

# How to make a Love Potion





# Functional Foods:

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# Korean Ginseng: *Panax ginseng*

Native to China, cultivated in Russia, Korea, Japan & Biggleswade.

Root has high saponin (ginsenoside) & polysaccharide content. Ginsenosides shown to stimulate the sexual response in male & female animals.

COE category N2 - acceptable for use in foodstuffs.

Woody, earthy, nutty flavour.

Herbalists recommend a daily dose of 1-2g of powdered root.



# Muira Puama: *Liriosma ovata*

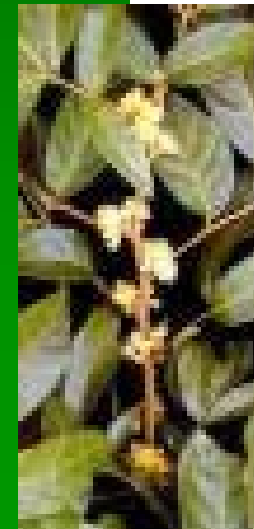
Native to Brazil & Amazonian regions,  
usually wild harvested.

Extracts usually made from bark and root:  
no active components yet positively  
identified. French study found 62% of  
patients with a loss of libido reported a  
'dynamic' effect.

No COE category or GRAS status: listed in  
the BHP

Astringent, bitter, aromatic flavour.

BHP recommends a daily dose of  
0.5-2g of liquid extract.



# Damiana: *Turnera diffusa*

Native to central & south America, Mexico, West Indies.

Dried leaf contains volatile oils & a bitter substance of undetermined structure known as damianin. Widely reported to have powerful aphrodisiac properties.

COE category N2 - acceptable for use in foodstuffs.

Fruity, raisin/fig like, flowery flavour

Herbalists recommend a daily dose of 0.5-2ml of liquid extract.







# WHY EXTRACT PLANTS?

To make them  
user-friendly!





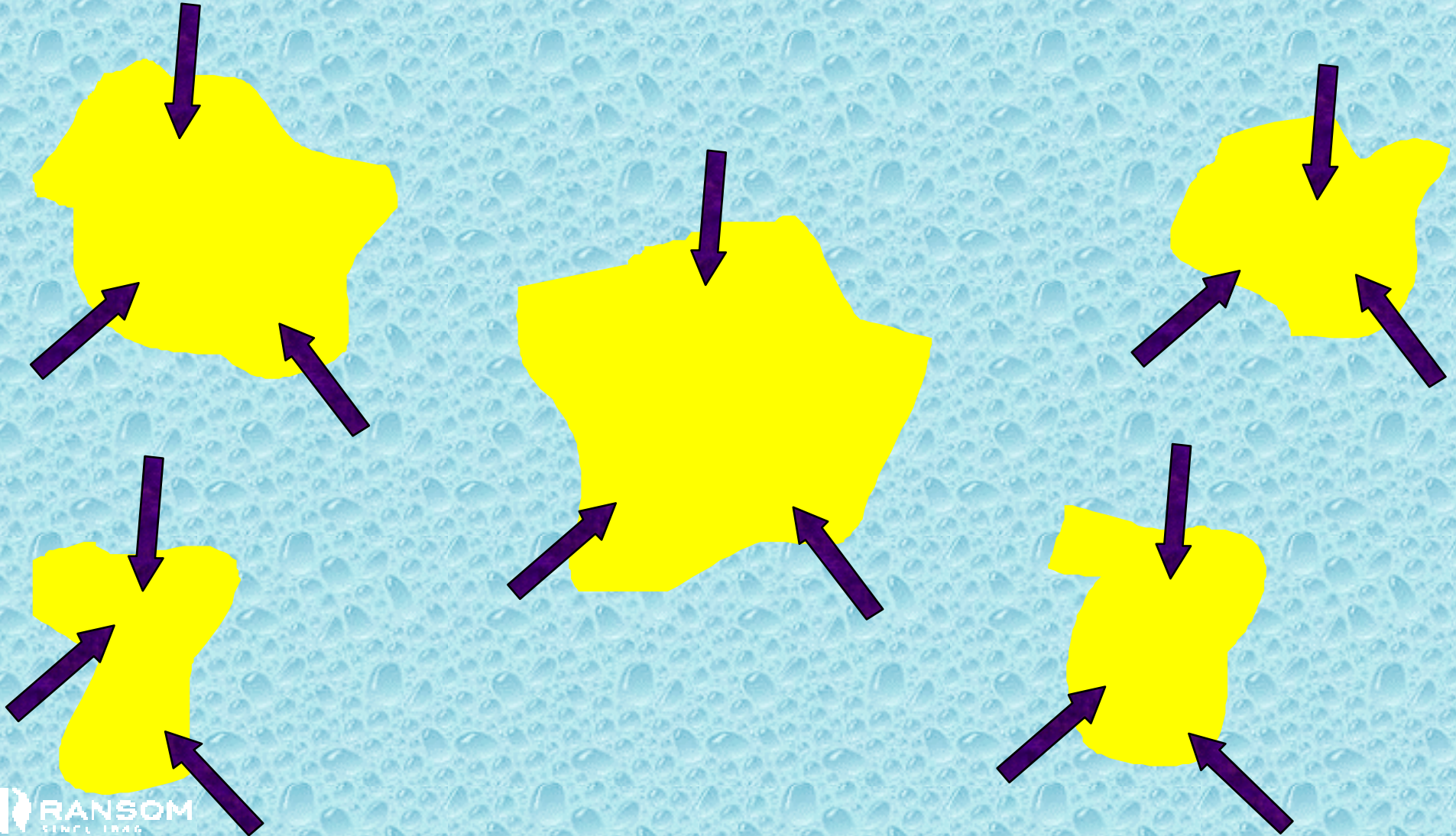
# HOW DO WE EXTRACT PLANT MATERIAL?

Choose a solvent - usually alcohol, water or a mixture of the two - appropriate to extract the desired constituents...

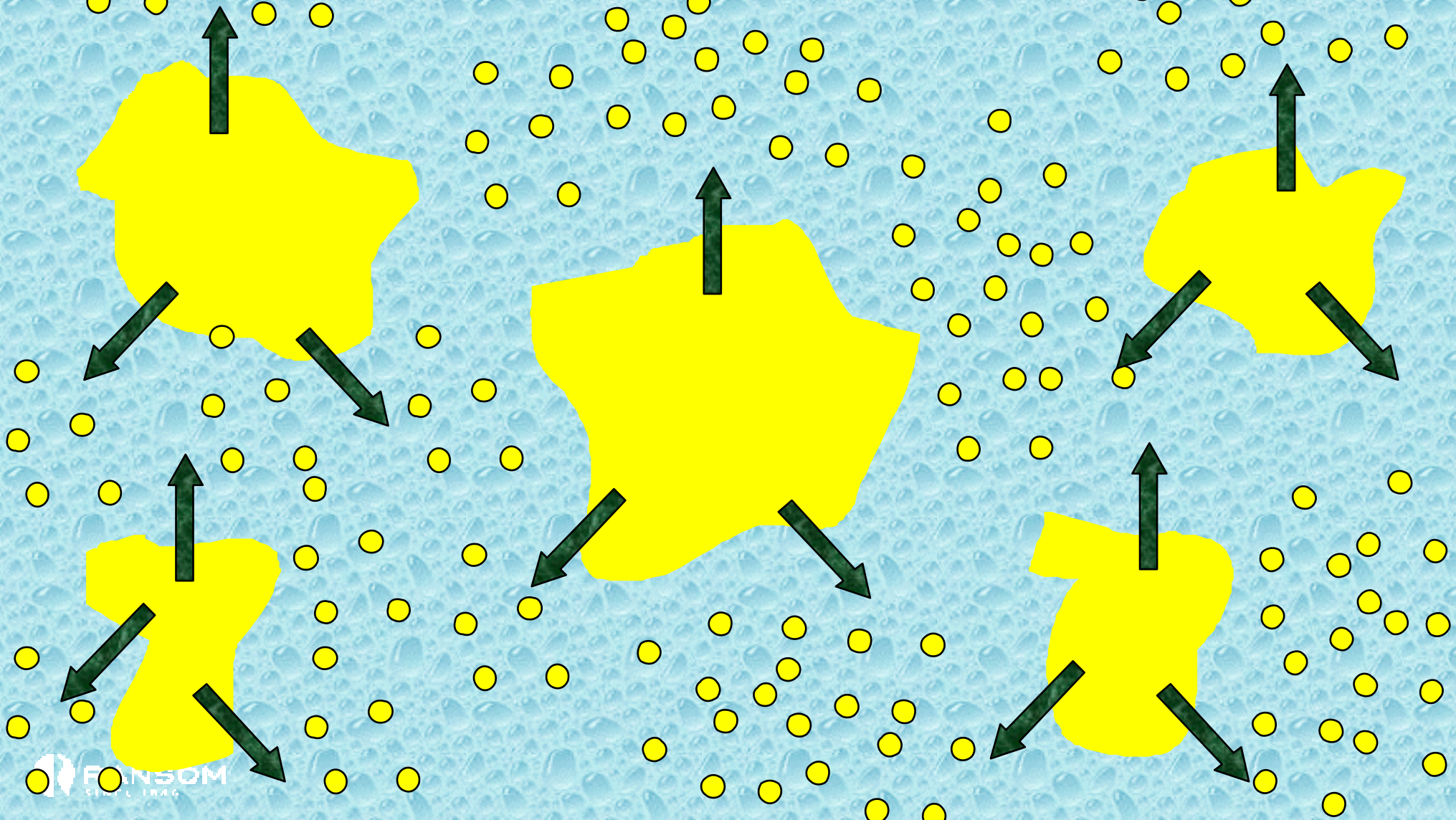
Mix solvent with plant material,  
ground to predetermined particle size



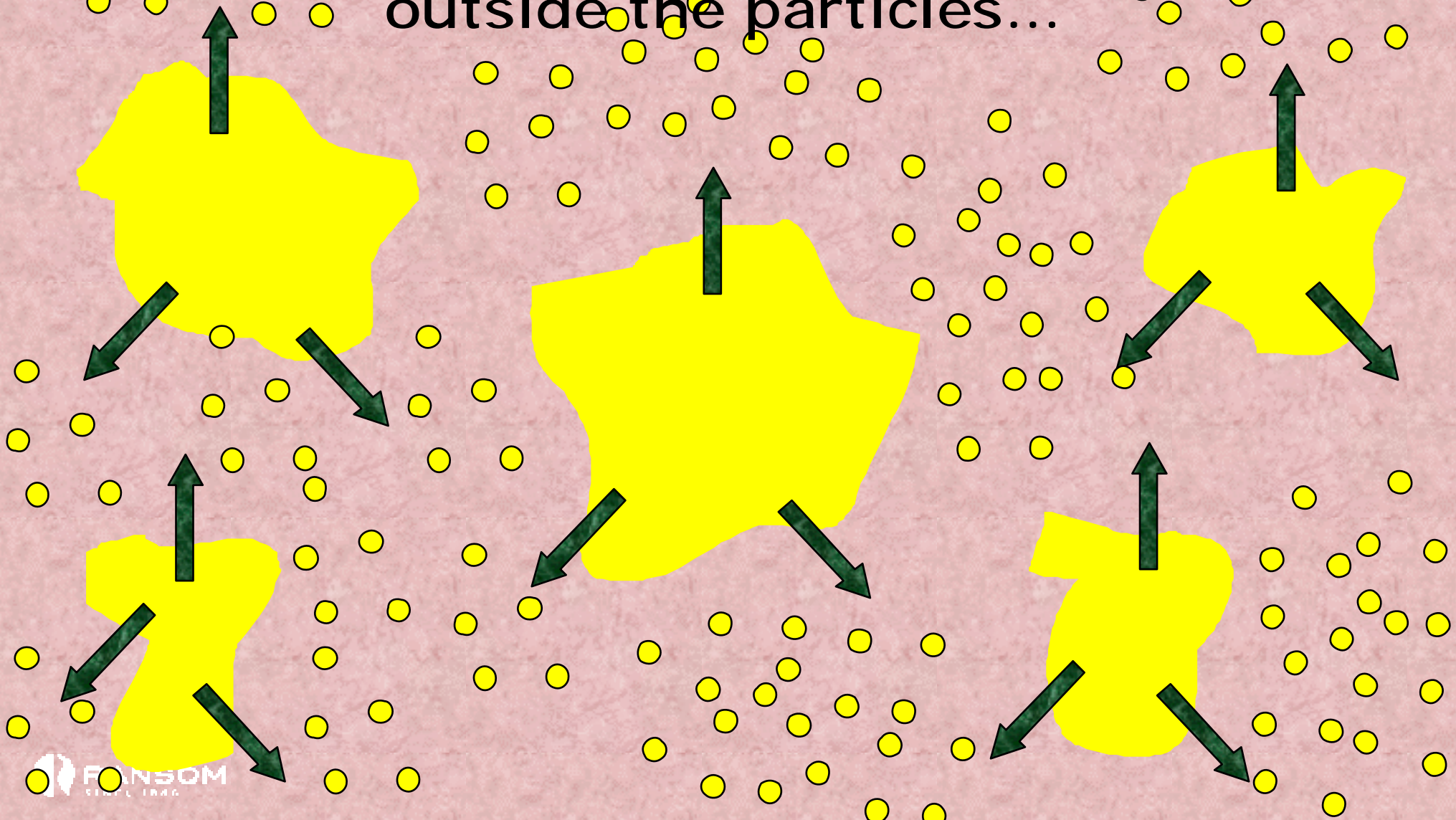
Solvent penetrates plant material and dissolves the solids that are soluble in that solvent...

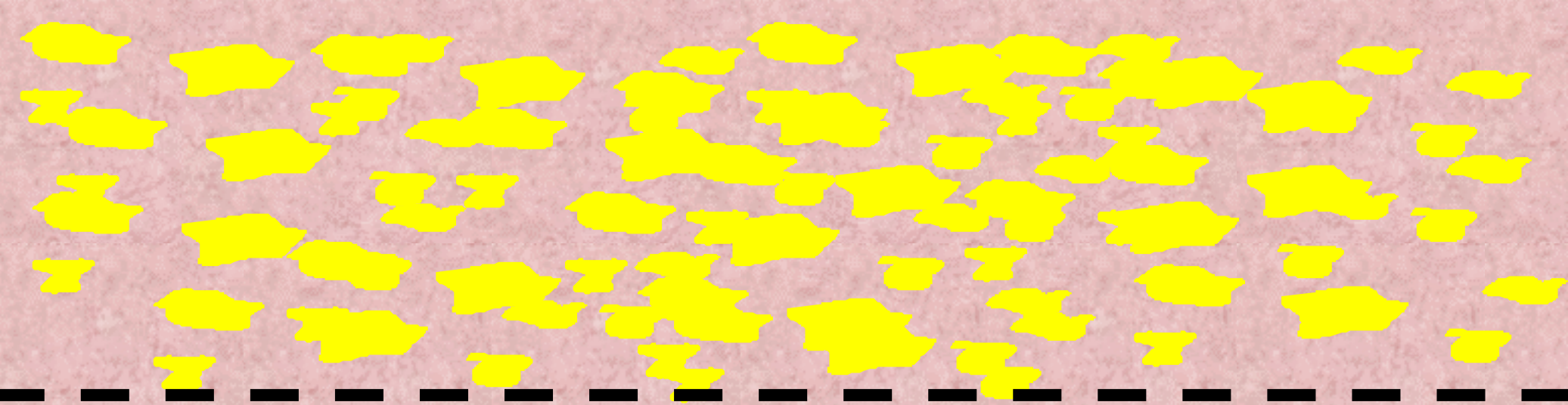


...and the dissolved solids diffuse into the solvent surrounding the particles...



...until equilibrium state is reached between the concentration of dissolved solids inside & outside the particles...





...Liquor - now the extract - then drained and filtered to remove insoluble spent material...

# CONCENTRATION AND EVAPORATION

- Reduced volume for shipping
- Preservation
- More suitable for some applications

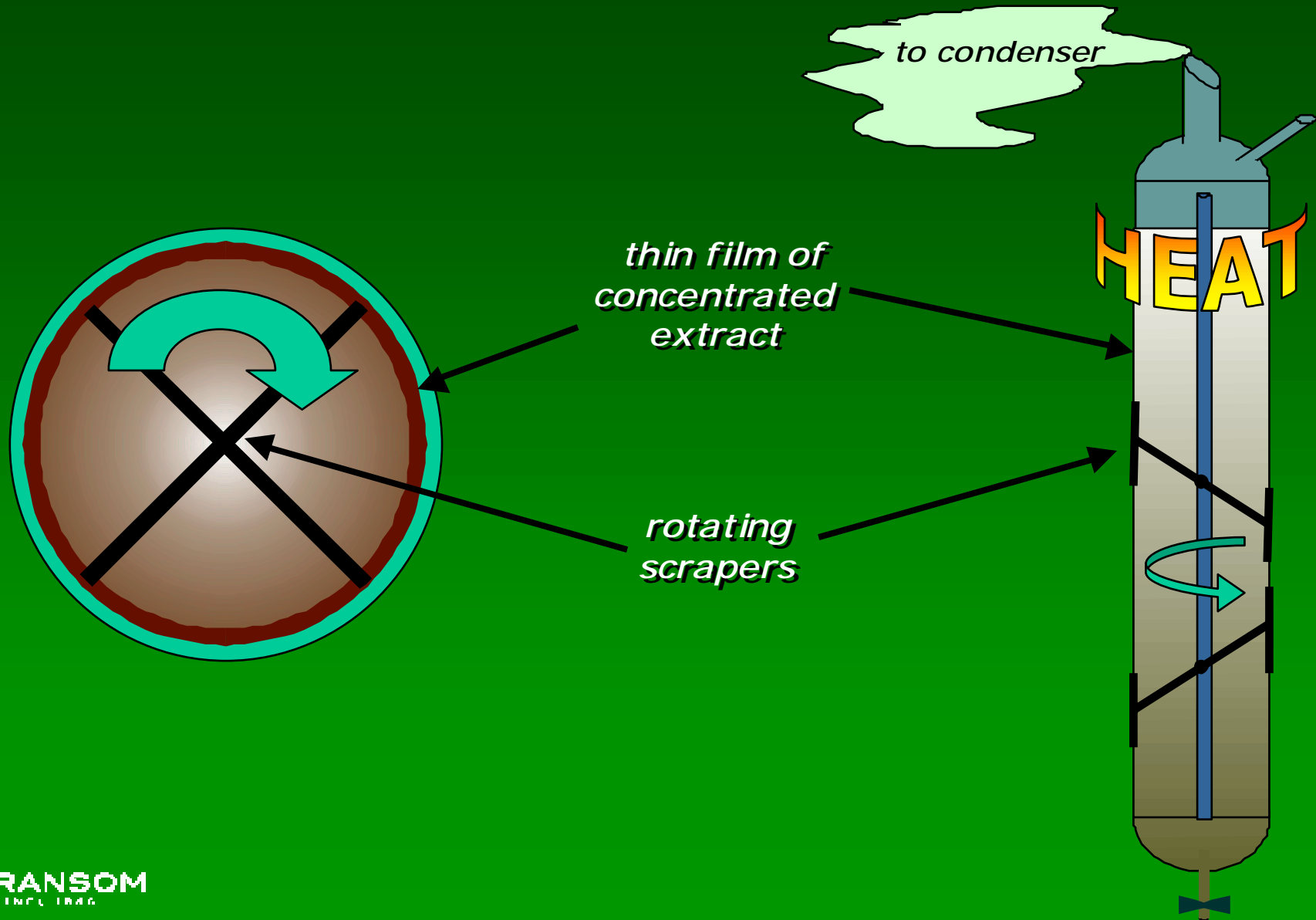
# 1. Open pan method :



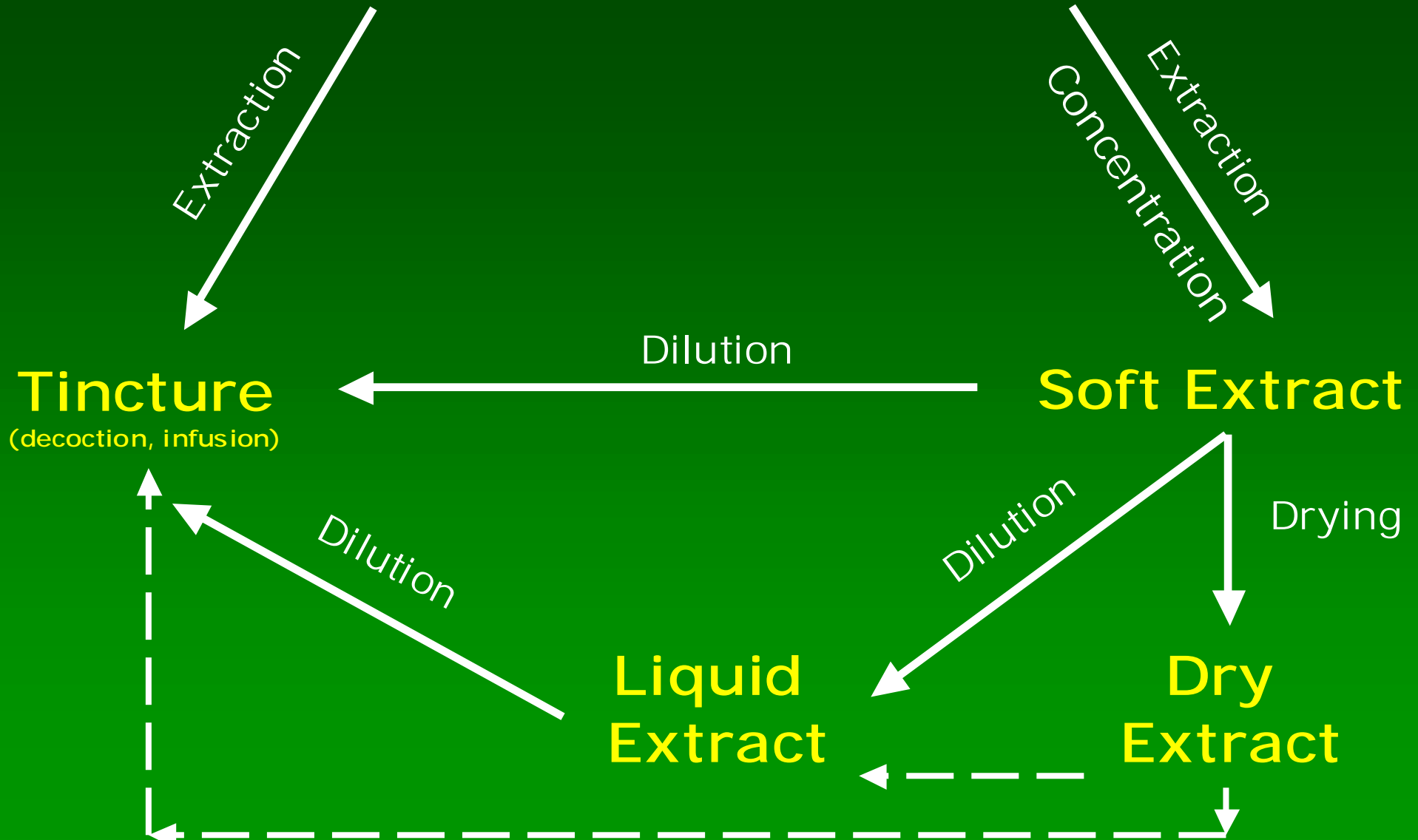
## 2. Closed still:



### 3. Single pass methods:



# PLANT MATERIAL



# FACTORS AFFECTING EXTRACTION

- Type of plant material
- Particle size
- Solvent
- Temperature & pH
- Extraction time / solvent recirculation

# TYPE OF PLANT MATERIAL

- Barks
- Leaves
- Flowers
- Roots
- Fruits
- Seeds



# PARTICLE SIZE

- Determines surface area available to solvent
- Soft materials - larger particle size
- Hard materials - small particle size
- Fine powders reduce yields

# CHOICE OF SOLVENT

- Usually ethanol & water for food & beverage extracts
- Dependent on plant material & desired extraction constituents
- IMS can be removed & recovered after extraction

# TEMPERATURE & pH

- Most plants extract more quickly at higher temperatures
- Danger of precipitation in final product
- Match pH to finished product or 'condition' extract

# EXTRACTION TIME

- Ranges from 1 hour to several weeks
- Can be speeded up using heat, recirculation
- Crucial part of extract development process

# EXTRACT APPLICATIONS

- What do you want it to do?
- What are you putting it in?
- What colour is it?
- What are the other components?
- What is the solubility required?

# WHAT DO YOU WANT IT TO DO?

- Flavouring / flavour effects
- 'Functionality'
- Label-Active ingredients

# WHAT ARE YOU PUTTING IT IN?

- Soft Drinks / Fruit Juices
- Alcoholic Drinks
- Baked Goods
- Cereals
- Dairy Products
- Pet Foods

# WHAT COLOUR IS IT?

- Extracts varied shades of green/brown
- High phenolic content - oxidation
- Low dose rates
- Over-colouring
- Packaging
- Benefits

# CHEMICAL INTERACTIONS

- EG Tannin complexing
- EG Catechins & proteins
- Colours

# SOLUBILITY

- Solvents chosen to extract efficiently
- EG Kola Nut resins
- Choose the right specification

# LEGISLATION CONSIDERATIONS

- Dose Rates
- Medicinal Claims
- The Blue Book

# LEGISLATION CONSIDERATIONS

Normally eaten as foods in Europe (N1) or not in Europe (N2), no restrictions on use


Containing a biologically active principle and normally eaten as foods in Europe (N3) or not in Europe (N4), restricted dose based on level of active component

**N5:** temporarily permitted, awaiting further evidence

# THERAPEUTIC DOSES

- Do extracts really work?
- Medicinal Claims
- Incorporation rates vs. consumption

# The Potion



Liquid Sugar	637.0
Damiana SI	75.0
Muira Puama SI	24.0
Korean Ginseng SI	24.0
Passionfruit Concentrate	189.0
Passionfruit Flavouring	0.5
Beetroot Juice Concentrate	47.0

Dilute 1+9 with sparkling water

# Does it work?

**OK!**  
FIRST FOR CELEBRITY NEWS  
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**JORDAN**  
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**KYLIE:**  
**SECRET WEDDING TO MYSTERY MAN**  
"HE'S PLUMP AND BALDING, BUT I CAN'T RESIST HIM!"

The magazine cover features a large photograph of Kate Winslet and Spencer Matthews. Kate is in the foreground, wearing a white floral top, looking towards the camera. Spencer is behind her, looking slightly to the side. Several smaller inset photos are visible: one of Gareth Gates in the top right, one of Jordan Peele in the middle right, and one of Kylie Minogue in the bottom right.



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