Development of Khaomak Ice Cream

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ABSTRACT

To objectives of this research were to study the kinetic of Khaomak during the fermentation process and todevelop the new style of sherbet, which consists of Khaomak and strawberry. To produce Khaomak, starter culture in from of starch ball is used to ferment the glutinous rice at 30 ℃ and 35 ℃ for 4 days. Results indicated that incubation temperature had significant effect on L*, a* and b* values ($p<0.05$). The effect of sucrose addition on the physico-chemical properties of Khaonak and strawberry sherbet was investigated. Increase in sucrose resulted in increase in total soluble solid, viscosity, melting weight and decrease in overrun, L* ,a* and b* values of the Khaomak and strawberry sherbet ($p<0.05$). The sensory evaluation pointed out that the Khaomak and strawberry sherbet with sucrose 3% gained that highest hedonic score.

OBJECTIVE

- To study the kinetic of Khaomak during the fermentation process.
- To develop the new style of sherbet which consists of Khaomak and strawberry

INTRODUCTION

Khaomak is an ancient Thai traditional dessert.
Khaomak & strawberry sherbet is new taste of ice cream, which has a palatable taste and health benefits.

Glutinous rice

Lookpang

Khaomak

Mold : *Amylomysec rouxii*
Yeast : *Endomycopsis fibiulgera*
Hansanula anomala

Alcohol
Glucose
Probiotic

MATERIALS & METHODS

1 Khaomak

- Soak in water for 6 hour.
- Drain and Steam
- Cool down
- Wash and drain
- Add Lookpang
- Incabate at room temperature(30℃) and 35 ℃ during fermentation for 4 days (Suttida Sonthisawate,2015)

2 Khaomak & Strawberry Sherbet preparation

Ingredients

- Khaomak	44	%
- Water	32.5	%
- Strawberry	11	%
- Skim milk powder	1	%
- Sucrose	3	%
- Dextose	3	%
- Maltodextrin	3	%
- S/E	0.2	%
- Citric acid	0.2	%
- Shortening	2	%
- Salt	0.1	%

3 Physical characteristic determination

- pH
- Total soluble solids
- Color
- %Overrun
- Viscosity
- Melting rate

4 Sensory evaluation

9 – point hedonic scale test

RESULTS AND DISCUSSION

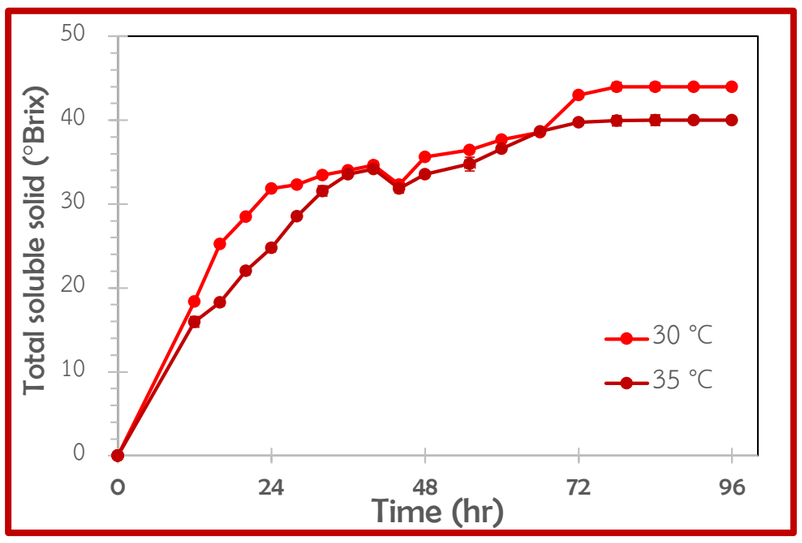

Fig 1 Change in total soluble solid of Khaomak during fermentation for 4 days.

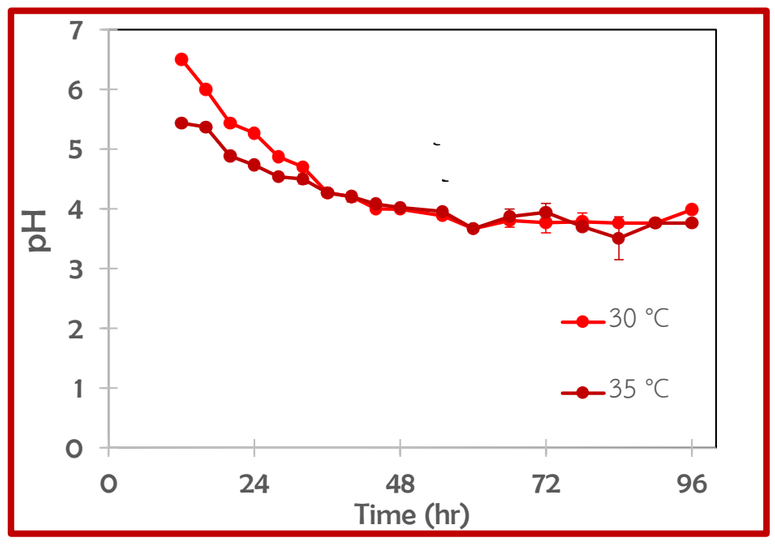

Fig 2 Change in pH of Khaomak during fermentation for 4 days.

Table 1 Color of Khaomak

Khaomak	Incubation Temperature (℃)	Color		
		L*	a*	b*
Rice	30	72.81±0.22^{a}	-2.21±0.20^{d}	11.35±0.29^{b}
Rice	35	65.68±0.00^{b}	-0.62±0.00^{a}	14.74±0.01^{a}
Juice	30	15.53±0.93^{d}	-0.56±0.03^{b}	-4.95±0.43^{d}
Juice	35	25.98±0.06^{c}	-1.28±0.05^{c}	-3.75±0.01^{c}

Table 2 Physical characteristic of Khaomak & strawberry sherbet

Sucrose (%)	Color			TSS (°Brix)	Viscosity (cP)	pH	Overrun %
	L*	a*	b*				
0	57.33±0.21^{a}	25.84±0.81^{a}	8.36±0.29^{a}	25.53 ±1.03^{d}	969.33±32.13^{c}	3.64 ±0.01^{b}	15.38±0.01^{a}
3	56.24±0.08^{b}	25.23±0.16^{a}	7.41±0.08^{b}	29.20±0.78^{c}	1404.33±181.49^{b}	3.67±0.00^{a}	13.12±0.01^{b}
6	56.65±0.48^{ab}	23.19±0.93^{b}	7.13±0.29^{b}	33.13 ±0.21^{b}	1478.33±181.49^{ab}	3.65 ±0.01^{b}	10.12±0.01^{c}
12	54.28±0.06^{c}	21.18±0.41^{c}	6.35±0.48^{c}	36.67±0.35^{a}	1660.00±71.90^{a}	3.62±0.01^{c}	9.36±0.01^{d}

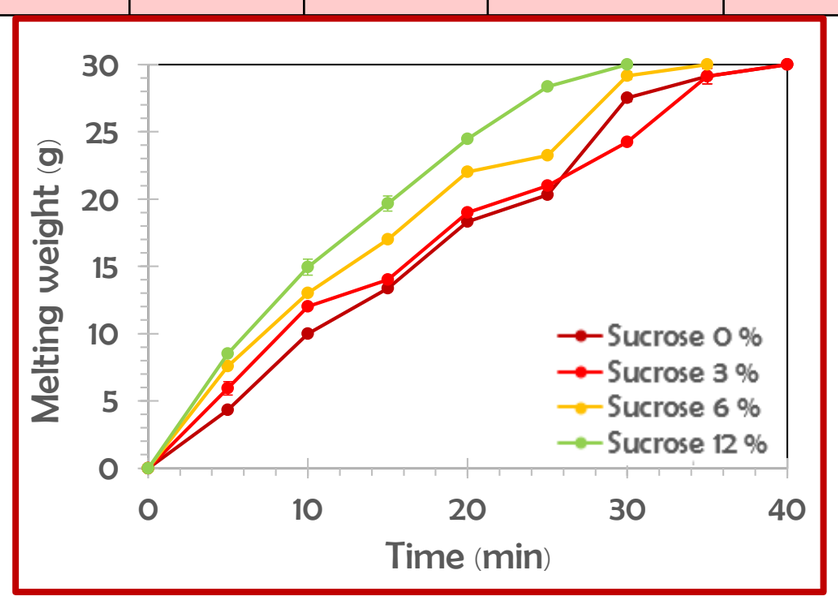

Fig 3 Melting weight of Khaomak & strawberry sherbet

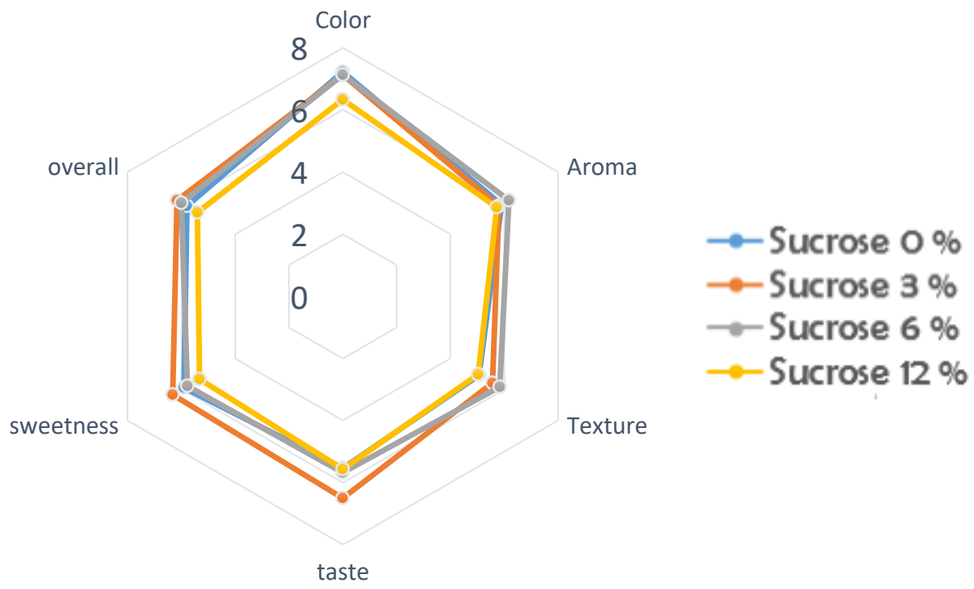

Fig 4 Sensory evaluation of Khaomak & strawberry sherbet

CONCLUSIONS

As the incubation temperature increased, a* and b* values of Khaomak rice also in increased but, L* value decreased. Khaomak & strawberry sherbet with 3% sucrose received the highest overall liking score. Increase in sucrose resulted in increase in total soluble solid, viscosity, melting weight and decrease in overrun, L*, a* and b* values of the Khaomak and strawberry sherbet ($p<0.05$).

REFERENCE

Suttida Sonthisawate and Walairut Chantarapanont.(2015).Study Optimum ratio of major Bioscience ingredients In Khaomak yogurt ice cream.Food and Applied Journal.3,10-20