

From Last Time:

Science of Cooking – BCBT100
Fall 2012 - Bodwin

Browning Reactions

Many foods “brown”
Reactions differ by molecules

Images: <http://theculinarybutler.blogspot.com/2010/09/how-to-bake-freezing-bread-baking-bread.html>
<http://www.dailylifehacks.com/2011/06/6-bell-recipe-with-chocolate/>
<http://www.bonappetit.com/food/article/2010/10/09/7-ingredients-magic-brown-sugar-cream-biscuits/>
<http://josephwall.com/image/145-22269/>
<http://blog.frendesat.com/how-to-make-hot-chocolate/>

Science of Cooking – BCBT100
Fall 2012 - Bodwin

Malliard Browning

Proteins (+ reducing sugars)
Produce color and flavors
250°F/120°C

Images: <http://www.telegraph.co.uk/foodanddrink/8426388/White-bread-falls-from-favour-as-shoppers-prefer-brown.html>
<http://www.food-info.net/uk/colour/maillard.htm>

Science of Cooking – BCBT100
Fall 2012 - Bodwin

Encouraging Maillard

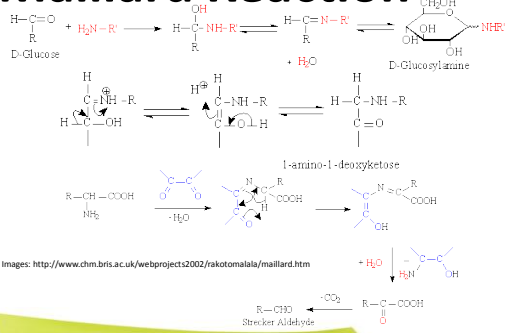
High heat, little water
Browning before stewing



Images: http://wellfed.typepad.com/well_fed/2005/12/mahogany_beef_.html
<http://www.onceuponachef.com/2012/09/roasted-tomato-salsa.html>

Science of Cooking – BCBT100
Fall 2012 - Bodwin

Maillard Reaction



Images: <http://www.chem.bris.ac.uk/webproject12002/rakotomalala/maillard.htm>

Science of Cooking – BCBT100
Fall 2012 - Bodwin

Sugar Browning

Sugar pyrolyzes (burns)
Flavor development
Caramelization
330°F/165°C



Science of Cooking – BCBT100
Fall 2012 - Bodwin

Enzymatic Browning

Phenol oxidase
 Polymerizes phenols
 Usually undesirable

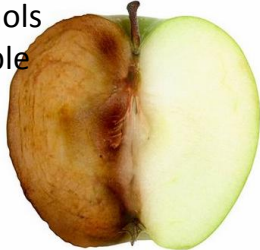


Image: <http://www.onerest.com/articles/nutrition/what-are-antioxidants-and-how-do-they-help>

Science of Cooking – BCBT100
 Fall 2012 - Bodwin

Enz Brown

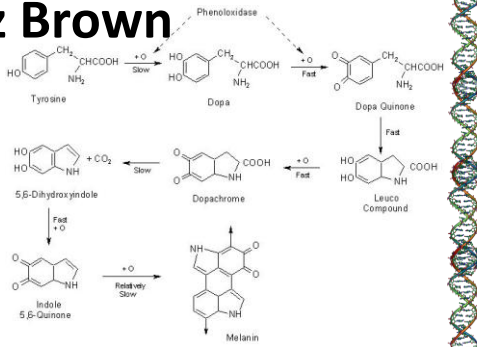


Image: <http://www.food-info.net/uk/colour/enzymaticbrowning.htm>

Science of Cooking – BCBT100
 Fall 2012 - Bodwin

Balanced Browning

Control heat
 Sugar browning @ higher Temp
 Control water
 Keeps Temp low

Image: <http://www.food-info.net/uk/colour/enzymaticbrowning.htm>

Science of Cooking – BCBT100
 Fall 2012 - Bodwin
