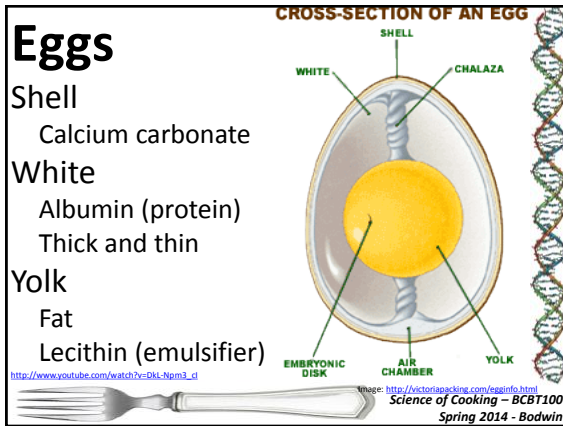
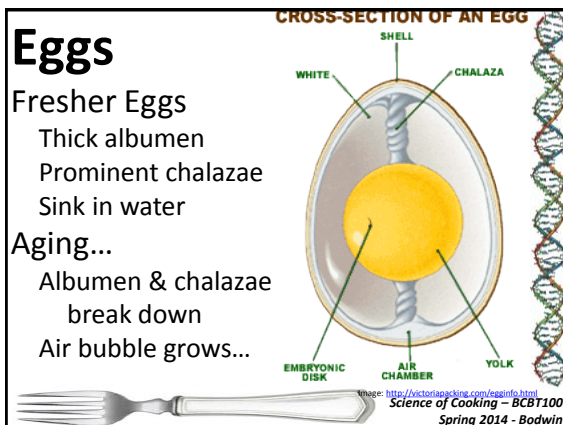
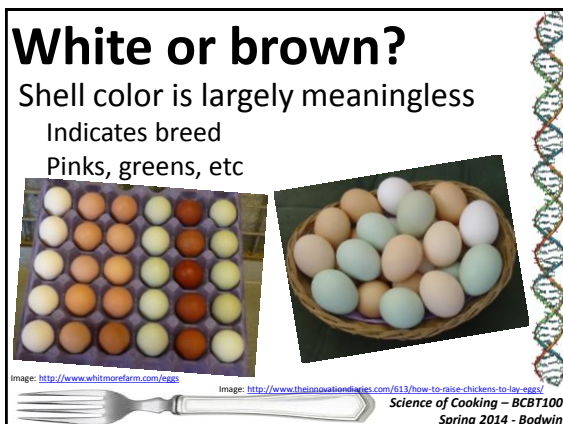








Eggs and Chickens

"Indeterminate layers"

~25 hour cycle (industrial)

200-300 eggs per year

2-3 year laying "lifetime"



image: <http://www.motherearthnews.com/Sustainable-Farming/Best-Chicken-Breeds-For-Backyard-Flocks.aspx>

image: <http://organicconnecting.com/eggs-are-there-dub-in-your-chicken-dinner/#UG2MCU3y9s>

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Eggs

Yolk

Fat, food

White

Shock absorber

Shell

Protection

CROSS-SECTION OF AN EGG

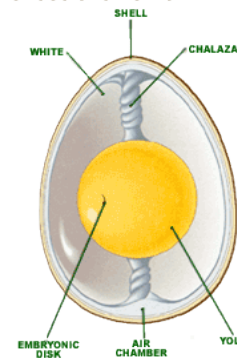


image: <http://victoriacooking.com/egginfo.html>

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Cooking with Eggs

Consider composition

White = protein + water

"Cooking" denatures protein

Yolk = protein + fat

and all the other nutrients...



image: <http://whatscookingamerica.net/Eggs/BoiledEggs.htm>

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Egg Whites – Whip It!

Foams – Meringue (albumin only)

Review micelles – water/air interface

Similar in concept to whipped cream or yogurt curdling

Mechanical shearing of protein bundles

Soft foam – water lubricates bubbles

Hard/Stiff/Dry peaks – protein bubble walls squeeze out excess moisture



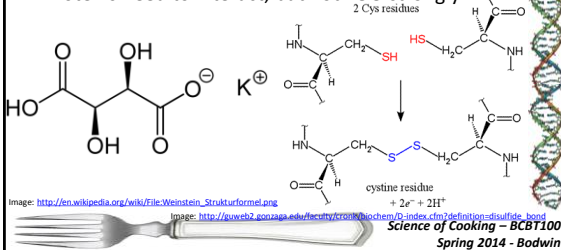
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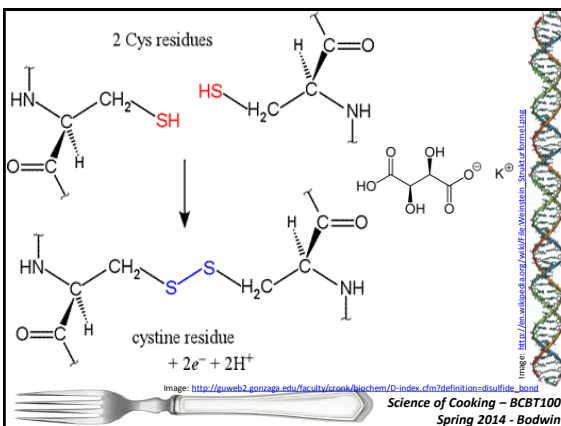
Cream of Tartar

Potassium tartrate – adds acid

Prevents disulfide bond formation

Proteins need to interact, but not TOO strongly





Setting White Foams

Heating dehydrates

Ovalbumin denatures at higher T

Secondary network, reinforces

Role of sugar

Strengthens "cages" with sugar strands

Delays dehydration (ovalbumin denature)



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Whipped yolks

Fat prevents foam

A little yolk ruins a meringue

Air bubbles lighten color

Low "free" water content

The beginnings of a custard

Network of egg proteins

Suspends milk fat



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Whipped Whole Eggs

Not as fluffy as whites

Not as silky as yolks

Will they foam?



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Cooking Eggs

Balance of fat, protein, water, air

Water – high heat capacity

Fat – solidifies, liquifies, separates

Protein – denatures or not?

Air – excellent insulator {Why?}



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