

From Last Time:

Terpenes

Phenolics

Pungents

(R)-carvone (spearmint)

(S)-carvone (caraway)

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Herb & Spice Matching

Web resources:
http://www.localharvest.org/blog/39774/entry/what_herbs_go_with_what

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Mint Family Herbs

Mints (*peppermint, spearmint, wintergreen, etc*)

Basil

Oregano

Rosemary

Lavender

Bergamot

External oil “glands”

Basil
Source: <http://thehungrygoddess.com>

Peppermint
Source: <http://jillshomeremedies.blogspot.com>

Lavender
Source: <http://gardenofeden.blogspot.com/>

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Carrot Family Herbs

Celery

Parsley

Cilantro

Dill

Fennel

Oil canals in leaves

Cilantro
Source: <http://thehealthmoderator.com/>

Dill
Source: <http://www.wallopahoneyfarm.com/>

Fennel
Source: <http://ucan.edu/>

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Laurel Family Herbs

Bay leaf

Avocado leaf

Sassafras

Bay Laurel
Source: <http://www.thepapalibrary.com/>

Sassafras
Source: <http://www.knowyourherbs.com/articles/view/1011>

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Carrot Family Spices

Coriander

Celery

Cumin

Dill

Fennel

Caraway

Small dried fruits

Cumin
Source: <http://www.healthyherbs.com/Cumin>

Dill Seed
Source: <http://www.lalalalalal.com/>

Caraway
Source: <http://www.healthyherbs.com/Caraway>

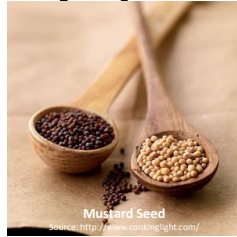
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Cabbage Family Spices

Mustards
Wasabi
Horseradish



Wasabi
Source: <http://www.thewasabicompany.com/>



Mustard Seed
Source: <http://www.cooking-light.com/>



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Making “mustard”

Soak seeds
Enzyme activation
Grind and mix
Add acid (vinegar)



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Bread

Flat/Unleavened breads
Grains ground with water and cooked
More palatable, transportation advantage



Image: http://www.indianfoodsite.com/breads_indian_paratha.htm



Image: http://www.cepolina.com/bread_Muslim_unleavened.html



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Unleavened Breads

Tortillas
Lavash
Matzah

Thin and often cracker-like



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“Leavening”

Chemical or Biological
Forming and trapping gas



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Chemical Leavening

Carbonates + Acid = CO₂(g)
Relatively fast gas formation
Little other character
“Quickbreads”
“Soda bread”
Cakes



Images: <http://www.bellaonline.com/articles/art165628.asp>
<http://www.diabetesmanagement.com/recipes/Breads/>
http://www.salon.com/2010/08/12/ish_soda_bread_how_to_make_quickbreads/



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How much CO₂(g)?

1 Tablespoon Baking Soda =
25g NaHCO₃(s)

Can produce ~7L of CO₂(g)

7L = 1.9 gallon



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Trapping the gas

Need a network of large molecules
Protein!

Gluten = long protein chains

Glutenins link together, form gluten

Disulfide bonds = strong

Longer glutens = chewier bread

Kneading...



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Modifying Gluten

Flour type – high protein (↑ gluten)

Oxidizing substances (↑ gluten)

“Wet” dough (↑ gluten)

Lots of kneading/mixing (↑ gluten)

Salt (↑ gluten)

Sugar (↓ gluten)

Fats & Oils (↓ gluten)

Acid (↓ gluten)



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