

## Properties of Commercially Pin Milled Yellow Pea<sup>1</sup> Flours

Flour Properties <sup>2,3</sup>		Split Flour		Whole Flour	
		Fine	Coarse	Fine	Coarse
Granulation:					
Special Crops Code:		SC006-12	SC005-12	SC004-12	SC003-12
Particle Size Distribution:					
	d (0.1) µm	5.8 ± 0.14 <sup>c</sup>	10.5 ± 0.52 <sup>b</sup>	8.9 ± 0.26 <sup>b</sup>	14.1 ± 0.51 <sup>a</sup>
	d (0.5) µm	25.3 ± 0.14 <sup>b</sup>	43.4 ± 5.52 <sup>b</sup>	31.5 ± 1.14 <sup>b</sup>	83.5 ± 11.93 <sup>a</sup>
	d (0.9) µm	112.5 ± 0.96 <sup>b</sup>	333.7 ± 100.52 <sup>b</sup>	298.1 ± 47.34 <sup>b</sup>	871.8 ± 48.11 <sup>a</sup>
	Volume Weighted Mean, µm	44.0 ± 0.35 <sup>b</sup>	130.0 ± 43.09 <sup>b</sup>	97.1 ± 11.81 <sup>b</sup>	276.8 ± 20.72 <sup>a</sup>
Composition <sup>4</sup> :					
	Protein, %	25.0 ± 0.03 <sup>a</sup>	25.0 ± 0.05 <sup>a</sup>	22.9 ± 0.17 <sup>c</sup>	23.5 ± 0.14 <sup>b</sup>
	Total Starch, %	52.9 ± 1.28 <sup>a</sup>	52.3 ± 0.51 <sup>a</sup>	46.8 ± 0.58 <sup>b</sup>	47.9 ± 0.71 <sup>b</sup>
	Total Dietary Fibre, %	7.3	7.9	15.3	15.3
	Soluble Fibre, %	0.7	0.8	1.2	1.2
	Insoluble Fibre, %	6.7	7.2	14.1	14.1
Pasting Properties:					
	Peak Viscosity, RVU	192.21 ± 4.65 <sup>a</sup>	189.63 ± 0.18 <sup>a</sup>	173.29 ± 0.65 <sup>b</sup>	168.96 ± 3.36 <sup>b</sup>
	Hot Paste Viscosity, RVU	173.30 ± 5.48 <sup>a</sup>	173.04 ± 1.47 <sup>a</sup>	130.71 ± 0.41 <sup>b</sup>	130.13 ± 1.48 <sup>b</sup>
	Breakdown, RVU	18.92 ± 0.83 <sup>b</sup>	16.59 ± 1.65 <sup>b</sup>	42.59 ± 0.23 <sup>a</sup>	38.84 ± 1.89 <sup>a</sup>
	Final Viscosity, RVU	339.04 ± 5.71 <sup>a</sup>	338.96 ± 8.43 <sup>a</sup>	181.54 ± 0.30 <sup>b</sup>	185.92 ± 1.77 <sup>b</sup>
	Setback, RVU	165.75 ± 0.24 <sup>a</sup>	166.22 ± 6.53 <sup>a</sup>	50.83 ± 0.71 <sup>b</sup>	55.79 ± 0.30 <sup>b</sup>
	Pasting Time, min	5.28 ± 0.14 <sup>a</sup>	5.25 ± 0.10 <sup>a</sup>	4.75 ± 0.04 <sup>b</sup>	4.69 ± 0.05 <sup>b</sup>
Functional Properties:					
	Starch Damage, %	1.50 ± 0.01 <sup>a</sup>	1.24 ± 0.04 <sup>a</sup>	1.35 ± 0.01 <sup>c</sup>	0.99 ± 0.03 <sup>b</sup>
	Water Absorption Capacity, g/g	1.04 ± 0.01 <sup>b</sup>	1.04 ± 0.01 <sup>b</sup>	1.31 ± 0.00 <sup>a</sup>	1.34 ± 0.01 <sup>a</sup>
	Oil Absorption Capacity, g/g	0.77 ± 0.01 <sup>c</sup>	0.82 ± 0.01 <sup>c</sup>	0.88 ± 0.00 <sup>b</sup>	0.99 ± 0.02 <sup>a</sup>
	Foam Stability, % 10 min	84.6 ± 8.15 <sup>a</sup>	82.8 ± 11.05 <sup>a</sup>	64.8 ± 7.86 <sup>a</sup>	78.3 ± 3.47 <sup>a</sup>
	30 min	69.3 ± 25.16 <sup>a</sup>	59.4 ± 22.10 <sup>a</sup>	51.9 ± 5.24 <sup>a</sup>	58.2 ± 0.66 <sup>a</sup>
	60 min	61.4 ± 22.61 <sup>a</sup>	54.7 ± 19.88 <sup>a</sup>	46.3 ± 2.62 <sup>a</sup>	40.5 ± 13.42 <sup>a</sup>
	120 min	47.2 ± 15.34 <sup>a</sup>	37.5 ± 26.52 <sup>a</sup>	31.5 ± 7.86 <sup>a</sup>	27.5 ± 4.69 <sup>a</sup>
	Foam Capacity, %	21.0 ± 4.24 <sup>a</sup>	18.0 ± 2.83 <sup>a</sup>	13.0 ± 1.41 <sup>a</sup>	15.0 ± 7.07 <sup>a</sup>
	Emulsifying Activity, %	43.8 ± 5.16 <sup>a</sup>	44.9 ± 1.07 <sup>a</sup>	36.5 ± 0.84 <sup>a</sup>	35.8 ± 2.67 <sup>a</sup>
	Emulsifying Stability, %	13.4 ± 4.87 <sup>a</sup>	18.4 ± 0.00 <sup>a</sup>	16.7 ± 7.86 <sup>a</sup>	9.1 ± 4.88 <sup>a</sup>
Colour:					
	L*	74.8 ± 0.00 <sup>b</sup>	75.2 ± 0.01 <sup>a</sup>	73.5 ± 0.00 <sup>d</sup>	73.5 ± 0.01 <sup>c</sup>
	a*	3.15 ± 0.01 <sup>a</sup>	3.10 ± 0.01 <sup>a</sup>	1.27 ± 0.01 <sup>b</sup>	1.26 ± 0.01 <sup>b</sup>
	b*	39.0 ± 0.00 <sup>b</sup>	39.3 ± 0.01 <sup>a</sup>	35.7 ± 0.01 <sup>c</sup>	35.7 ± 0.00 <sup>d</sup>

<sup>1</sup> Variety: CDC Meadow.

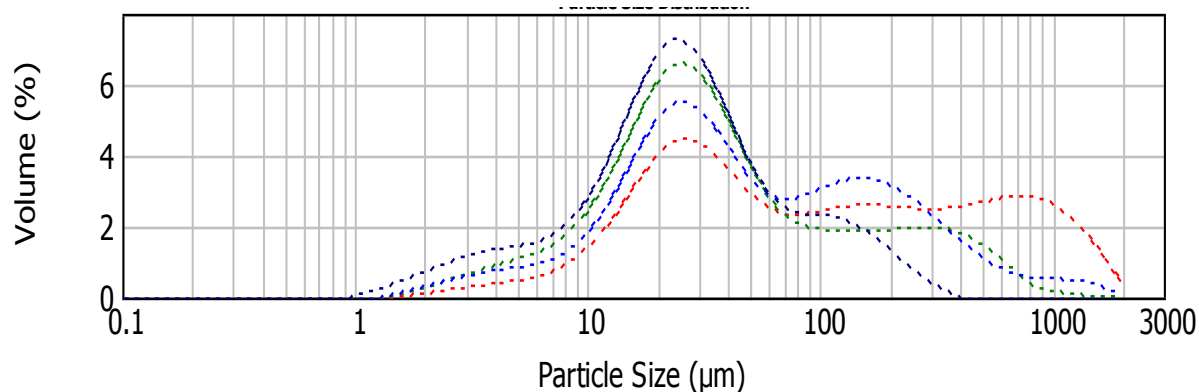
<sup>2</sup> For explanation of testing methodology refer to Glossary of Analytical Terminology.

<sup>3</sup> Values with the same letter within a row are not significantly different (p < 0.05). Significant differences for fibre not established.

<sup>4</sup> Dry weight basis.



## Particle Size Distribution Curves for Commercially Pin Milled Yellow Pea Flours



- Whole Yellow Pea Flour- Coarse
- Whole Yellow Pea Flour- Fine
- Split Yellow Pea Flour- Coarse
- Split Yellow Pea Flour- Fine

### CONTACT US

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### Project Partners and Funders



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