

week 2

- why \rightarrow ? Fructose is sweeter.
less amount gives same sweetness, costs \downarrow

Solubility & Crystallization

$T \uparrow$, Solubility \uparrow $T \downarrow$, mixture is supersaturated.
Crystallization is observed

100m L water

$$\text{Glu} + \text{fru} + \text{H}_2\text{O} \xrightarrow[\text{and catalyst}]{T} \text{Glu} + \text{fru}$$

Sucrose invert sugar

kann (nicht) karyotrope

Sucrose
Baklava şekerini yaparken kesme şekeri yerine inulin (sığirt) kullanılır. Bu şekerden süzme şekerini elde ederler. Bu şekerin yapısında şekerli şekerler bulunur. Şekerli şekerler şekerli şekerlerdir.

Honey → crys. var. $T \uparrow$ / solv \uparrow no crys.

determines shell life.

determines shell life.
 $w_a > 0.6$, molds grow in the water.
 0.6 water

$w_a > 0.6$, more water
 < 0.6 does not mean %60 water

- $a_w > 0.6$, mold
 $a_w > 0.6$ does not mean %60 water
 - Sugar molecules bind water, $a_w \downarrow$, water vaporization \downarrow
 - product composition (fat or no fat), sugar comp. (glu, fru --), mol weight,
 temp, texture (apple potato
 dohle daho yegon), humidity of env.

Sweetness

Sucrose → takes time to detect on the tongue. Daha uzun süre tatlı
Fructose → Sweetness quickly, fades ↑
Corn syrup → slow to taste, half sweet of sucrose, ^{much} longer

Sweetness

Sucrose	100
Corn syrup	30-50
Fructose	120
glucose	70

Fructose → hemen kaybolup orke-
plandaki tatlıları meskenemede için
kullanılıyor.

Sugar Alcohol

Not sweet as sucrose

- Ağzıdan ferahlık (endotermik reaksiyon)
- Ağız bakterileri bununla beslenemediği için dış salgısına zarar yok.
- Emilimi az. Çok tüketimde ishal.
- Karamelize ve kahverengi olur!

Isomalt

- half energy of sugars
- no tooth decay
- does not stimulate release of insulin. Doğal
- a sugar substitute
- 20-30g → diarrhea

Splenda / Sucralose

- Artificial
- 1g → 3.36 kcal, serving size has bulking agents → 10.8 kcal
- < 5 kcal means 0 kcal.
- 600 times sweeter than sucrose.

Aspartame

~200 times sweeter than sucrose

- Artificial

- Amino acid + phenylalanine

- Aspartame and phenylalanine can be found in food based resources

And they far exceeds aspartame

- Can produce methanol. → zero. But the dose is poisonous (127 can of coke/day)

Acesulfame Potassium

~200 times

- Blended with sucralose to decrease bitter taste of aspartame

- Got sweeter.

- Not consumed by the body

- Yerkes-Little. Labda bulimugor.

Saccharin

- No energy

~300, 400 times

- metallic aftertaste.

Stevia

- Dose

- 30-150 times

- yet stronger, zero, topraga gure

Brown Sugar

- Due to presence of molasses (feker kamur, reles)

Maple Syrup

- Primarily sucrose with some glucose and fructose

- Canada

- 66% at least sugar

Coke

normal \rightarrow 140 calories, sugar (high fructose corn syrup)

diet \rightarrow 0 kcal, Aspartame

zero \rightarrow 0 kcal, either sucralose, acesulfame K or aspartame

zero \rightarrow looks and tastes more like Coca-Cola

diet \rightarrow different blend of flavours, lighter.

\rightarrow first sugar free cola.

Caramelization

Sugar + heat \rightarrow caramel

- generally made with table sugar.

Sucrose \rightarrow glucose + fructose \rightarrow new molecules
new taste

Sugar + water $\xrightarrow[\text{water boiled off}]{\text{heat until}}$ molten sugar

\rightarrow to protect from burning

\rightarrow prolongs the cooking period \rightarrow more reactions \rightarrow more flavor

HMF

- indication of overheating, stored in poor cond., higher age of honey.

- honey 1kg \rightarrow 80-40mg HMF

- It is both good and bad. \rightarrow

Pekmez

- Grape
To decrease acidity, pekmez toprağı (30% carbonate) is added.
and boiled 10-15 min. Left for separation of sediment 4-5 hours.

pekmez earth + tartaric acids \rightarrow decrease acidity
malic

herkümü ile pekmez toprağı alınıyor. (Pekmez toprağı yoğunluğu fazla)
dibe aslıyor

- 250 gr acıkt yapılırsa 400mg HMF, vatandaş kütuda yapılırsa 35mg HMF

Myths and Facts

Myth

- Corn syrup syntetice

- Corn syrup and batlava syrup is different

- fructose has 5 carbon like alcohol

- Ciger siste glycogen var

- All sweeteners have ↑ glycemic index

- No risk factor in homemade jam

Sugar free → healthy
no refined sugar → healthy

Fact

- Natural. Hydrolyzation of starch

- Almost same

- 6 carbons. Alcohols have 2 carbons

- Glycogen is depleted after slaughtering

- Few of them.

- HMF → jams

- Clostridium botulinum → canned foods

Improper make

apple juice contains sugar too
date syrup contains //