PHARM.D • YEAR 2

Pharmacognosy & Phytopharmaceuti

CHAPTER 5

Detailed Methods of Cultivation of Crude Drugs



PPT CHAPTER COVER

DOCTOR OF PHARMACY

Crude-drug cultivation: purpose and examples

Crude drugs

Natural materials used in medicine with limited processing, such as drying or powdering.

Sources



Plants: senna leaves, ginger rhizomes, Digitalis leaves.



Animals: honey, beeswax, cod-liver oil.



Minerals in traditional classification: kaolin and talc.

Why cultivate medicinal plants?



Provide a reliable supply, conserve wild populations and control growing conditions. Improve yield, consistency, traceability and farmers' income.

Plant cultivation supports quality, but authentication and chemical testing are still needed before a batch is accepted.

Match the plant, organ and constituent



Leaves and latex



Digitalis purpurea: leaves containing cardiac glycosides.





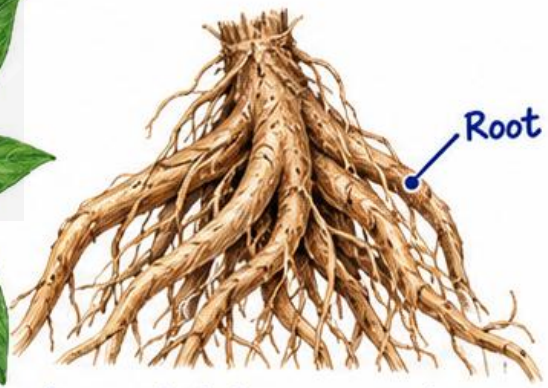
Papaver somniferum: latex containing morphine and codeine.

Bark and roots



Cinchona species: bark containing quinine and related alkaloids.





Rauvolfia serpentina: roots containing reserpine and other indole alkaloids. Rauwolfia is the traditional spelling.

Cultivation challenge



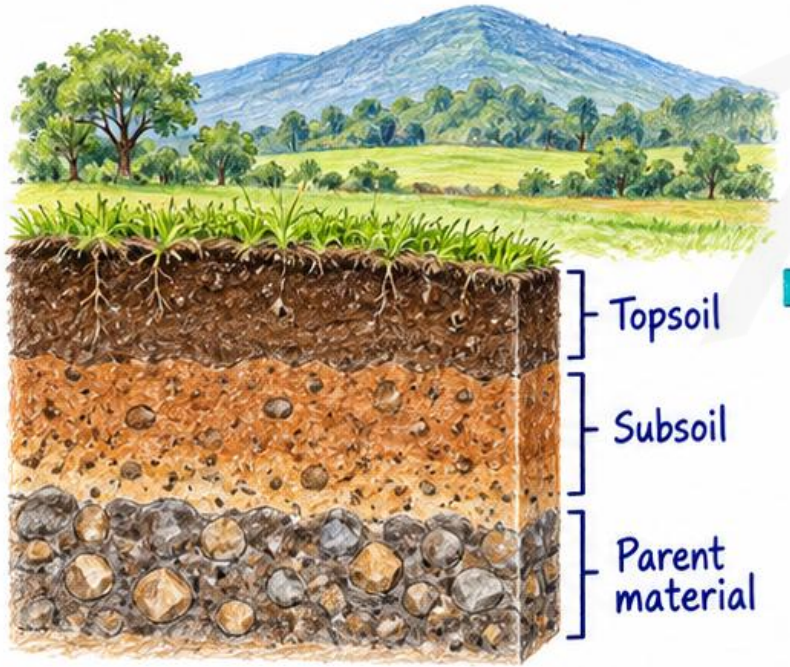
Identity, plant health and harvest maturity influence drug quality. Pest damage, contamination, changing demand and land degradation can undermine a crop even when the desired species is cultivated.



Field cultivation: establish the crop

Choose the site

Match climate, altitude, rainfall, soil texture, pH and drainage to the medicinal plant.



Prepare planting material

Select healthy, correctly identified seeds or vegetative propagules from a documented source.



Establish the crop

Prepare and level the soil; provide suitable nutrients. Sow or transplant at the appropriate season, depth and spacing.



These early decisions influence establishment, disease risk and eventual crude-drug quality. A cultivation method must fit the species and local conditions.

Field cultivation: maintain and harvest

Maintain the crop

Supply water according to crop need. Remove competing weeds and manage pests and disease using suitable approved methods.

Harvest correctly

Collect the required organ at the stage that meets the intended quality specification. Use clean tools and prevent mixing with other plants.

Handle the batch

Clean, sort, dry and package promptly as appropriate. Label and store under conditions that preserve quality.



Records connect field operations, harvest date and processing with the finished raw-material batch.

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