

Chopin Alveograph Guide

The Chopin Alveograph is a test commonly used overseas to help determine the baking potential of wheat by measuring its characteristics.

Using air pressure to inflate a thin sheet of dough, a large bubble is blown until it bursts. The Chopin Alveograph indicates how suitable the wheat is by measuring how much pressure and how much time it takes to cause the dough bubble to burst.

Every year, AHDB Cereals & Oilseeds tests over 1,000 samples of wheat using the Chopin Alveograph test to provide growers with information on quality performance to assist them with variety selection through the Recommended List.

This test gives a clear indication of end use potential to overseas buyers to ensure that the wheat exported consistently meets the export specification.



The Importance of the Chopin Alveograph in the Export Market

The Chopin Alveograph is used by flour millers and others engaged in export markets, to indicate the suitability of their offerings towards making bread or biscuits and to get early indications of the resultant flour quality. The key measures used are the ratio of P to L and the W value (see next page for more details).

The test is used to determine which varieties on the Recommended List are classified as suitable for export and are given either **ukp** or **uks** rating. **ukp** and **uks** are the classifications used to market UK wheat overseas.

Specifications	ukp	uks
Specific weight	76 kg/hl (min)	75 kg/hl (min)
Moisture content	14%	14%
Ad mix	2% (max)	2% (max)
Hagberg Falling Number (s)	250 (min)	220 (min)
Protein	11–13%	10.5–11.5%
W	170 (min)	70–120
P/L	0.9 (max)	0.55 (max)

When buying milling wheat, many overseas buyers will demand a Chopin Alveograph specification in addition to the standard measures of protein, Hagberg Falling Number, specific weight and moisture, irrespective of its origin.

Other tests such as Brabender Farinograph, Extensograph and wet chemistry tests such as Zeleny can also be used to provide an assessment of protein quality.

In general the protein quality, and thus the Chopin Alveograph values, are inherent in a variety and are not greatly affected by environmental conditions or crop treatments. This factor makes varietal purity at sowing and varietal segregation in store of key importance when supplying to meet overseas customers' requirements.

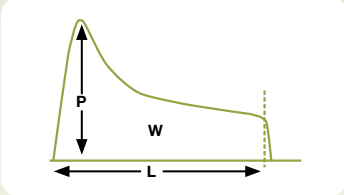
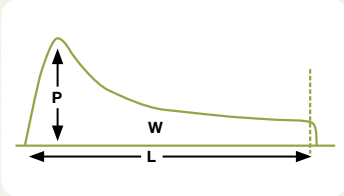
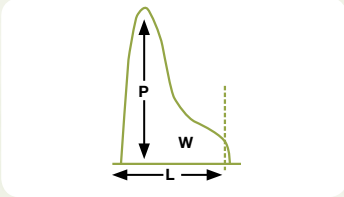
uks (soft milling wheat) is highly sought after by overseas millers, as it has low protein, high extensibility and low water absorption. The low protein level makes it easy to use across a range of biscuit making recipes, including wafers.

How does the Chopin Alveograph work

What the graph means

W =	L =	P/L =
Energy used to blow up the bubble. High W means it's a strong flour.	Extensibility of dough (time taken for bubble to burst).	Dough strength and extensibility. Low P/L means very extensible and low strength (ratio of curve height to length).
G =	P =	
Index of swelling (size of the bubble).	Maximum pressure required to burst the bubble.	

Typical characteristics of different wheat varieties

ukp	<p>Suitable for bread flour – makes strong elastic dough and has excellent breadmaking potential.</p> <ul style="list-style-type: none"> • High pressure (P) • Long time (L) to burst. 		<p>Typical range Alveograph P/L <0.9 Alveograph W >170</p>
uks	<p>Suitable for biscuit and blending flours – makes extensible dough, good for biscuits and blending with strong wheats.</p> <ul style="list-style-type: none"> • Low pressure (P) and long time (L) gives a lower P/L • Area under the curve (W) less critical. 		<p>Typical range Alveograph P/L <0.55 Alveograph W 80–120</p>
feed wheat	<p>Suitable for animal feed only – makes tough, inelastic dough.</p> <ul style="list-style-type: none"> • High pressure (P) • Short time (L) to burst. 		<p>Typical range Alveograph P/L 0.3–1.5 Alveograph W 60–140</p>

Five stages of the Chopin Alveograph test

Stage 1

Wheat conditioned to standard moisture.

Stage 2

Wheat milled and left to rest.

Stage 3 & 4

Dough produced and formed into a disc.

Stage 5

Air is pumped into dough to test resistance and elasticity.



Chopin Alveograph showing stage 5 – air being pumped into dough.