Onions - Layers of Flavor

A Culinary Curriculum from
The National Onion Association
Lesson 1
Onion History, Production, Availability and Consumption
Introduction to Onions

- Onion is part of the Allium genus which includes chives, garlic, leeks and shallots
- Onion is a bulb vegetable
Onion History

- Onions were a staple in prehistoric diets

- Unsure where onions originated
  - some say central Asia while others believe Iran/West Pakistan

- May be one of the earliest cultivated crops
  - onions are referenced in ancient documents up to 5000 years ago
Onion Production

- World production = 105 billion pounds
- 175 countries grow onions
  - Leading production countries:
    - China, India, United States, Turkey, Pakistan
- U.S. onion production - 6.2 billion pounds
- From coast to coast, 20 states grow onions
  - Leading production areas are California, Idaho-Eastern Oregon and Washington
Onion Production

- Most commercial onions grow from seed
- About 2/3 of an onion bulb grows above ground
- Onions typically grow for about five to six months
- Onions are harvested when tops begin to fall over
Onion Production

Bulbing is triggered by day length and latitude
Onion Consumption

- World per capita consumption - 13 pounds
- U.S. per capita consumption - 20 pounds
- Highest per capita consumption
  Libya - 66 pounds
Onion Consumption

- Onions are the most commonly mentioned vegetable on today’s menus
- 92 percent of foodservice operations mention onions on their menu
Onion Consumption

- Diverse menu items
- Diverse cuisines - Thai, Greek, Indian, Tex-Mex, Italian, Mediterranean, African, Middle Eastern, Mexican, French and American
Lesson 2
Onion Types, Colors, and Sizes
Onion Types

- Spring/Summer (fresh onions)
  - Available - March through August
  - Skin - one or two thin layers, lighter
  - Water content - high
  - Flavor - sweet to mild

Best uses: raw, pickled, lightly cooked, or grilled
Onion Types

- Fall/Winter onions (storage onions)
  - Available - August through May
  - Skin - multiple, thick, paper-like layers, darker
  - Water content - lower (longer shelf life)
  - Flavor - mild to pungent

Best uses: raw, caramelized, roasted, grilled, fried or any dish with a long cook time
Onion Colors

Percent of US Production

Yellow = 85%  Red = 8 to 10%  White = 5%

COLORS OF ONIONS
Bulb onions can be yellow, red or white.
Onion Sizes

Super Colossal - 4 to 4-1/2” and up
Colossal - 3-3/4” and up
Jumbo - 3” and up
Medium - 2” to 3-1/4”
Pre-pack - 1-3/4” to 3”
Small - 1” to 2-1/4”
Boiler - 1” to 1-7/8”
Creamer (Pickler/Pearl) - Under 1”
Lesson 3
Onion Receiving and Handling, and Storage
Receiving and Handling

- Onions should feel firm and dry
- Onions should be free of gray or black mold
- Onions should not show signs of sprouting
- Do not drop onions as this will cause bruising
Storing Onions

- Dry, cool
- Well ventilated
- To avoid sprouting, keep onions out of direct sunlight
- Do not store onions near other produce such as apples, celery and pears
- Other produce can absorb onion odor and likewise, onions can take on odor of other produce
Packaging for Dry Bulb Onions

- Bags
- Industrial totes
- Cartons
Fresh-cut Options

- Common Cuts Available
  - Diced
  - Rings
  - Whole sliced
  - Whole peeled
  - Ready-to-bloom
  - Slivered
  - Pureed
IQF Onions

- Individual Quick Frozen (IQF)
  - Diced
  - Rings
  - Strips

Roasted, caramelized and custom seasoning formulas may be available
Lesson 4
Cutting Onions and Onion Yields
Onion Cuts

- **Slabs**: 1/4 to 1/2-inch thick
- **Rings**: 1/4-inch thick
- **Half Rings (against the grain Julienne)**: 1/8” X 1/8” X 1-1/2” to 2”+
- **Slivers (with the grain Julienne)**: 1/8” X 1/8” X 1-1/2” to 2”+
- **Rough Cut (Mirepoix)**
- **Minced**: 1/8" X 1/8" X 1/8"
- **Small Dice (Macédoine)**: 1/4" X 1/4" X 1/4"
- **Medium Dice (Parmentiere)**: 1/2" X 1/2" X 1/2"
- **Large Dice (Carré)**: 3/4" X 3/4" X 3/4"
How To Reduce Tearing

- Always use a sharp knife
- Chill for 30 minutes before cutting
- Begin cutting at the stem; leave the root end uncut as long as possible as it contains the highest concentration of sulfuric compounds
# Onion Yields

## Onion Yield Chart

The following chart shows the approximate measurements for onions:

<table>
<thead>
<tr>
<th>Onion Size</th>
<th>2-1/2”</th>
<th>3”</th>
<th>3-1/2”</th>
<th>4”</th>
<th>4-1/2”</th>
</tr>
</thead>
<tbody>
<tr>
<td>Raw Onion Average Weight</td>
<td>4.34</td>
<td>7.27</td>
<td>11.09</td>
<td>16.17</td>
<td>21.62</td>
</tr>
<tr>
<td>Usable Peeled Onion Per Raw Onion Peeled Weight</td>
<td>73.54%</td>
<td>77.72%</td>
<td>78.54%</td>
<td>80.77%</td>
<td>81.64%</td>
</tr>
<tr>
<td>Peeled Onion Weight Range</td>
<td>2.47-4.86 ounces</td>
<td>4.81-7.84 ounces</td>
<td>7.7-10.11 ounces</td>
<td>11.46-15.64 ounces</td>
<td>15.90-18.96 ounces</td>
</tr>
<tr>
<td>Usable Onion Slabs (7/16”) Range</td>
<td>3-4 slabs</td>
<td>4-5 slabs</td>
<td>4-5 slabs</td>
<td>5-6 slabs</td>
<td>6-8 slabs</td>
</tr>
<tr>
<td>Usable Onion Rings (7/16”) slabs separated into individual rings with diameter of more than 1”) Range</td>
<td>12 - 19 rings</td>
<td>16 - 27 rings</td>
<td>24 - 38 rings</td>
<td>20 - 49 rings</td>
<td>38 - 59 rings</td>
</tr>
<tr>
<td>Usable Onion Slivers (3/8” horizontal slices) Per Raw Onion Weight</td>
<td>72.65%</td>
<td>72.36%</td>
<td>76.49%</td>
<td>79.55%</td>
<td>79.41%</td>
</tr>
<tr>
<td>Measure Diced Onions (3/8” pieces) Per Raw Onion Weight</td>
<td>2.47 cups per pound</td>
<td>2.71 cups per pound</td>
<td>2.74 cups per pound</td>
<td>2.79 cups per pound</td>
<td>2.82 cups per pound</td>
</tr>
<tr>
<td>Measure Minced Onions (1/8” pieces) Per Raw Onion Weight</td>
<td>4.38 cups per pound</td>
<td>4.80 cups per pound</td>
<td>4.88 cups per pound</td>
<td>4.78 cups per pound</td>
<td>4.93 cups per pound</td>
</tr>
</tbody>
</table>

Source: Idaho Eastern Oregon Onion Yield Data/Menu Doctor LLC
Lesson 5
Onion Nutrition and Health Benefits
Onion Nutrition

- Only 45 calories per serving (one medium onion)
- Naturally fat free
- They are a source of dietary fiber, Vitamin C, Vitamin B6, Potassium and other key nutrients including Folate, Calcium and Iron.
Health Benefits

Health-Promoting Phytochemicals

► Flavonoid Quercetin
  ◆ Initial findings indicate anti-inflammatory
  ◆ Anti-inflammatory foods protect against cardiovascular disease, cancer, diabetes, obesity and other chronic conditions

► Sulfides/Thiols
  ◆ Support heart, immune and digestive health

The Greeks used onions to fortify athletes for Olympic Games.
Lesson 6
Preparation Methods for Onions
Preparation Method: Raw

- Sliced, diced or minced
- Used in salsa, salads and as condiments
Preparation Method: Sweat

- To heat in a small amount of fat over low heat until softened but not browned
- Cover to retain moisture
- Results in tender translucent pieces
Preparation Method: Sauté

- Quickly cooking in a small amount of hot fat over high heat
- Toss to cook evenly and prevent burning
Preparation Method: Caramelize

- Slowly cooking in a small amount of fat
- Browning occurs when naturally present sugars are heated, resulting in a rich, more complex aroma and flavor
- Caramelization takes time
  - exactly how much time will vary based on water content, cut of the onion and the volume

**Fact:** A recent menu study showed entrees with caramelized onions averaged $1.80 more per item than onions menued without a noted preparation method
Preparation Method: Broiling/Grilling

- Dry heat method where onions are cooked under or over heat source
Preparation Method: Marinate

- Soaking onions in seasoned, often acidic liquid before cooking adds flavor.
Preparation Method: Pickle

- Saturation of onions with acid, usually vinegar, in order to preserve them
Preparation Method: Roast

- Dry heat cooking method where onions are surrounded by hot air
- May be placed beside other vegetables or a large cut of meat while roasting
Preparation Method: Stuff

- Onions may be hollowed and used to hold a variety of ingredients
Preparation Method: Deep Fry

- From rings to blooms, deep fried onions remain a popular appetizer and side dish.
- Deep fried onions are coated with a breading or batter before frying - this helps seal in moisture and keeps them from becoming too greasy.
- Water content in the onion affects fry time.
  - Higher water content onions (Spring/Summer) will require a longer frying time.
Preparation Method: Deep Fry Bread vs Batter

- **Breading** - dredged in flour and then dipped in a combination of beaten eggs and a liquid, then dipped in bread crumbs
- **Battering** - dredged in a flour mixture, then dipped into a liquid batter
Preparation Method:
Terms to Know

- **Mirepoix** - roughly cut mixture of 50 percent onions, 25 percent celery and 25 percent carrots
  - Mirepoix (raw, roasted, sautéed) is the flavor base for a wide variety of dishes

- **Onion Pique** - half on onion studded with cloves and a bay leaf
  - Traditionally used in béchamel sauce and sometimes found in other traditional French recipes

- “**Holy Trinity**” - a term sometimes used to describe Creole version of mirepoix - a chopped mixture of onions, celery and bell pepper
Why Menu Onions?
Color, Texture and Flavor

So many great dishes begin with the peeling, slicing and dicing of an onion.

Why?
Because they add color and texture with a punch of flavor to many menu items.
Or as we say . . . layers of flavor.
For More Information

www.onions-usa.org