D.PHARM • FIRST YEAR

Pharmaceutics

CHAPTER 3

Pharmaceutical Aids



ENGLISH CHAPTER NOTES

PHARMACEUTICAL AIDS

PHARMACEUTICAL AIDS

- Excipients support formulation and manufacture without serving as the intended therapeutic ingredient.

WHY THEY MATTER

- They improve processing, stability, dose accuracy and patient acceptability.
- They can influence drug release and bioavailability.

TABLET FUNCTIONS

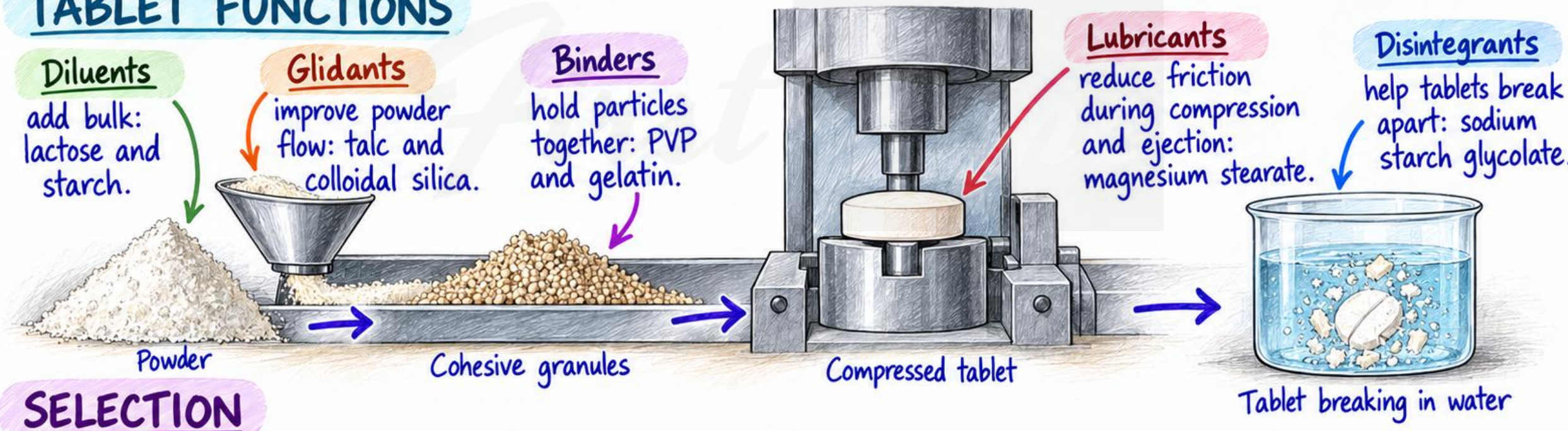
Diluents
add bulk: lactose and starch.

Glidants
improve powder flow: talc and colloidal silica.

Binders
hold particles together: PVP and gelatin.

Lubricants
reduce friction during compression and ejection: magnesium stearate.

Disintegrants
help tablets break apart: sodium starch glycolate.



SELECTION

- Match function to dosage form and manufacturing process.
- Check quality, compatibility and safety for the route of use.
- An excipient can affect product performance even without therapeutic intent.

AIDS FOR LIQUID FORMULATIONS

Different excipients solve different formulation problems.

PHYSICAL STABILITY

- Solvents dissolve ingredients: purified water and suitable alcohol.
- Emulsifying agents stabilize oil-water dispersions: Tween 80 and acacia.
- Suspending agents slow settling and aid redispersion: methylcellulose and xanthan gum.



CHEMICAL AND MICROBIAL STABILITY

- Buffers control pH: citric acid and sodium citrate.



- Chelating agents bind metal ions: EDTA.



- Antioxidants limit oxidation: ascorbic acid and BHT.



- Preservatives inhibit microbial growth: parabens and suitable benzalkonium chloride use.



ACCEPTABILITY

- Colours, flavours and sweeteners improve sensory properties.
- Compatibility and effective concentration determine performance.



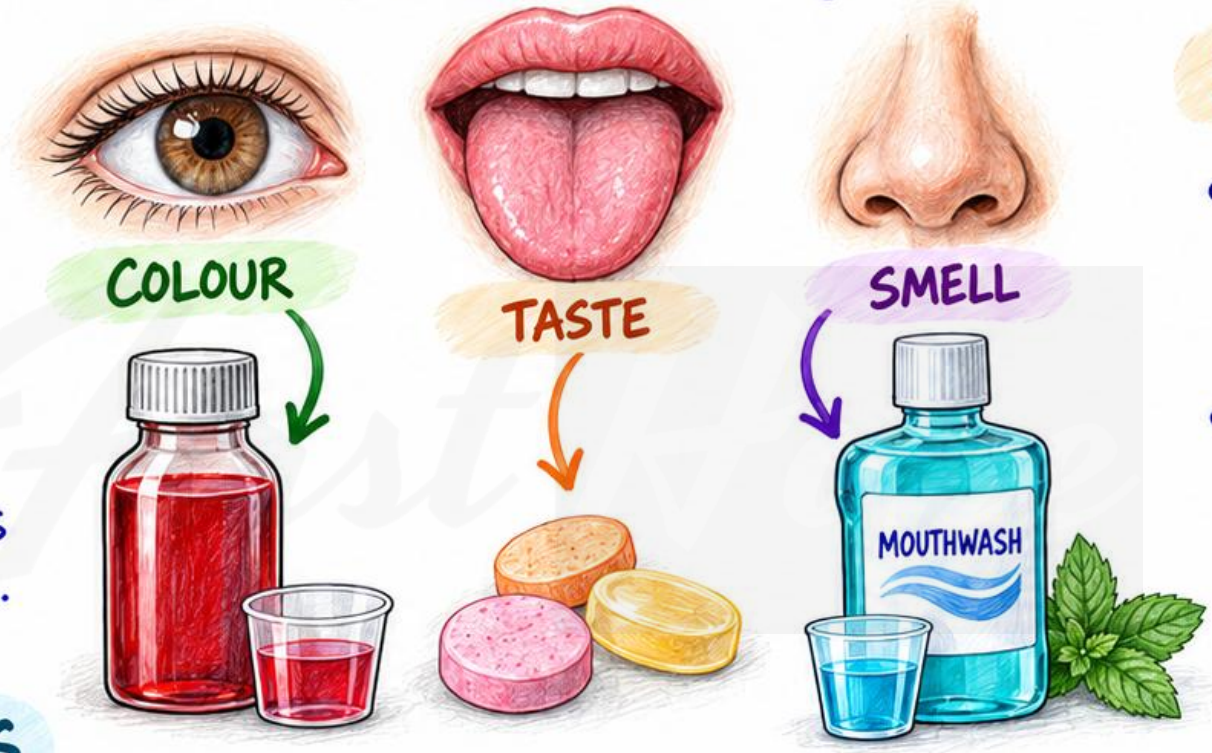


ORGANOLEPTIC AGENTS

These agents modify sensory properties, especially colour, taste and smell.

MAIN GROUPS

- Colouring agents improve appearance and product identification.
- Flavouring agents provide acceptable taste and odour.
- Sweetening agents add sweetness and help mask unpleasant taste.



SELECTION

- Consider age, preferences, dosage form, stability and allergy risk.
- Sensory appeal must accompany safe, consistent formulation quality.

COMMON APPLICATIONS



- Syrups and elixirs may combine colour, flavour and sweetness.



- Chewable tablets and lozenges mainly use flavours and sweeteners.



- Mouthwashes use suitable flavours and colours.



- Tablet and capsule colours aid identification.



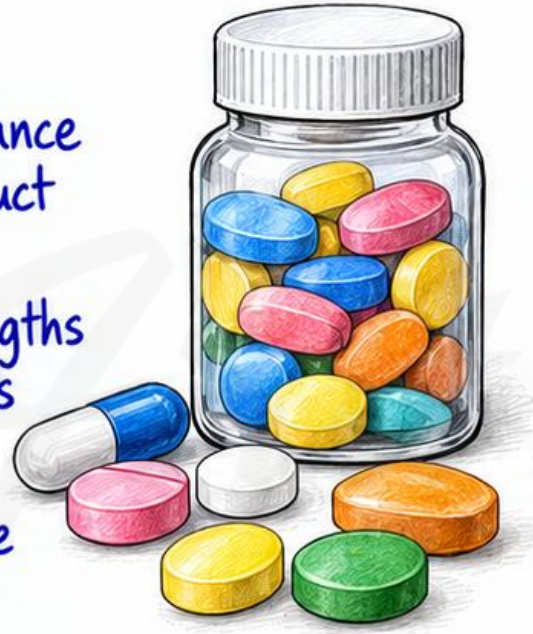
- Topical products may use colour where appropriate.

COLOURING AGENTS

Colourants improve appearance and help identify pharmaceutical products.

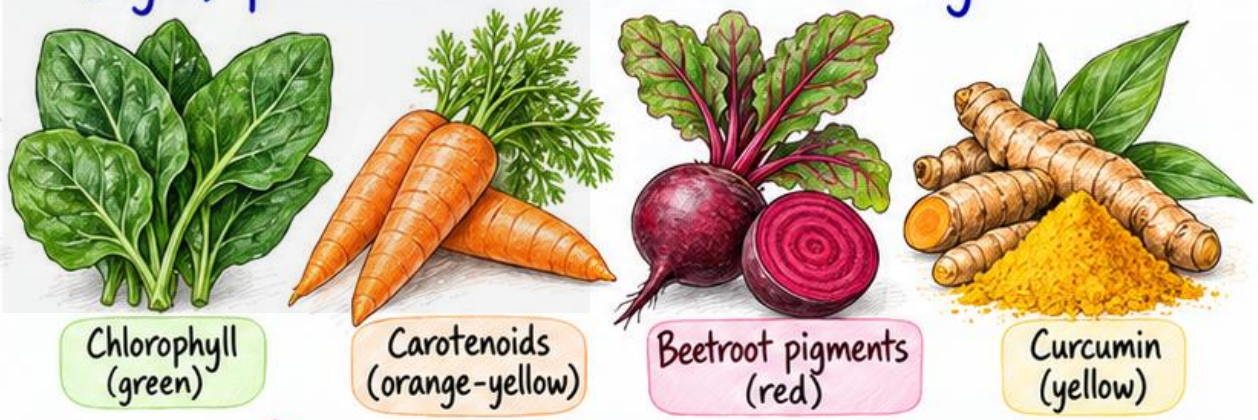
FUNCTIONS

- Mask an unattractive appearance and create a consistent product colour.
- Differentiate products or strengths when the approved design uses colour.
- Improve acceptability of suitable oral and topical formulations.



NATURAL COLOURS

- Chlorophyll: green. Carotenoids: orange-yellow.
- Beetroot pigments: red. Curcumin: yellow.
- Light, pH and heat can affect stability.



SYNTHETIC COLOURS

- Examples in the chapter include Brilliant Blue FCF, Red No. 40 and Yellow No. 6.
- They offer reproducible colour, subject to permitted-use restrictions.



Natural origin alone does not establish safety.

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