

# THE INFLUENCE OF EXTRUDED SUGAR BEET PULP ON COOKIES' COLOUR

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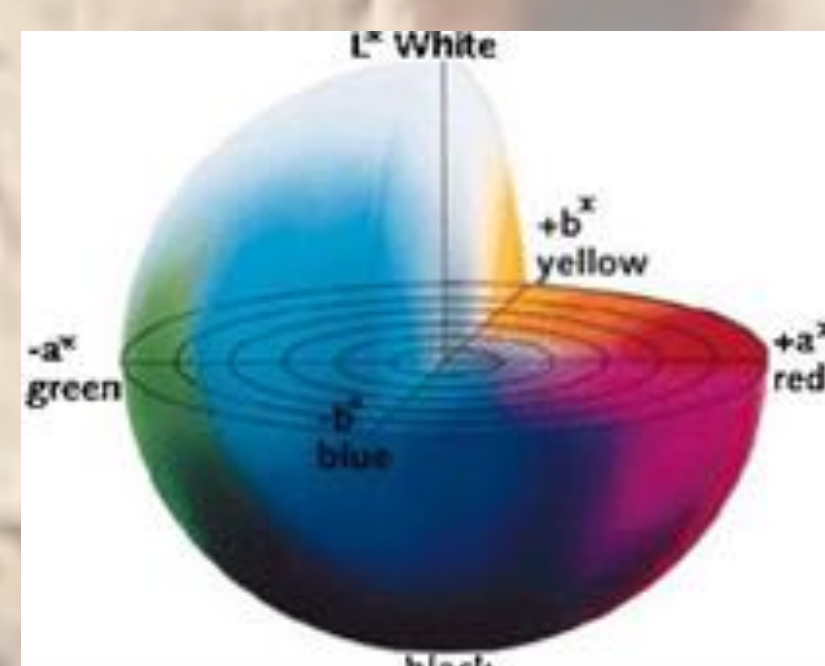
Wheat flour is replaced with extruded sugar beet pulp (SBPEs) in the amount of 5, 10 and 15% during the production of cookies. The influence of the percentage of sugar beet pulp in the SBPEs (15, 30 and 45), the size of the SBPE particles (<250 µm, 250-1000 µm and 1000-2000 µm) and the percentage of wheat flour substituted with SBPEs on the cookies' colour was examined using a MINOLTA Chroma Meter CR-400.



Extrusion,  
Milling,  
Sieving



5%  
10%  
15%



Sample	The size of the extrudate particles in the mixture (µm)	Percentage of sugar beet pulp in the extrudate (%)	Percentage of wheat flour substituted with extrudate (%)	L*	a*	b*
1.15.10	< 250 (1)	15	10	79.04	2.20	24.43
3.15.10	1000-2000 (3)	15	10	79.57	0.08	19.86
1.45.10	< 250 (1)	45	10	77.90	0.81	19.29
3.45.10	1000-2000 (3)	45	10	80.20	0.19	20.10
1.30.5	< 250 (1)	30	5	80.66	0.54	20.75
3.30.5	1000-2000 (3)	30	5	81.62	0.24	21.56
1.30.15	< 250 (1)	30	15	75.27	1.53	22.18
3.30.15	1000-2000 (3)	30	15	80.20	0.21	21.34
2.15.5	250-1000 (2)	15	5	80.94	1.00	23.24
2.45.5	250-1000 (2)	45	5	79.66	0.31	20.62
2.15.15	250-1000 (2)	15	15	77.09	0.38	18.87
2.45.15	250-1000 (2)	45	15	81.65	0.43	20.93
2.30.10	250-1000 (2)	30	10	79.83	0.13	18.18
2.30.10	250-1000 (2)	30	10	78.96	0.06	18.52
2.30.10	250-1000 (2)	30	10	79.29	0.01	17.74
Control				79.27	0.09	22.31

As the particle size of the extrudate increased, the colour of cookies surface became darker, however, with the increase in the proportion of extrudate in cookies, the L\* value decreased. Although the addition of sugar beet pulp in bakery products can lead to a decrease in parameters a\* and b\* the cookie samples with SBPEs had positive a\* values and b\* values similar to the control cookie sample.

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