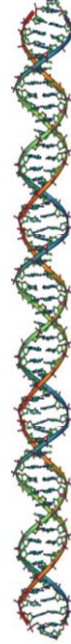


Flavoring Foods

Salt and other minerals

Herbs & Spices



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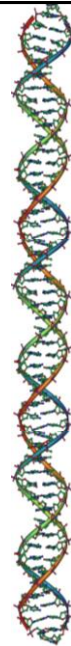
Herbs & Spices

Plant-based foods

Intense flavor, color, odor

Herbs = green parts (leaves)

Spices = other parts



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Chemical Defense!

Essential oils often poisons

Dose makes the poison...

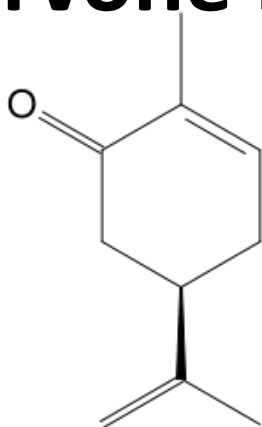
MSDS and LD50 (*vanillin, menthol, carvone*)



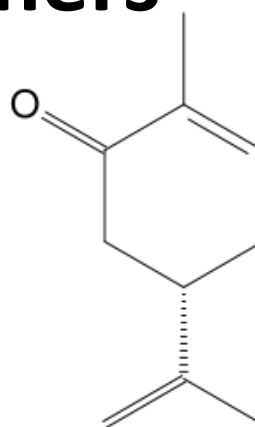
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Carvone Isomers



(*R*)-carvone
(spearmint)



(*S*)-carvone
(caraway)

Source: <http://weakinteractions.wordpress.com/primers/chirality/>



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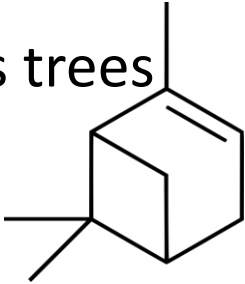


Terpenes

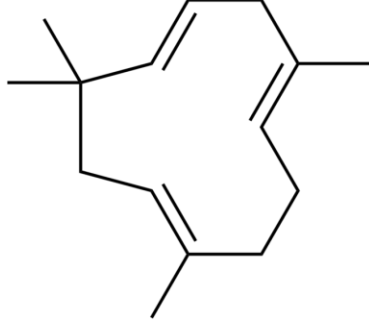
“Turpentine”

Coniferous trees
Citrus
Flower

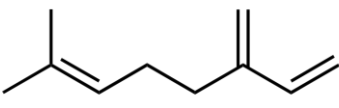
“fresh” character



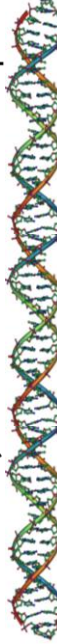

Pinene
Source: <http://en.wikipedia.org/wiki/Pinene>



Humulene
Source: <http://en.wikipedia.org/wiki/A-humulene>



Myrcene
Source: <http://en.wikipedia.org/wiki/Myrcene>

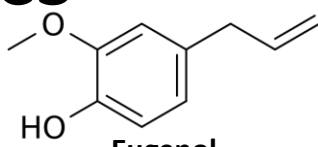
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Phenolics

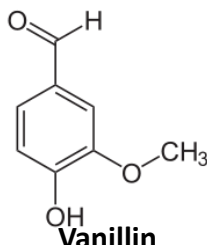
“phenyl”

Clove
Cinnamon
Anise

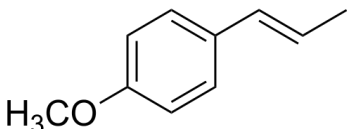
more water soluble



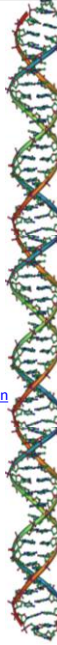

Eugenol
Source: <http://en.wikipedia.org/wiki/Eugenol>



Vanillin
Source: <http://en.wikipedia.org/wiki/Vanillin>



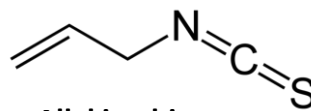
Anethole
Source: <http://en.wikipedia.org/wiki/Anethole>

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Pungents

“Feel” vs. “taste”



Allyl isothiocyanate

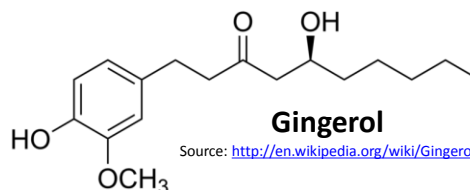
Source: http://en.wikipedia.org/wiki/Allyl_isothiocyanate

Thiocyanates

(mustard, horseradish)

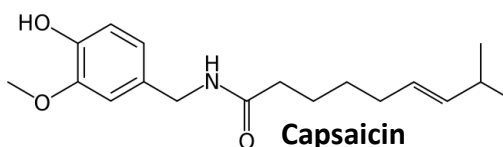
Alkylamides

(peppers, ginger)



Gingerol

Source: <http://en.wikipedia.org/wiki/Gingerol>



Capsaicin

Source: <http://en.wikipedia.org/wiki/Capsaicin>

Solubility?



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Matching Flavors

Look at molecular components

McGee p. 392-393

Peppermint vs. Spearmint

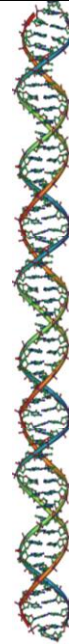


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Herb & Spice Matching

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



Basil

Source: <http://thehungrygoddess.com>

Oregano

Rosemary

Lavender

Bergamot

External oil “glands”



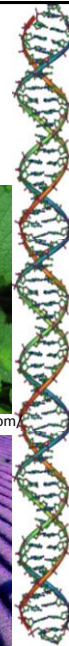
Peppermint

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



Lavender

Source: <http://gardenofeaden.blogspot.com/>



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Carrot Family Herbs

Celery

Parsley

Cilantro

Dill

Fennel

Oil canals in leaves



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



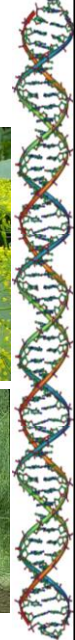
Dill
Source: <http://www.milkandhoneyfarm.com/>



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



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Laurel Family Herbs

Bay leaf

Avocado leaf

Sassafras



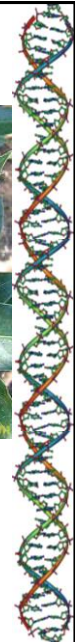
Sassafras
Source: <http://www.fps.edu/islandreeves/ecology/sassafras.html>



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



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Carrot Family Spices

Coriander

Celery

Cumin

Dill

Fennel

Caraway

Small dried fruits



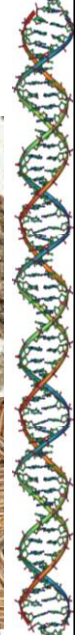
source: <http://en.wikipedia.org/wiki/Cumin>



Source: <http://www.satvikshop.com/>



Source: <https://joanspear.wordpress.com/2010/02/>
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Cabbage Family Spices

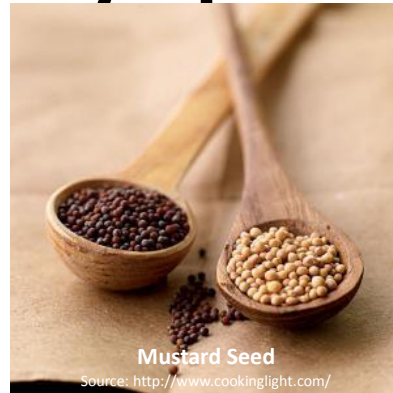
Mustards

Wasabi

Horseradish



Source: <http://www.thewasabicompany.co.uk/>



Source: <http://www.cookinglight.com/>



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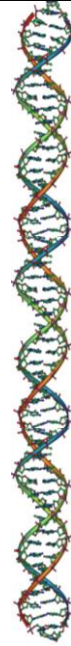
Making “mustard”

Soak seeds

Enzyme activation

Grind and mix

Add acid (vinegar)



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