

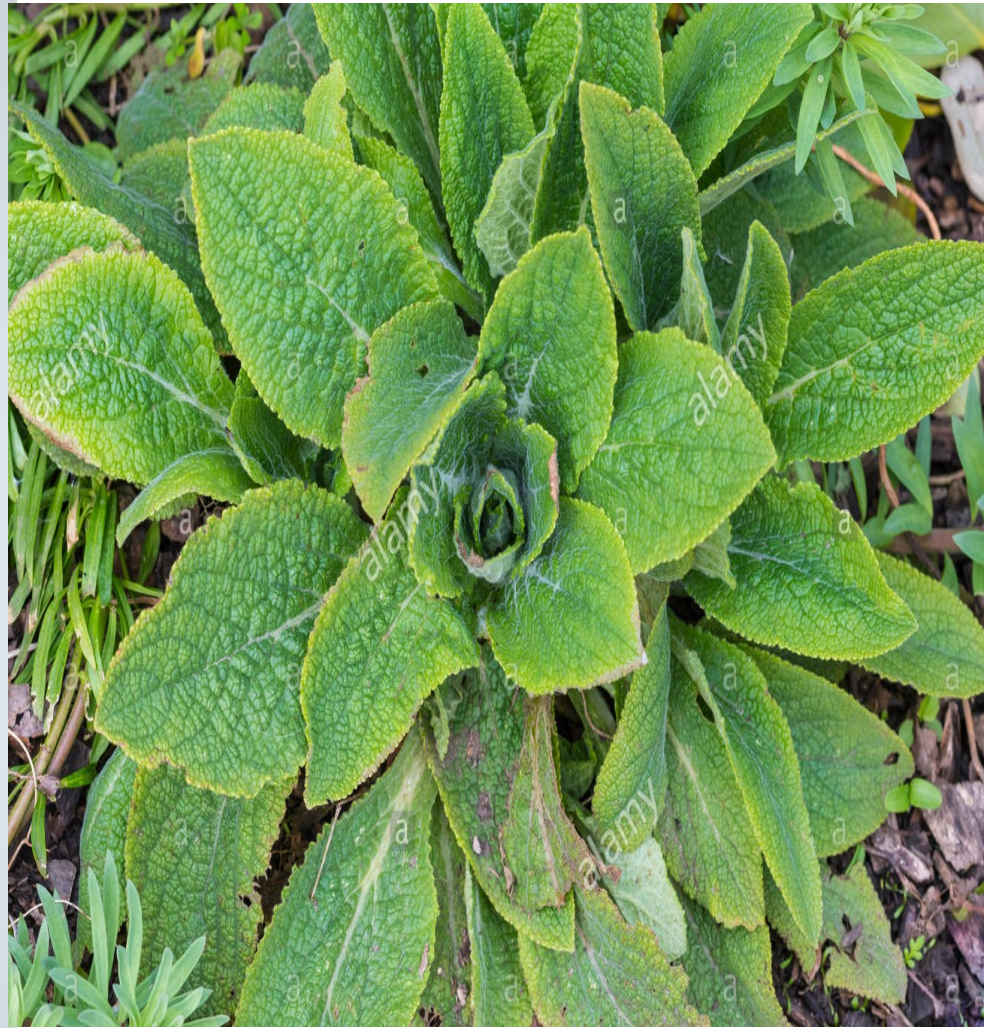
**Digitalis**

# DIGITALIS

- **Synonyms:** Foxglove leaves, digitalis leaves
- **Biological source:** It is obtained from dried leaves of *Digitalis purpurea*
- **Family :** Scrophulariaceae
- It is required to contain atleast 0.3 % of total cardenolides calculated as Digitoxin.
- After collection from the field, leaves are dried immediately at a temperature not exceeding 60<sup>0</sup>C and are stored in moisture proof container.



*Digitalis purpurea* – Purple foxglove



# Microscopy

- It is dorsiventral leaf
- It has anomocytic stomata
- Covering and glandular trichomes on both sides.
- Glandular trichomes are short, unicellular stalk and unicellular or bicellular head.
- Covering trichomes are uniseriate with collapsed cells.
- Digitalis is free from Ca oxalate crystals and sclerenchyma.
- Starch grains are present.
- Collenchyma is present.

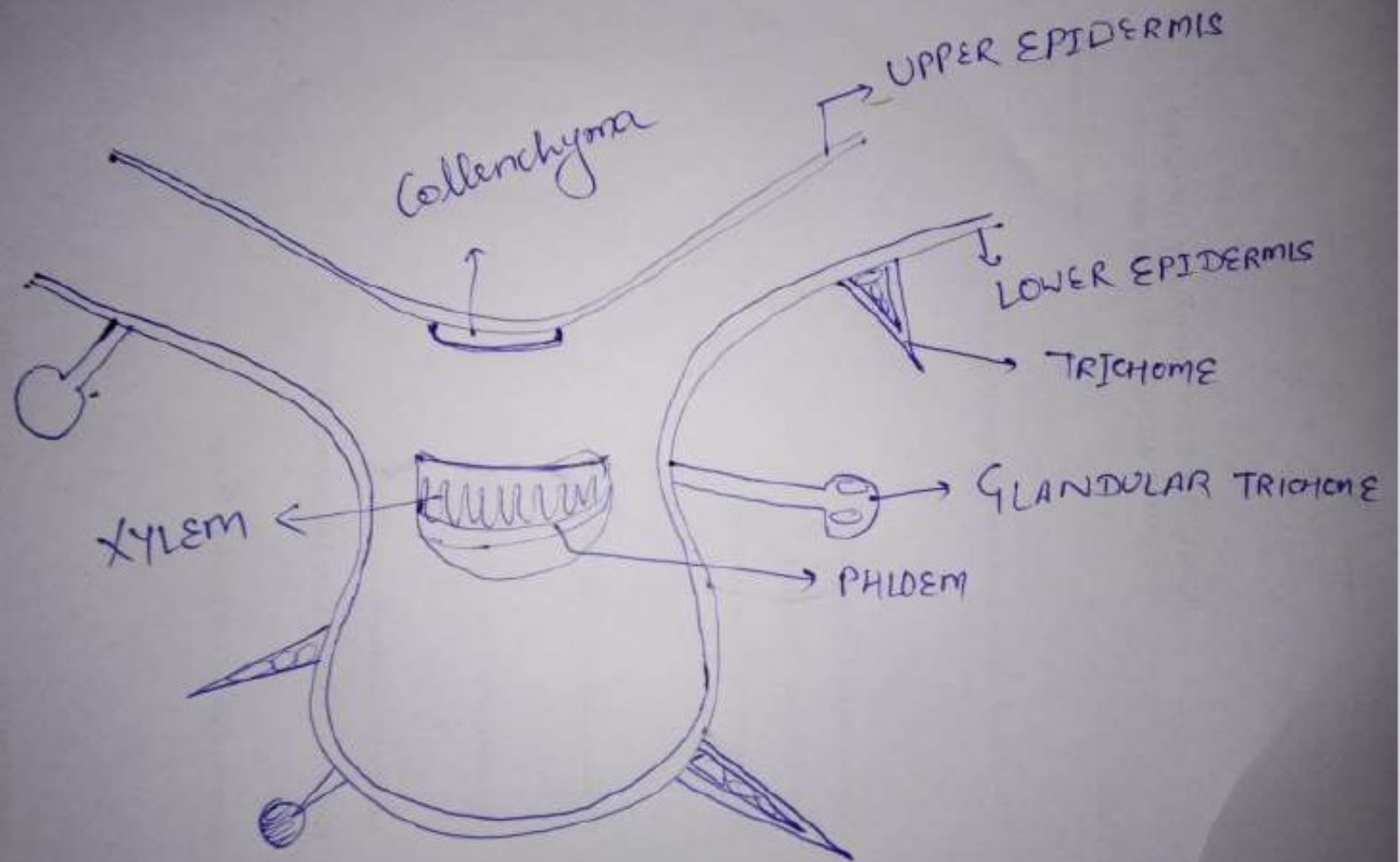
## **Geographical source**

- It is a biennial herb which is grown in England and also cultivated in India, Europe and USA.

## **Macroscopy**

- **Colour : Dark greyish green**
- **Odour : Odourless**
- **Taste : Distinctly bitter**
- **Size : length – 10 to 30 cm**
- **Width – 4 to 10 cm**





T.S of *Digitalis purpurea*

194  
Kotaka  
also see

# Digitalis : Chemical constituents

syn foxglove leaves

from dried leaves of *Digitalis purpurea*  
(F. Scrophulariaceae)

## ✓ chemical consti-

total cardiac glycosides ⇒ 0.2 - 0.45%

(steroi<sup>d</sup> glycosides)  
(fresh dried leaves)

Purpurea glycoside A

Enzy. H-OH

Digitoxin + glucose

H-OH

(Digitoxigenin + 3 digitoxose)  
a glycos

10  
cardiac glycoside  
(unstable)

Purpurea glycoside B

Enzy H-OH

Gitoxin + glucose

H-OH

20  
cardiac glycoside  
(stable)  
getoxigenin + 3 digitoxose

10  
glycoside  
(unstable)

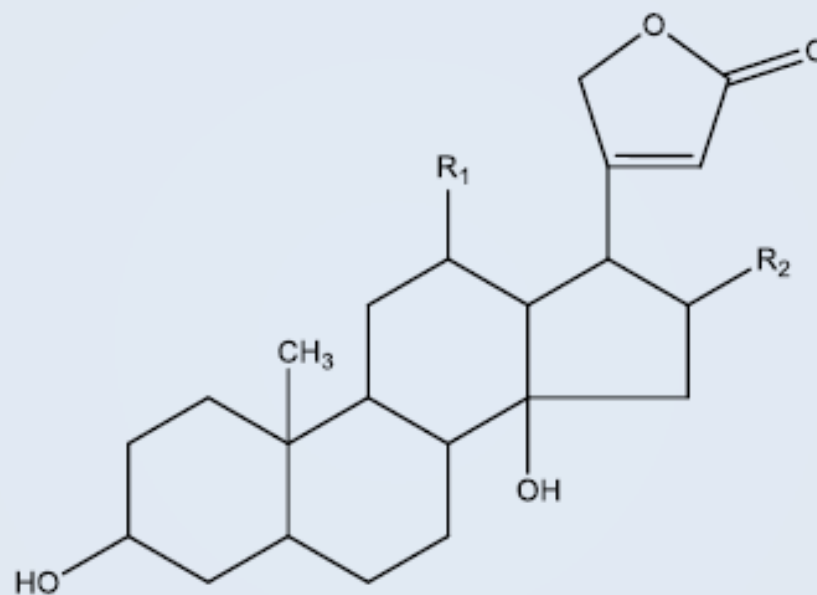
- Other -
- acetoxydigitoxin
  - Gitoxin
  - Verodoxin
  - glucoverodoxin

Saponin  
→ Digitonin  
→ Gitonin

Use -

glyco  
Agly cone

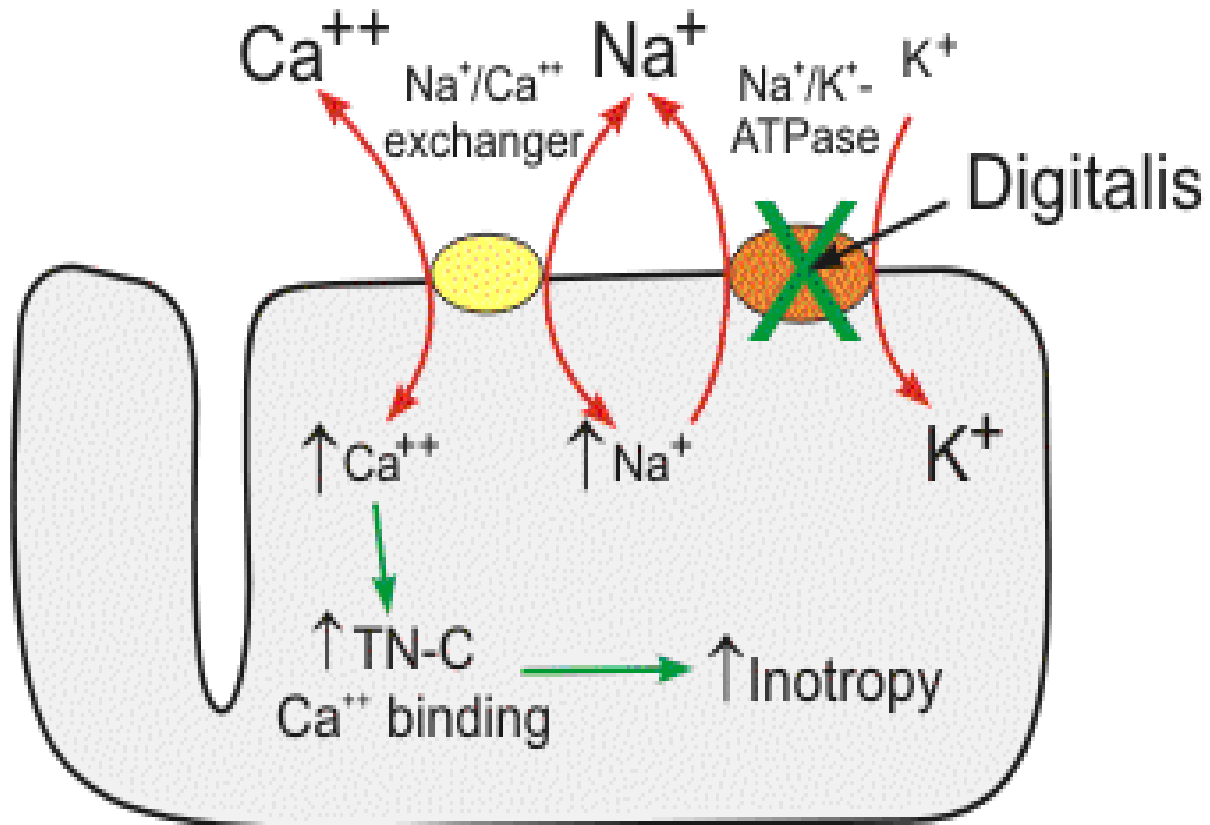
<b>Compounds</b>	<b>R1</b>	<b>R2</b>
Gitoxigenin	H	OH
Digitoxigenin	H	H





## Uses

- It is used in the treatment of congestive heart failure.
- Diuretics



It block the Na-K<sup>+</sup> ATPase pump of cardiac muscle



Increase the intracellular sodium



Increase in calcium ions



Result in forceful contraction of myocardium



Greater output per beat



Complete emptying of heart



delayed circulation improved



Oedema flush out