yellow or green), crop region and grade (No. 1 or No. 2 Canada). All composites were tested for chemical composition (moisture, protein, starch, crude fat, total dietary fiber and ash content), mineral content, functional properties (water holding capacity and emulsifying capacity) and physical and cooking characteristics (100-seed weight and water absorption, cooking time and firmness of cooked peas).

The reported number of samples by grade does not necessarily represent the actual distribution of grades across western Canada.

Figure 4 Origin of 2025 pea samples received by the Canadian Grain Commission's Harvest Sample Program



Quality of 2025 western Canadian peas

Protein content

The protein content for yellow peas (Table 2) ranged from 18.2% to 27.8%, with a mean of 22.4%. For green peas, the protein content ranged from 20.6% to 26.0%, with a mean of 23.4% (Table 3). The mean protein content for each type of pea was lower than in 2024. In 2025, the mean protein content for yellow and green peas combined was lower than the 10-year mean of 23.4% (Figure 5). Table 4 and Table 5 contain the mean protein and starch values for yellow and green peas according to the applicable crop regions shown in Figure 6.

Yellow peas

Table 6 contains the 2025 quality data for yellow pea composites by grade. The protein content values for No. 1 yellow peas (21.8%) and No. 2 yellow peas (22.3%) were lower than in 2024. The total dietary fiber content was also lower for both grades. The starch content values for No. 1 yellow peas (48.1%) and No. 2 yellow peas (47.2%) were higher compared to 2024. The crude fat content was higher than in 2024 for both No. 1 and No. 2 yellow peas. The ash content values for both grades were similar to those in 2024.

Potassium was the most abundant macroelement present in yellow peas, followed by phosphorus, magnesium and calcium. Among the microelements, iron was the most abundant, followed by zinc, manganese and copper. The concentrations of most elements in No. 1 and No. 2 yellow peas were slightly lower than in 2024.

Compared to 2024, No. 1 and No. 2 yellow peas had greater water holding capacity values. Slightly lower oil emulsifying capacity values were recorded for No. 1 yellow peas (282.4 millilitres of oil per gram) and No. 2 yellow peas (284.3 millilitres of oil per gram).

The 100-seed weight values for No. 1 yellow peas (23.4 grams) and No. 2 yellow peas (22.1 grams) were higher than in 2024, while the water absorption values were lower.

Cooking time was shorter for No. 1 yellow peas (16.5 minutes) but longer for No. 2 yellow peas (18.6 minutes), compared to 2024. Cooked No. 1 yellow peas had firmer texture (23.3 newtons per gram), as did cooked No. 2 yellow peas (26.0 newtons per gram), compared to 2024.

Green peas

Table 7 contains the 2025 quality data for green pea composites by grade. The protein contents for No. 1 green peas (23.4%) and No. 2 green peas (23.3%) were lower than in 2024. The starch content values for No. 1 green peas (46.2%) and No. 2 green peas (45.8%) were higher than in 2024. Total dietary fiber showed a slight decrease for No. 1 green peas compared to 2024. Both grades of green peas had higher crude fat content (1.28% and 1.34%) but similar ash content compared to 2024. The trends in macroelement and microelement content in 2025 green peas were similar to those for 2025 yellow peas, with lower levels for elements such as calcium, iron, magnesium and phosphorus in No. 1 and No. 2 green peas compared to 2024.

The water holding capacity values of No. 1 green peas (0.93 grams of water per gram) and No. 2 green peas (0.92 grams of water per gram) were higher than in 2024, while the oil emulsifying capacity values for No. 1 green peas (279.6 millilitres of oil per gram) and No. 2 green peas (277.9 millilitres of oil per gram) were lower than in 2024.

The values for 100-seed weight for No. 1 green peas (23.4 grams) and No. 2 green peas (22.7 grams) were higher than in 2024. Seed water absorption values were lower than in 2024 for No. 1 green peas (0.84 grams of water per gram) and No. 2 green peas (0.76 grams of water per gram). Both grades of green peas had longer cooking times than in 2024, with 20.6 minutes for No. 1 green peas and 20.0 minutes for No. 2 green peas. The firmness values were also greater than in 2024 for cooked No. 1 green peas (23.0 newtons per gram) and cooked No. 2 green peas (22.4 newtons per gram).

Acknowledgements

The Grain Research Laboratory acknowledges the cooperation of western Canadian pulse processors, producers and grain companies in supplying the samples of newly harvested peas. We are also grateful to the following groups within the Canadian Grain Commission: Industry Services for assistance with grading the samples, the Pulse Research Program staff for technical assistance, the staff of the trace elements unit for mineral analysis, and Digital and Creative Communications for their assistance in the publication of this document.

Table 2 Protein content (%, dry basis) for 2025 western Canadian yellow peas by grade [1]

			2025			2024
Location	**Grade**	**Number of samples**	**Mean**	**Minimum**	**Maximum**	**Mean**
Manitoba	Peas, No. 1 Canada	5	21.3	18.9	24.2	23.9
	Peas, No. 2 Canada	14	21.3	18.8	24.0	22.2
	Peas, Extra No. 3 Canada	1	24.2	24.2	24.2	no data
	Peas, No. 3 Canada	5	21.7	20.8	22.8	24.4
	All grades	25	21.5	18.8	24.2	23.5
Saskatchewan	Peas, No. 1 Canada	34	22.2	19.5	27.2	25.2
	Peas, No. 2 Canada	72	23.1	18.8	26.3	25.5
	Peas, Extra No. 3 Canada	1	26.4	26.4	26.4	no data
	Peas, No. 3 Canada	30	22.5	19.2	27.8	26.6
	All grades	137	22.8	18.8	27.8	25.7
Alberta	Peas, No. 1 Canada	50	22.2	18.2	25.8	24.8
	Peas, No. 2 Canada	52	22.2	19.3	25.7	25.1
	Peas, Extra No. 3 Canada	1	23.2	23.2	23.2	no data
	Peas, No. 3 Canada	6	21.9	19.8	23.4	25.0
	All grades	109	22.2	18.2	25.8	25.0
Western Canada	Peas, No. 1 Canada	89	22.1	18.2	27.2	24.9
	Peas, No. 2 Canada	138	22.6	18.8	26.3	25.1
	Peas, Extra No. 3 Canada	3	24.6	23.2	26.4	no data
	Peas, No. 3 Canada	41	22.3	19.2	27.8	26.0
	All grades	271	22.4	18.2	27.8	25.2

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

Table 3 Protein content (%, dry basis) for 2025 western Canadian green peas by grade [1]

			2025			2024
Location	**Grade**	**Number of samples**	**Mean**	**Minimum**	**Maximum**	**Mean**
Saskatchewan	Peas, No. 1 Canada	12	23.6	21.8	25.5	25.6
	Peas, No. 2 Canada	26	23.4	21.4	26.0	25.7
	Peas, No. 3 Canada	11	23.0	20.6	25.9	26.5
	All grades	49	23.4	20.6	26.0	25.8
Alberta	Peas, No. 1 Canada	2	24.9	24.4	25.3	26.8
	Peas, No. 2 Canada	8	23.3	22.0	25.4	26.7
	Peas, No. 3 Canada	4	25.7	21.6	25.2	25.3
	All grades	14	23.7	21.6	25.4	25.8
Western Canada	Peas, No. 1 Canada	14	23.7	21.8	25.5	25.8
	Peas, No. 2 Canada	34	23.4	21.4	26.0	25.8
	Peas, No. 3 Canada	15	23.2	20.6	25.9	25.8
	All grades	63	23.4	20.6	26.0	25.8

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

Figure 5 Mean protein content (%, dry basis) of western Canadian peas from 2015 to 2025

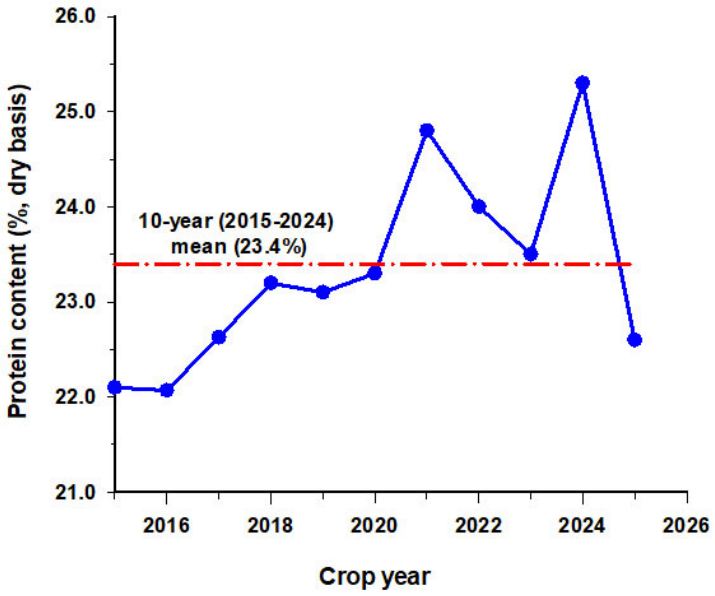


Figure 6 Crop regions in western Canada

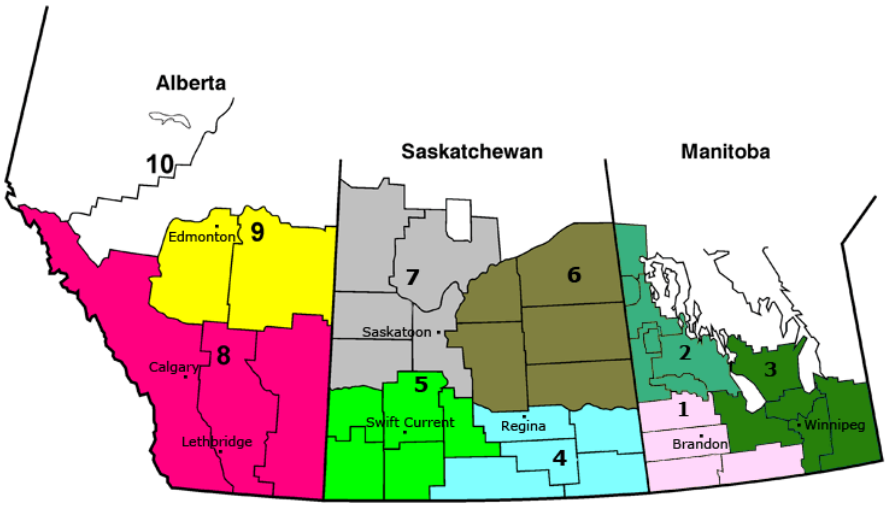


Table 4 Mean protein and mean starch content (%, dry basis) for 2025 western Canadian yellow peas by crop region

	Mean protein content		Mean starch content	
Crop region	**2025**	**2024**	**2025**	**2024**
1	20.7	23.4	50.9	46.1
4	23.5	26.0	48.4	44.5
5	22.8	27.0	46.8	45.0
6	22.0	23.9	47.9	46.2
7	22.4	24.5	45.6	45.1
8	22.0	26.4	46.5	45.9
9	21.8	23.6	47.6	46.3
10	21.9	23.3	47.9	46.9

Table 5 Mean protein and mean starch content (%, dry basis) for 2025 western Canadian green peas by crop region

	Mean protein content		Mean starch content	
Crop region	**2025**	**2024**	**2025**	**2024**
4	23.0	26.7	45.9	44.2
6	23.1	24.3	46.9	46.4
7	24.1	24.9	44.4	46.0
8	24.3	no data	45.9	no data

Table 6 Quality data for 2025 western Canadian yellow pea composites by grade

		Peas, No. 1 Canada		Peas, No. 2 Canada	
Category	**Quality parameter**	**2025**	**2024**	**2025**	**2024**
Chemical composition	Moisture, %	10.7	10.5	10.7	10.7
	Protein, %, dry basis	21.8	24.6	22.3	25.4
	Starch, %, dry basis	48.1	46.0	47.2	45.5
	Total dietary fiber, %, dry basis	14.9	16.0	14.8	16.8
	Crude fat, %, dry basis	1.22	1.04	1.10	1.04
	Ash, %, dry basis	2.7	2.6	2.7	2.7
Mineral content[1]	Calcium, mg/100 g sample[2]	84.6	90.9	89.7	89.6
	Copper, mg/100 g sample	0.62	0.71	0.68	0.71
	Iron, mg/100 g sample	5.0	5.3	5.4	5.7
	Potassium, mg/100 g sample	1,055.7	1,057.1	1,083.0	1,071.6
	Magnesium, mg/100 g sample	135.2	143.4	137.8	143.1
	Manganese, mg/100 g sample	1.4	1.3	1.4	1.3
	Phosphorus, mg/100 g sample	340.9	373.9	347.3	387.7
	Zinc, mg/100 g sample	3.4	3.7	3.5	3.9
Functional properties	Water holding capacity, g H_2O/g sample[3]	0.93	0.91	0.93	0.92
	Emulsifying capacity, ml oil/g sample[4]	282.4	299.4	284.3	297.2
Physical characteristics	100-seed weight, g/100 seeds[5]	23.4	20.1	22.1	19.7
	Water absorption, g H_2O/g seeds[6]	0.87	0.97	0.85	0.98
Cooking characteristics	Cooking time, min	16.5	18.3	18.6	17.5
	Firmness, N/g cooked seeds[7]	23.3	21.6	26.0	21.2

[1] On a dry matter basis.
[2] mg/g 100 g sample = milligrams per 100 grams of sample.
[3] g H_2O/g sample = grams of water per gram of sample.
[4] ml oil/g sample = millilitres of oil per gram of sample.
[5] g/100 seeds = grams per 100 seeds.
[6] g H_2O/g seeds = grams of water per gram of seeds.
[7] N/g cooked seeds = newtons per gram of cooked seeds (the maximum force required to shear cooked seeds).

Table 7 Quality data for 2025 western Canadian green pea composites by grade

		Peas, No. 1 Canada		Peas, No. 2 Canada	
Category	**Quality parameter**	**2025**	**2024**	**2025**	**2024**
Chemical composition	Moisture, %	10.6	10.7	10.7	10.5
	Protein, %, dry basis	23.4	25.7	23.3	26.1
	Starch, %, dry basis	46.2	45.1	45.8	45.3
	Total dietary fiber, %, dry basis	15.2	15.6	15.1	15.0
	Crude fat, %, dry basis	1.28	0.91	1.34	0.85
	Ash, %, dry basis	2.6	2.7	2.7	2.7
Mineral content[1]	Calcium, mg/100 g sample[2]	75.1	81.4	77.5	79.3
	Copper, mg/100 g sample	0.67	0.69	0.68	0.69
	Iron, mg/100 g sample	4.6	5.0	4.9	5.4
	Potassium, mg/100 g sample	1,063.5	1,053.2	1,077.6	1,074.7
	Magnesium, mg/100 g sample	134.6	138.4	132.7	140.3
	Manganese, mg/100 g sample	1.2	1.2	1.1	1.3
	Phosphorus, mg/100 g sample	302.2	363.6	333.5	387.2
	Zinc, mg/100 g sample	3.1	3.3	3.3	3.4
Functional properties	Water holding capacity, g H_2O/g sample[3]	0.93	0.90	0.92	0.91
	Emulsifying capacity, ml oil/g sample[4]	279.6	300.8	277.9	300.3
Physical characteristics	100-seed weight, g/100 seeds[5]	23.4	19.8	22.7	20.1
	Water absorption, g H_2O/g seeds[6]	0.84	0.90	0.76	0.94
Cooking characteristics	Cooking time, min	20.6	15.3	20.0	15.7
	Firmness, N/g cooked seeds[7]	23.0	22.0	22.4	20.7

[1] On a dry matter basis.
[2] mg/100 g sample = milligrams per 100 grams of sample.
[3] g H_2O/g sample = grams of water per gram of sample.
[4] ml oil/g sample = millilitres of oil per gram of sample.
[5] g/100 seeds = grams per 100 seeds.
[6] g H_2O/g seeds = grams of water per gram of seeds.
[7] N/g cooked seeds = newtons per gram of cooked seeds (the maximum force required to shear cooked seeds).