

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

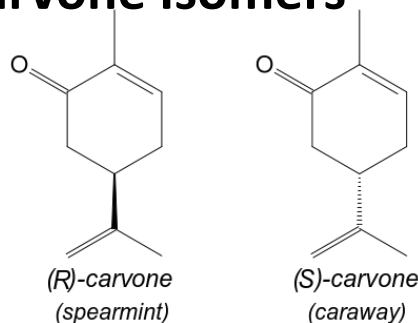
Dose makes the poison...

MSDS and LD50 (vanillin, menthol, carvone)



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Carvone Isomers



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

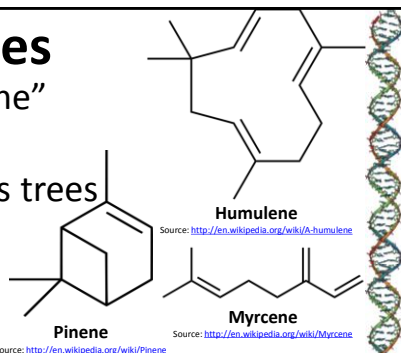


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Terpenes

“Turpentine”

Coniferous trees
Citrus
Flower



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

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

“fresh” character



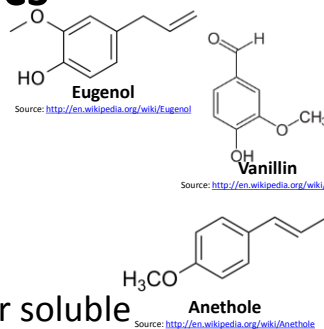
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Phenolics

“phenyl”

Clove
Cinnamon
Anise

more water soluble



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

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

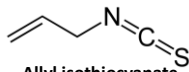
Source: <http://en.wikipedia.org/wiki/Anethole>



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Pungents

"Feel" vs. "taste"



Allyl isothiocyanate

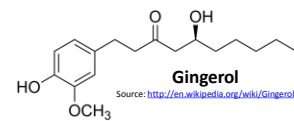
Source: http://en.wikipedia.org/wiki/Allyl_isothiocyanate

Thiocyanates

(mustard, horseradish)

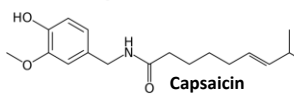
Alkylamides

(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

Oregano

Rosemary

Lavender

Bergamot

External oil "glands"



Basil

Source: <http://thehungrygoddess.com>



Peppermint

Source: <http://jilishomerecipes.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://theurbanfarmer.com>



Dill

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



Fennel

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



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Laurel Family Herbs

Bay leaf

Avocado leaf

Sassafras



Bay Laurel

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



Sassafras

Source: <http://www.k-state.edu/landscapes/landscape/landscape.html>



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