

Experiment 9: First in the oven

The principle:

The research, that is done earlier this year by the students, pointed out that bread can absorb less oil if there is less water in bread. If you put the Mandazi in the oven first, it will already be baked when it comes out. The inside and outside is hard. So the Mandazi has probably less fat if you fry it after baking.

Method:

Step 1: Let the yeast dissolve in the lukewarm water.

Step 2: Sieve the sugar, flour, salt, bread improver and baking powder into a bowl.

Step 3: Put the lukewarm water with yeast and the oil in the same bowl as the flour and the other things. Put also the yellow coloring in the bowl.

Step 4: Mix all the ingredients 15 minutes till you have a good mixed dough.

Step 5: Roll the dough out and cut out pieces of 40 grams for a little Mandazi or 115 grams for a big Mandazi.

Step 6: Let the dough balls rest for 45 minutes.

Step 7: Put the dough balls on a baking tray and put this in the oven for 20 minutes on 200 degrees.

Step 8: Put the Mandazi out the oven and put a pan with oil on a fire. Wait till the oil is 190 degrees.

Step 9: Put the Mandazi in the oil and fry the Mandazi for about 10 seconds.

Step 10: Take the Mandazi out.

Results

Experiment	Start weight (grams)	Weight after the oven (grams)	Weight after frying (grams)	Na oven (Dry weight)
Oven 22 min	40	36		
Oven 22 min	40	38		
Oven 22 min	40	37		
Oven 22 min	40	37		
Oven 22 min, 10 sec frying	40	36	37	25
Oven 22 min, 10 sec frying	40	37	38	25
Oven 22 min, 10 sec frying	40	37	38	25
Oven 22 min	40	39		
Oven 22 min	40	37		
Oven 22 min, 10 sec frying	115	108	109	75

Oven 22 min, 10 sec frying	115	110	112	72
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Small

Dry weight:

X1 average = 40 grams/mandazi

X2 average = 22,4 grams/mandazi

Water in a mandazi before frying = $X1 - X2 = 40 - 22,4 = 17,6$ grams water/mandazi

After frying:

Y1 (weight after frying) average = 36,7 grams/mandazi

Y2 (weight after drying) average = 25 grams/mandazi

Water in a mandazi after frying = $Y1 - Y2 = 36,7 - 25 = 11,7$ grams water/mandazi

Water that evaporates during frying = $17,6 - 11,7 = 5,9$ grams water/mandazi

Amount of fat = $Y2 - X2 = 25 - 22,4 = 2,6$ grams fat/mandazi

$$\frac{\text{Amount of fat}}{\text{Total weight mandazi}} \times 100\% = \frac{2,6}{36,7} \times 100\% = 7,08\% \text{ fat}$$

Big

X1 average = 115 grams/mandazi

X2 average = 66 grams/mandazi

Water in a mandazi before frying = $X1 - X2 = 115 - 66 = 49$ grams water/mandazi

Y1 average (weight after frying) = 110,5 grams/mandazi

Y2 average (weight after drying) = 73,5 grams/mandazi

Water in a mandazi after frying = $Y1 - Y2 = 110,5 - 73,5 = 37$ grams water/mandazi

Water that evaporates during frying = $49 - 37 = 12$ grams water/mandazi

Amount of fat = $Y2 - X2 = 73,5 - 66 = 7,5$ grams fat/mandazi

$$\frac{\text{Amount of fat}}{\text{Total weight mandazi}} \times 100\% = \frac{7,5}{110,5} \times 100\% = 6,7\% \text{ fat}$$

First in the oven	Soft outside, tastes like bread, not greasy
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