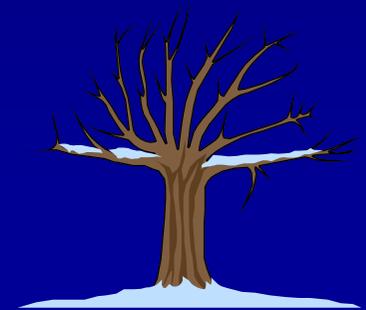




# Grapevine phenology

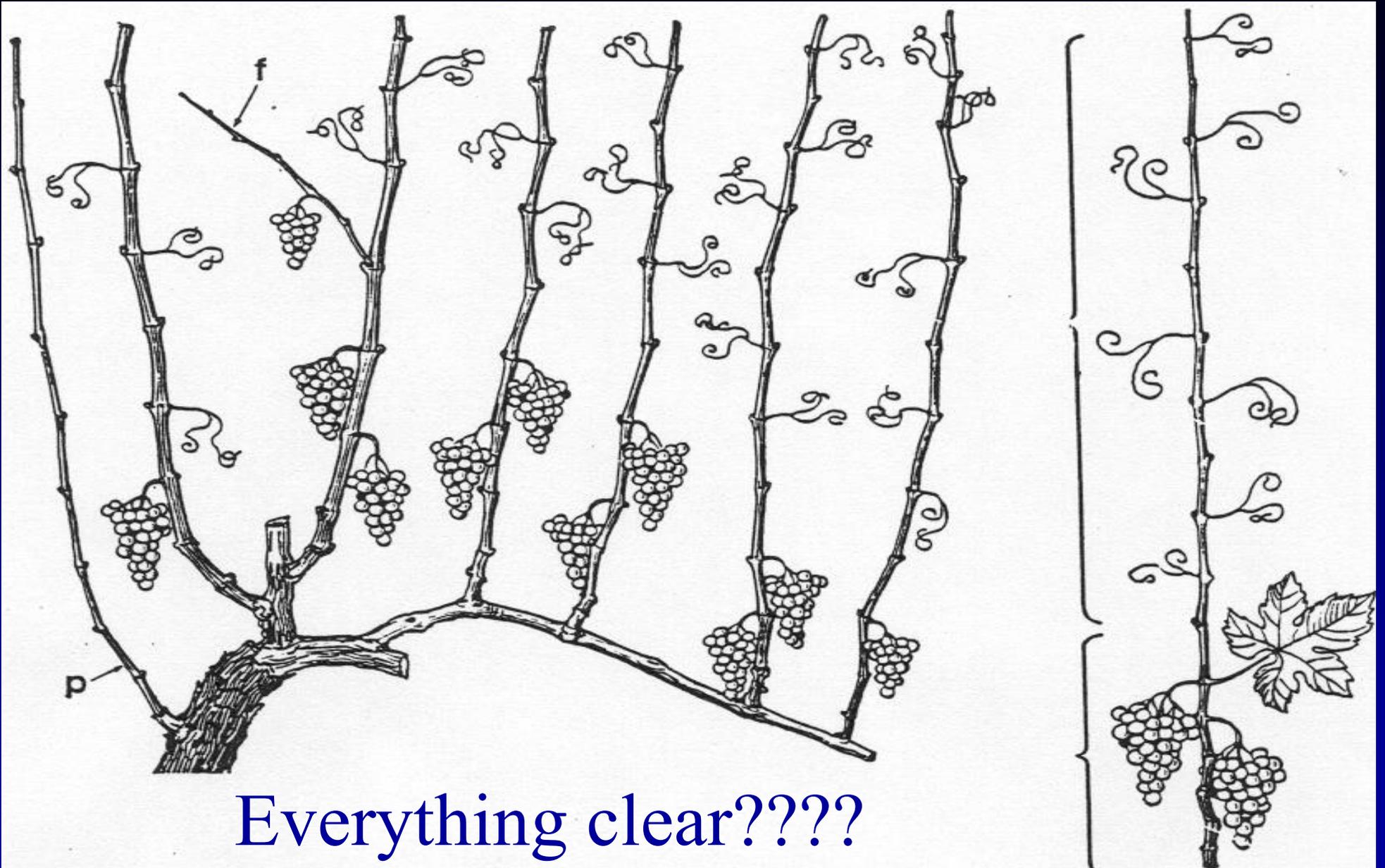
## The Annual Growth Cycle



# Phenology

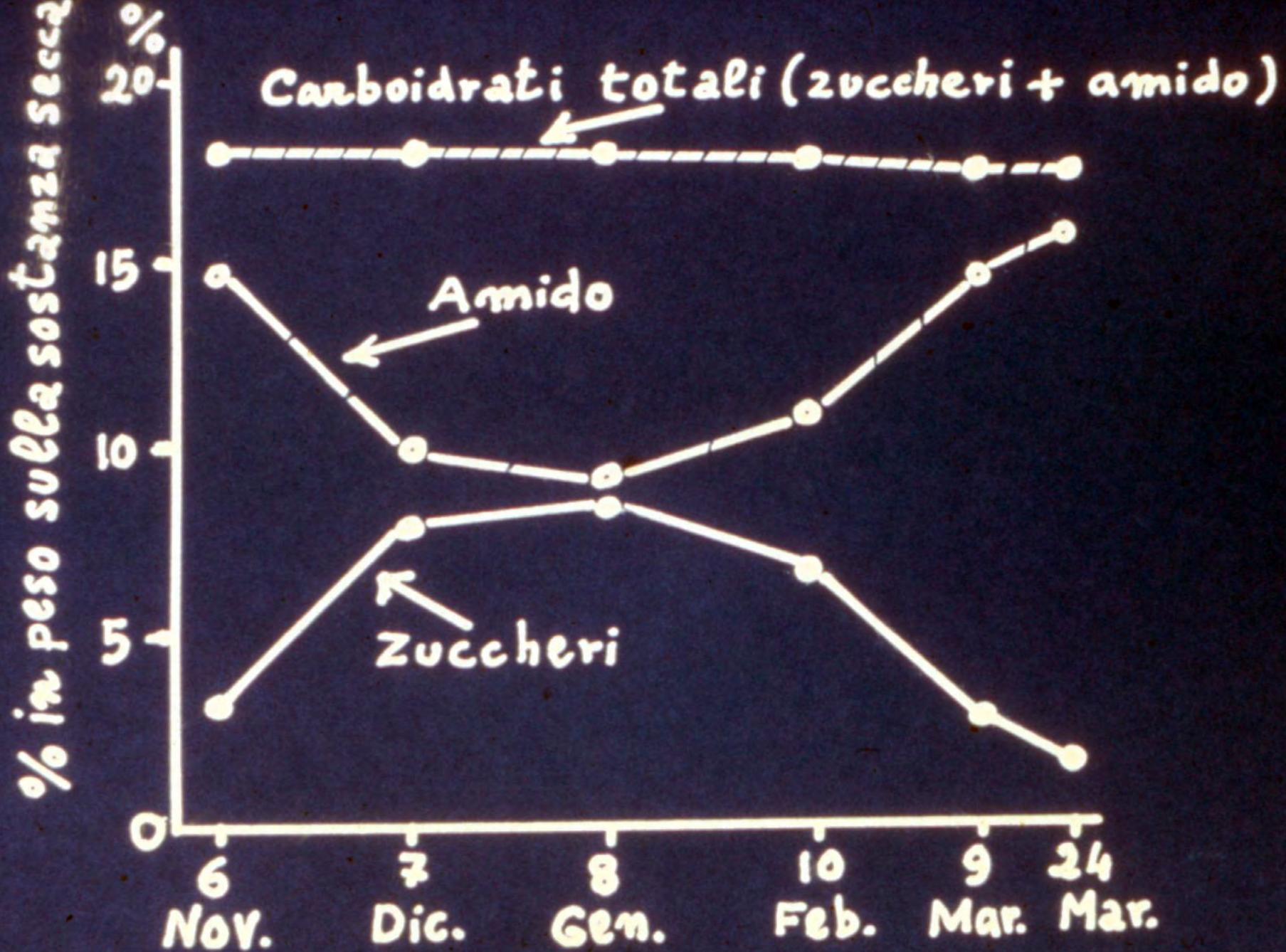
## Timing and duration of developmental processes

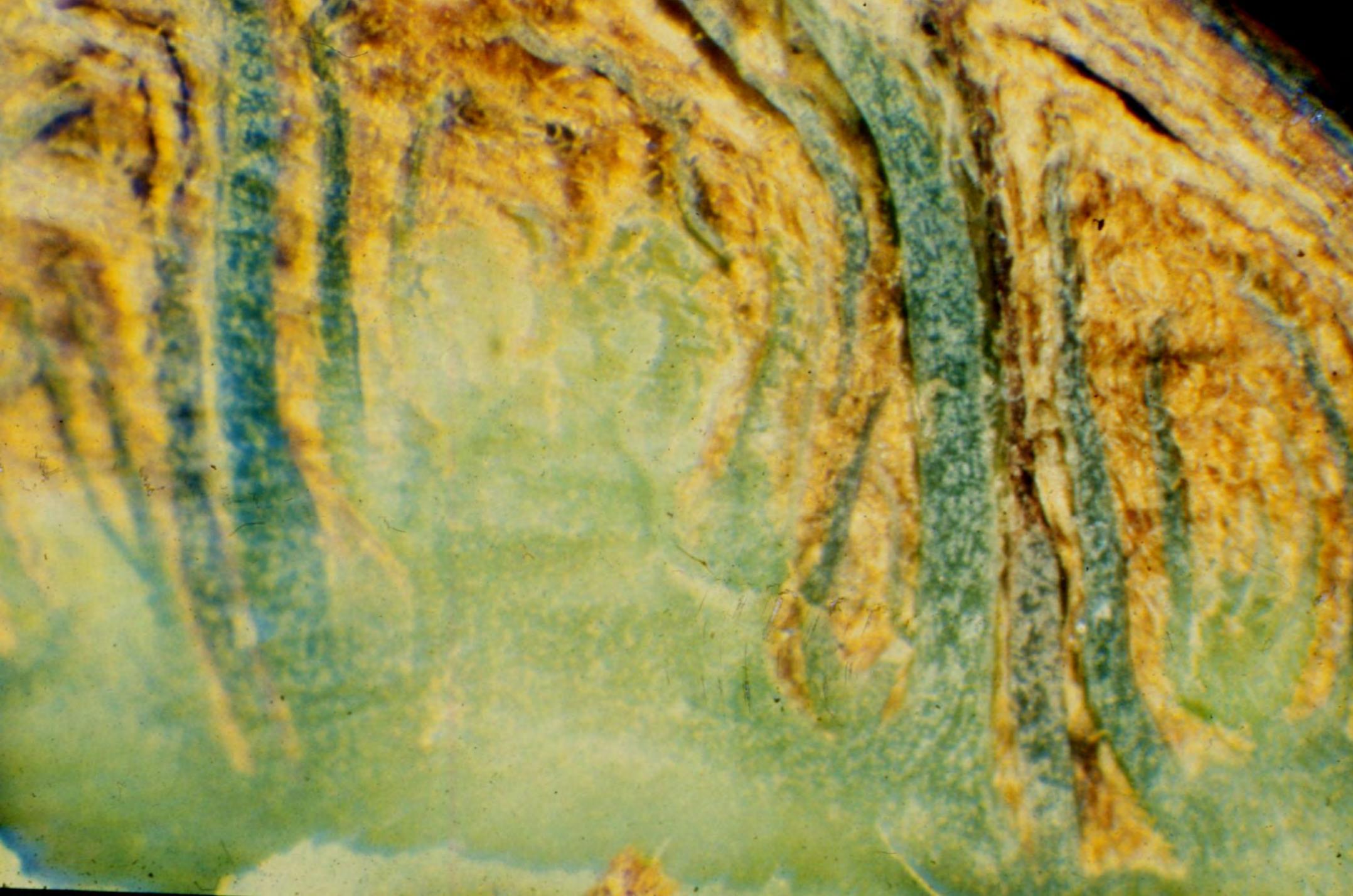
- **Definition of «phenological stage»**
- **Variability vs. cultivars**
- **Variability vs. location**
- **Variability vs. year (vintage)**
- **Special growing conditions**



Everything clear????













A) gemma ferma



B) + fiocco di cotone

**punta verde**



**foglioline visibili**



distese



grappoli visibili



**grappoli separati**





**bottoni fiorali**

bloom



Fase I



Fruit-set

Fase J



Fase L

Veraison



Veraison



Fase L

maturazione

Fase M



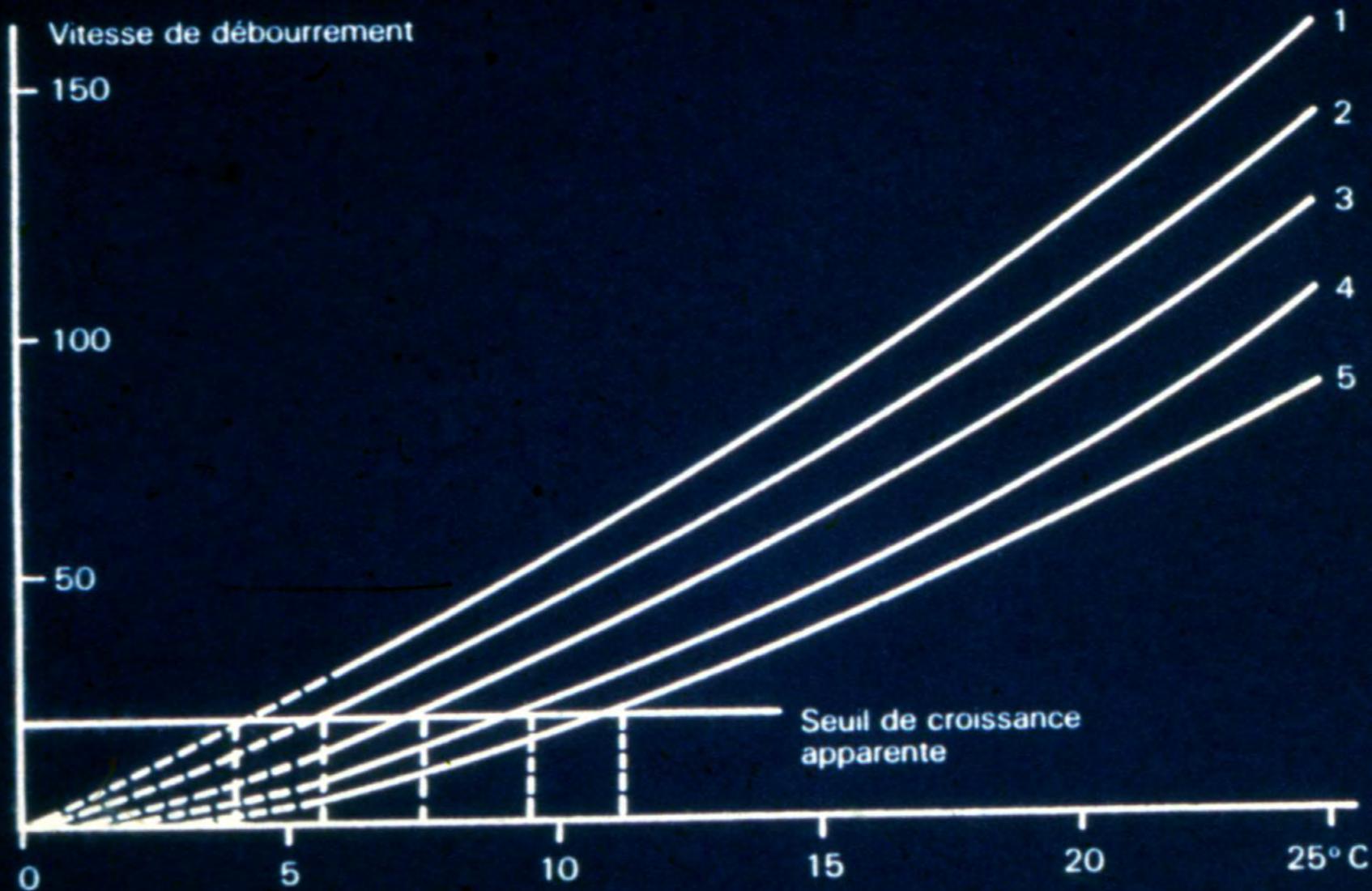
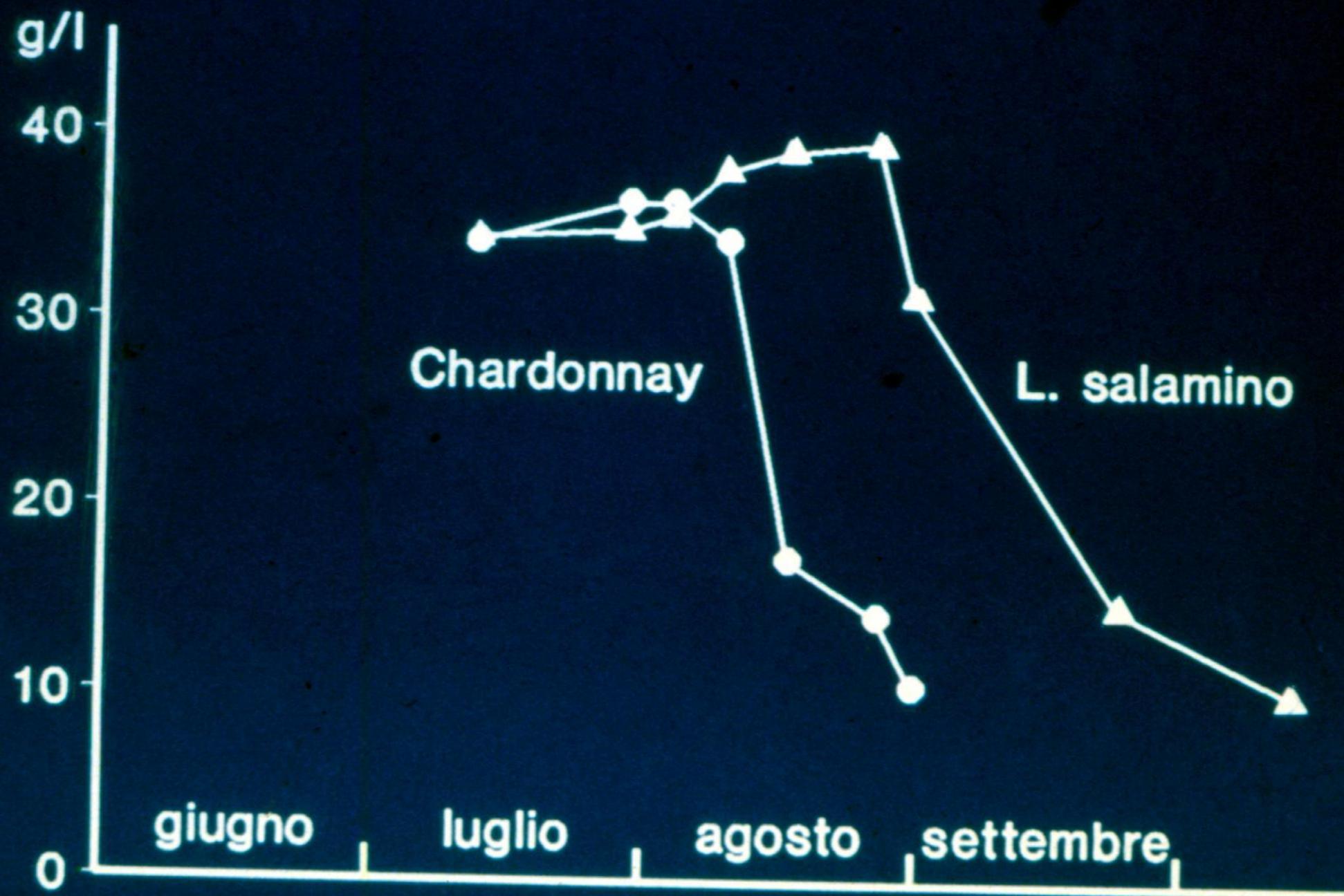
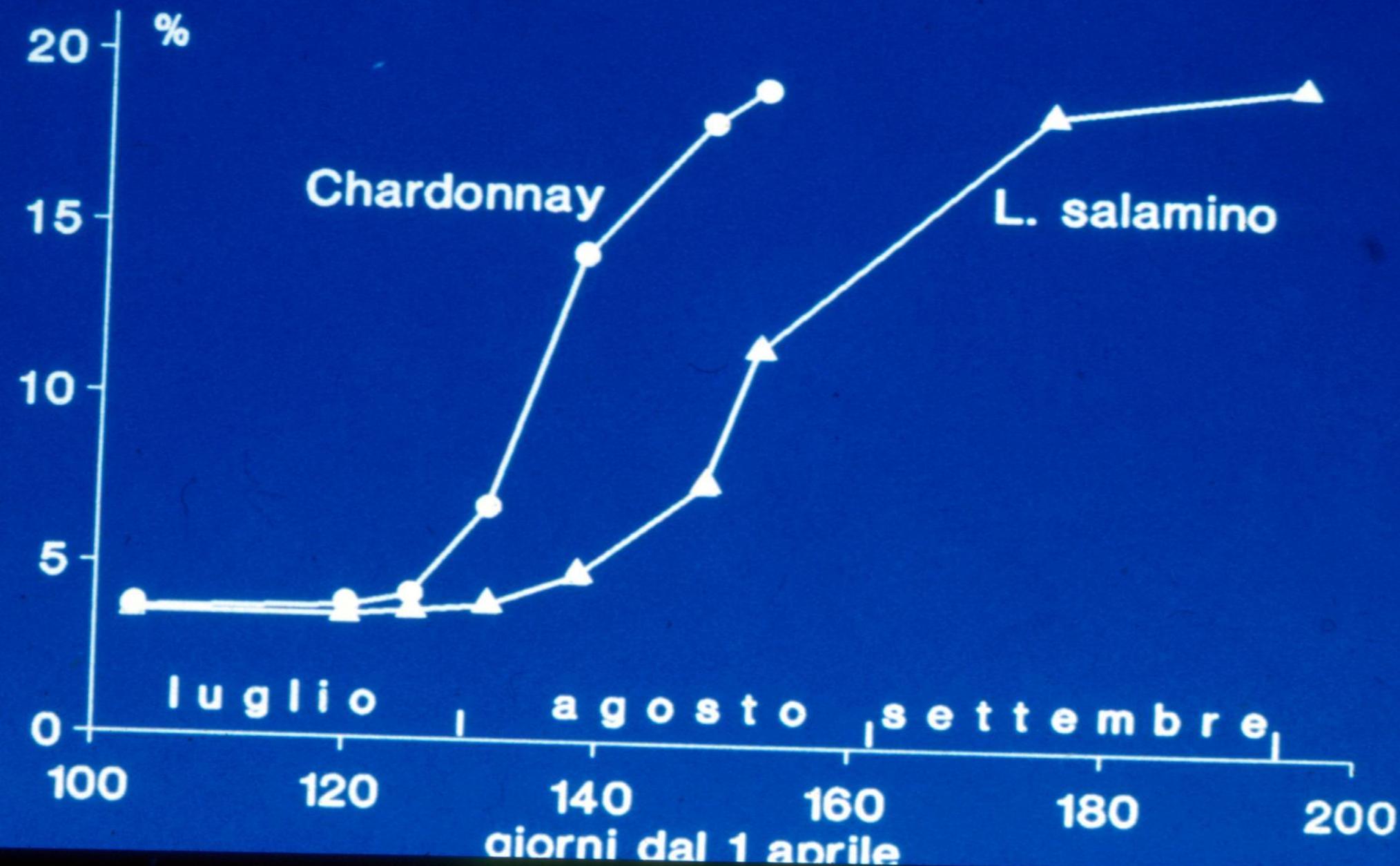


Fig. 3/6 Variation de la vitesse de débourrement en fonction de la température pour 5 variétés. (V. Thunbergii 1, Perle de Csaba 2, Gewurztraminer 3, Merlot 4, Ugni blanc 5) et détermination de leur seuil de croissance (POUGET, 1968).

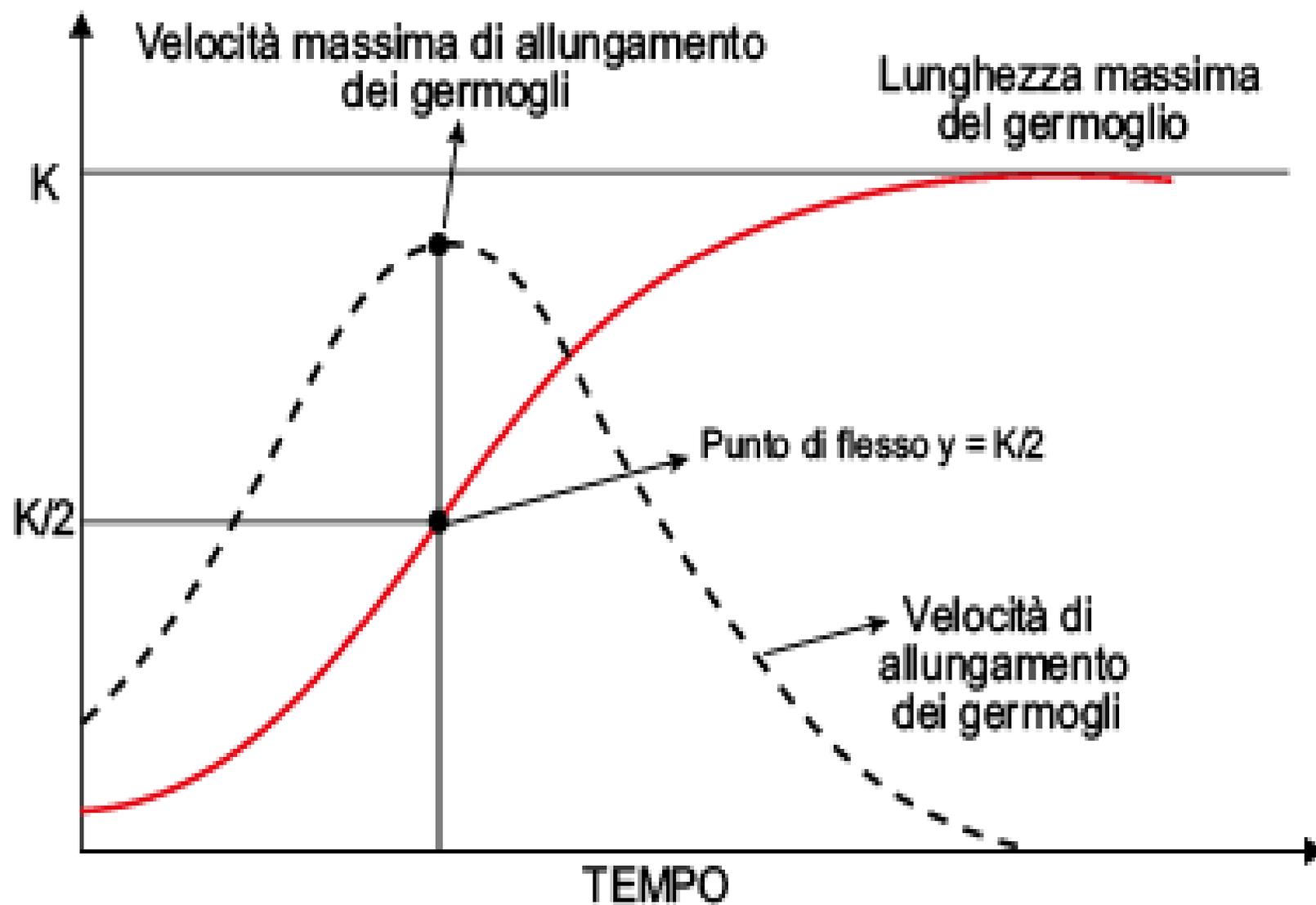
# Andamento dell'acidità nel 1990



# Accumulo di solidi solubili nel 1990

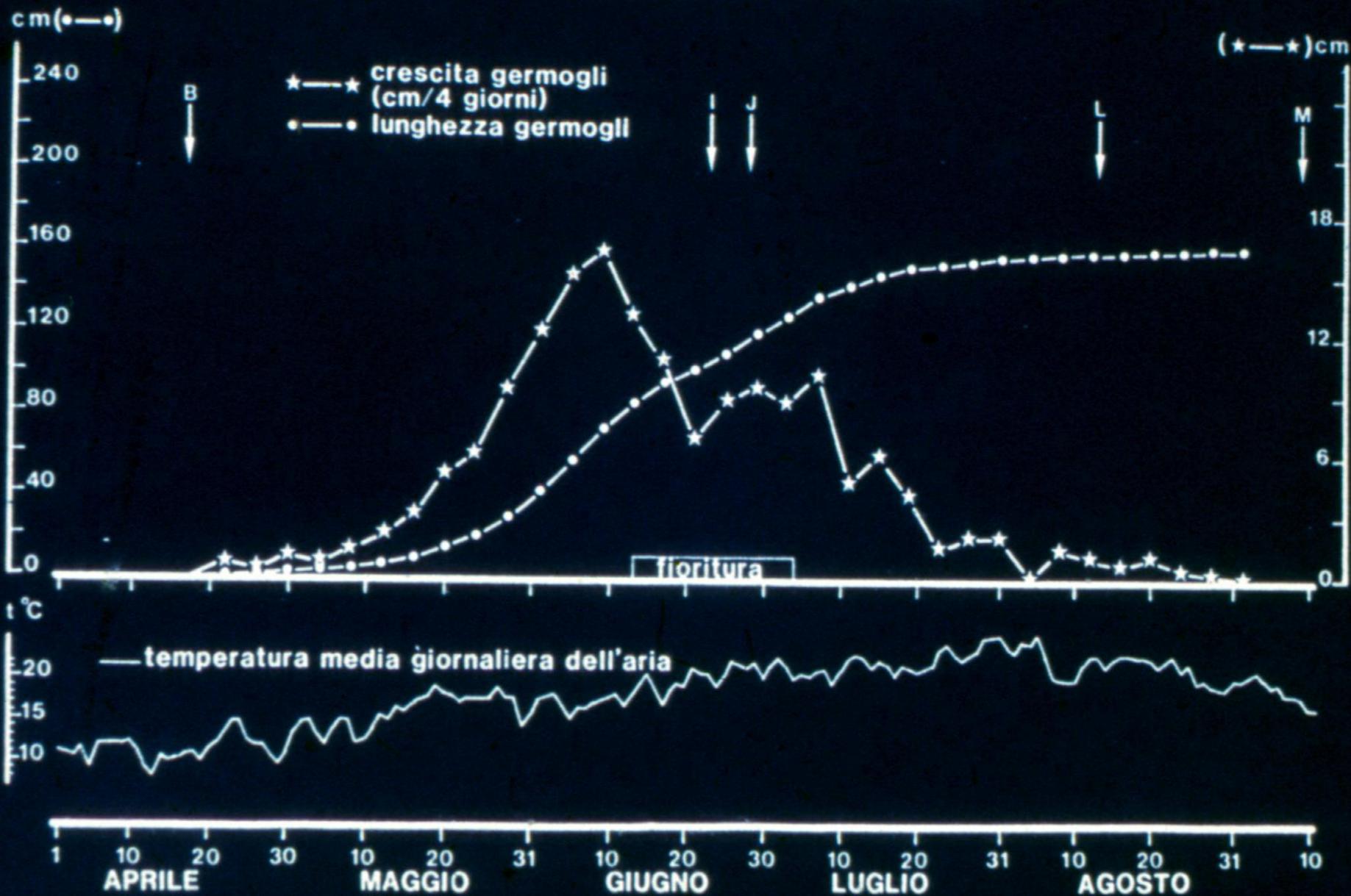






**ALBANA**

**Settefonti 1984-86**



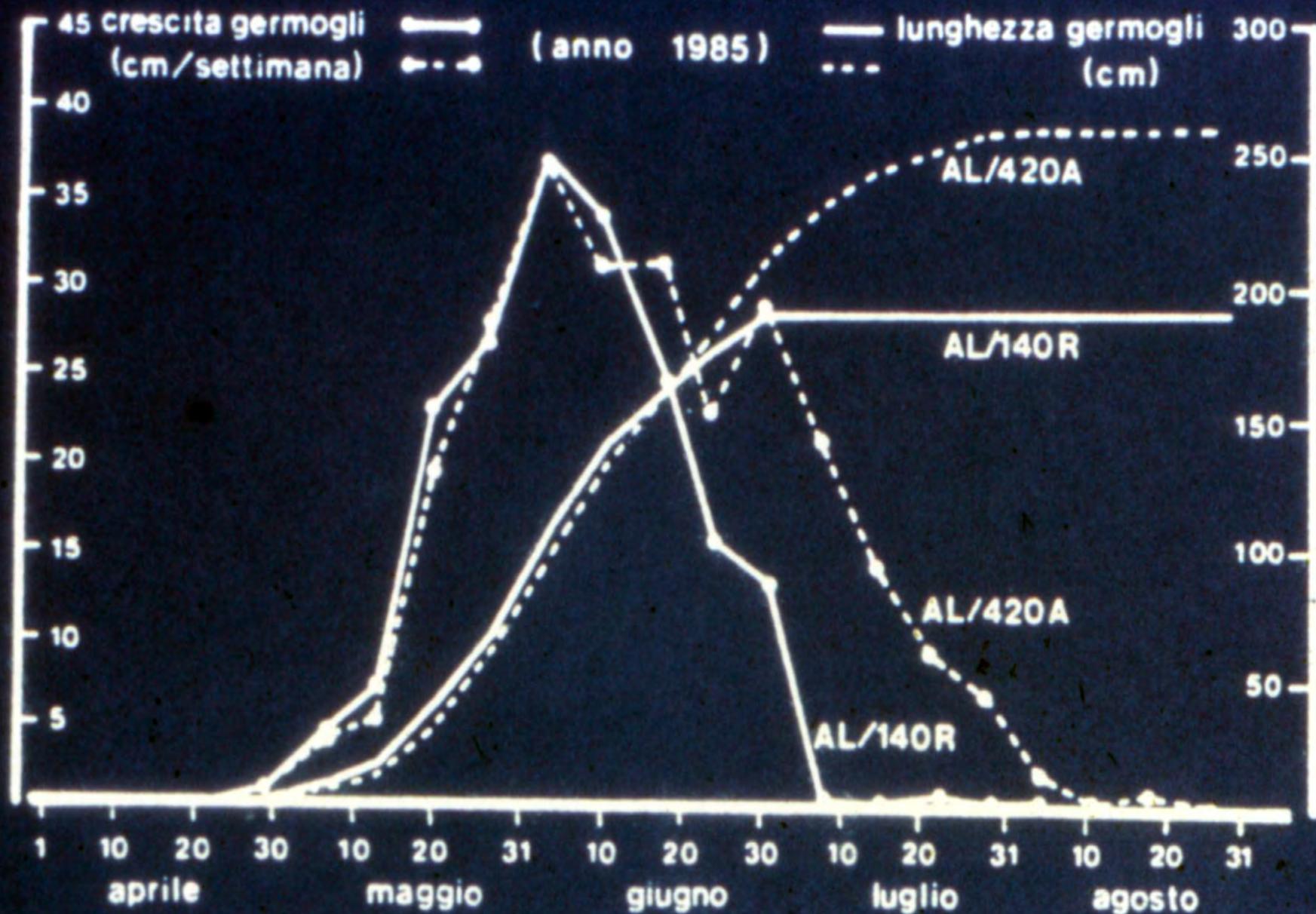


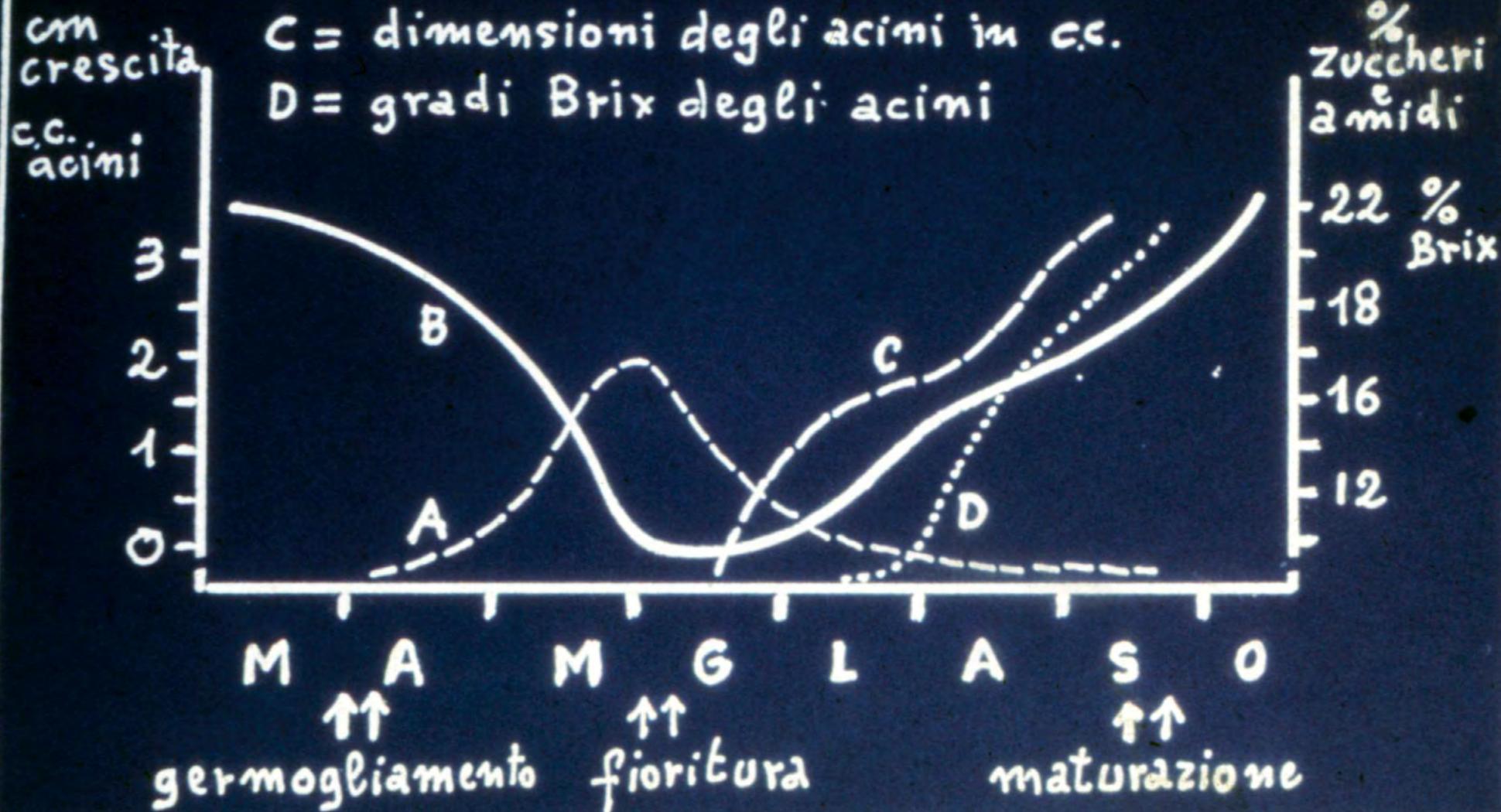
Figura I - Allungamento dei germogli e loro velocità di crescita nelle viti di «Albana» innestate su 140 R e su 420 A.

A = cm crescita germogli

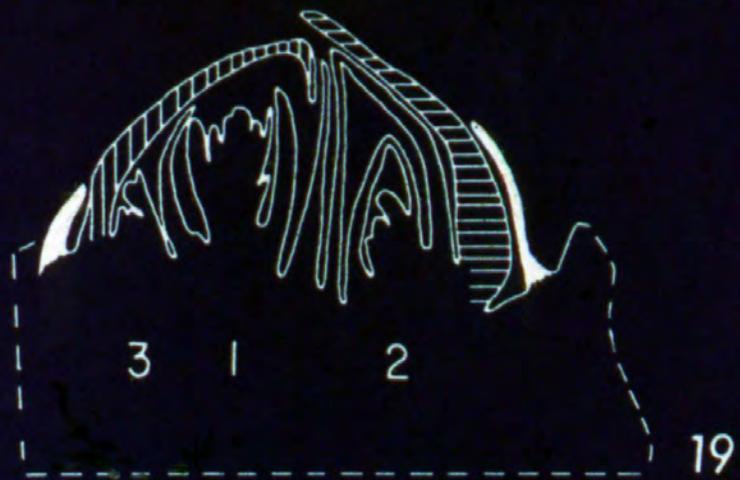
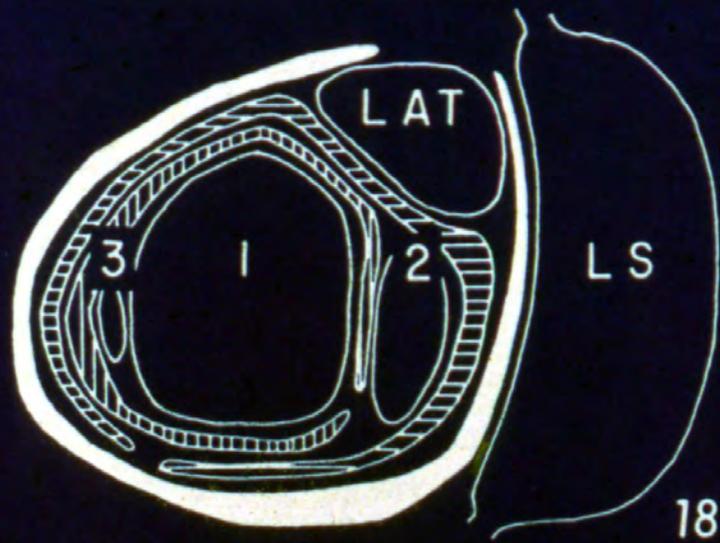
B = zuccheri e amidi in % peso secco

C = dimensioni degli acini in c.c.

D = gradi Brix degli acini



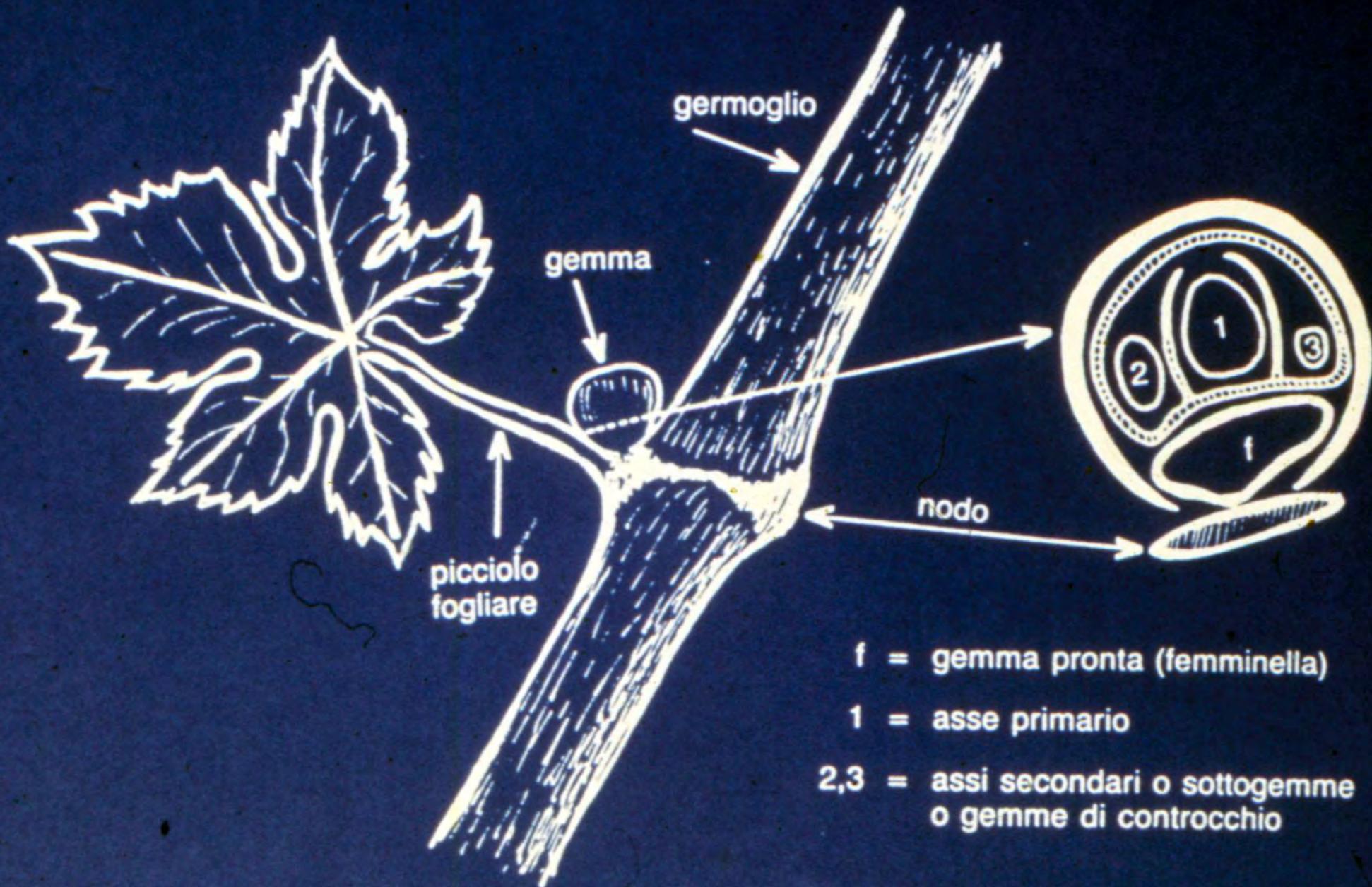
# **The biennial cycle of the dormant bud**





B) + fiocco di cotone





f = gemma pronta (femminella)

1 = asse primario

2,3 = assi secondari o sottogemme  
o gemme di controcchio



FIG. 1 - In sezione longitudinale, gemma pronta con, a sinistra, la sua squama basale ed all'ascella della squama la gemma ibernante; (KHALILI, 1961).

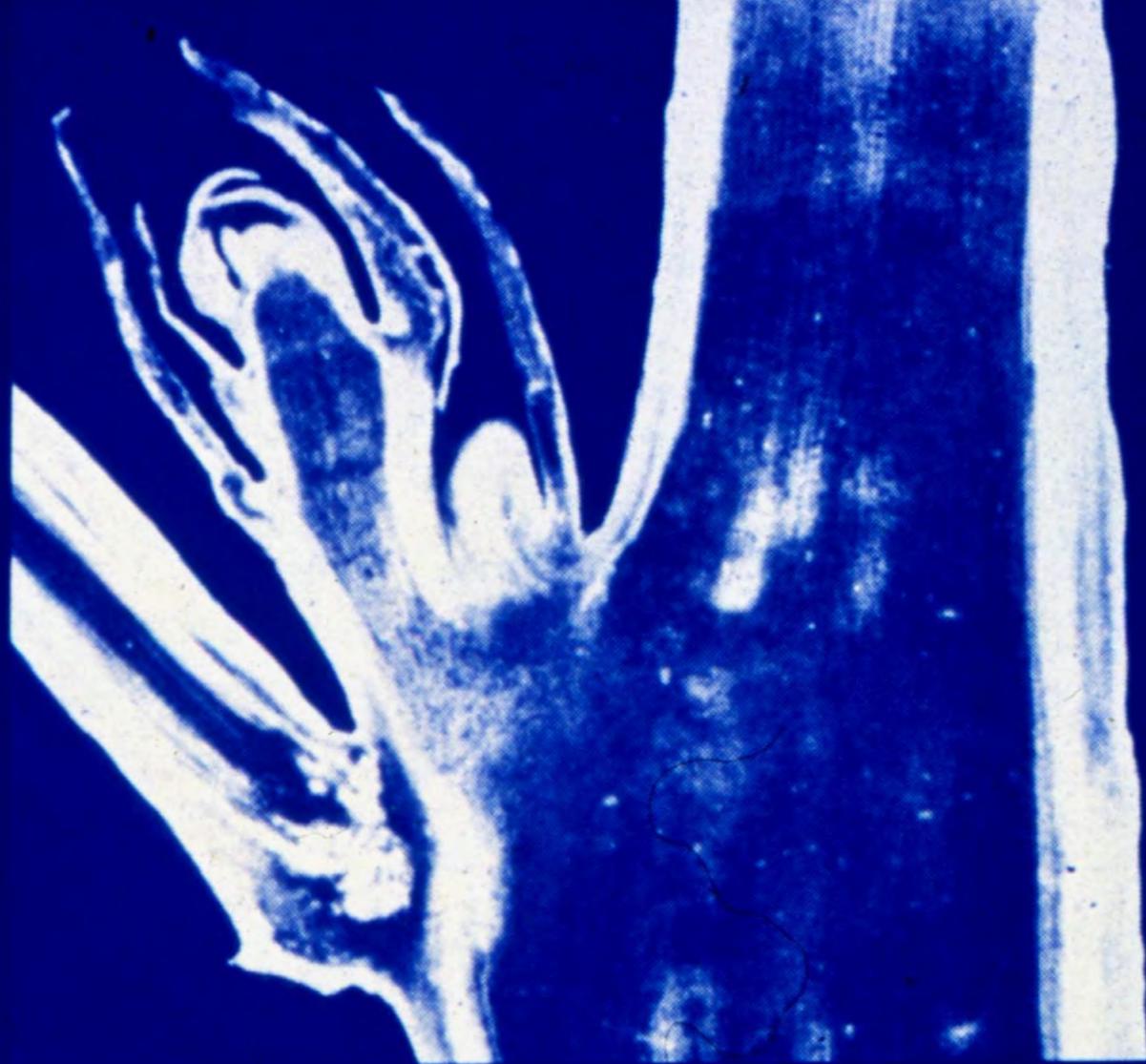


Fig. 3 - Sezione longitudinale mediana di un tralcio in corrispondenza di un nodo, con già bene sviluppata la gemma pronta all'ascella del picciolo fogliare.

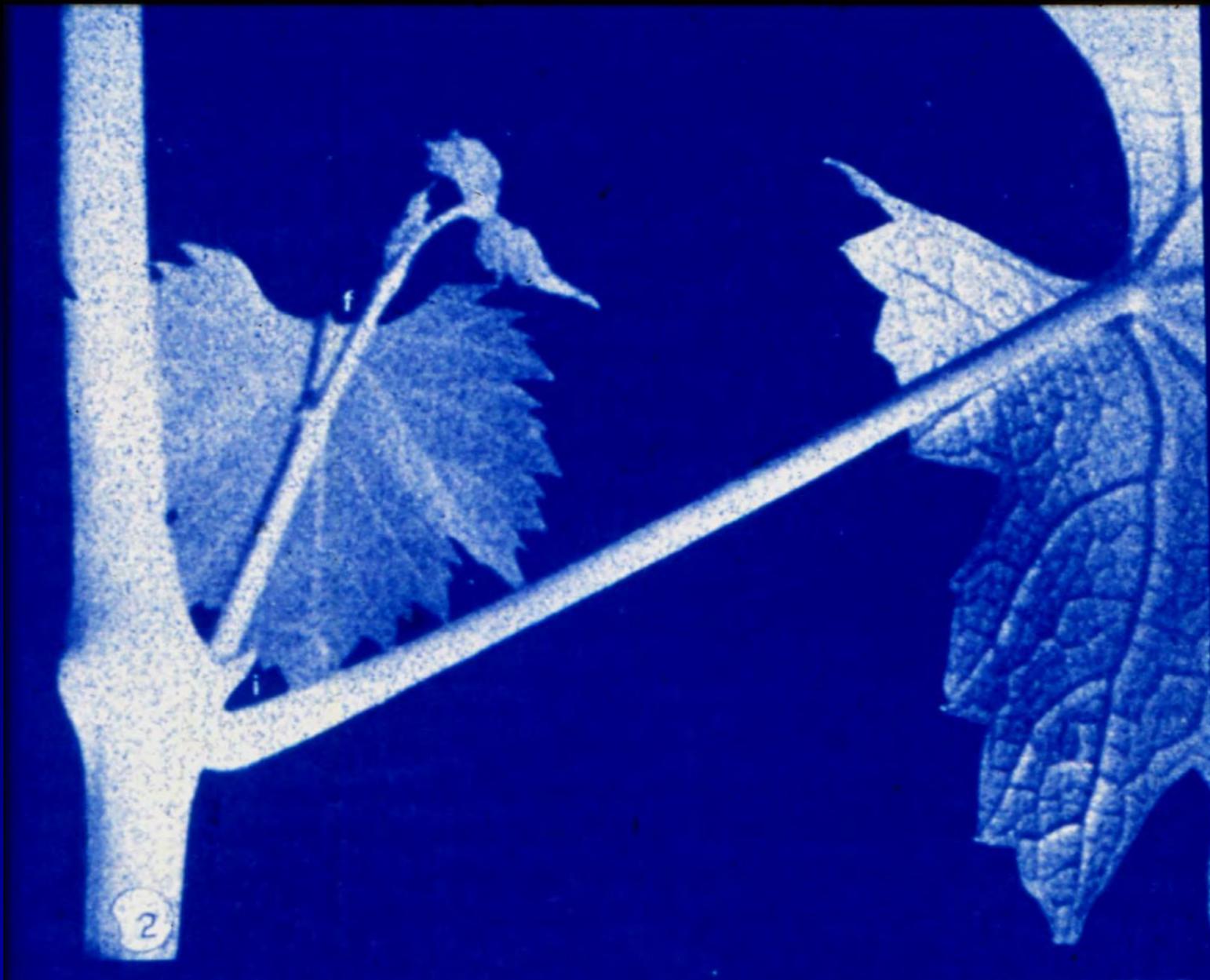
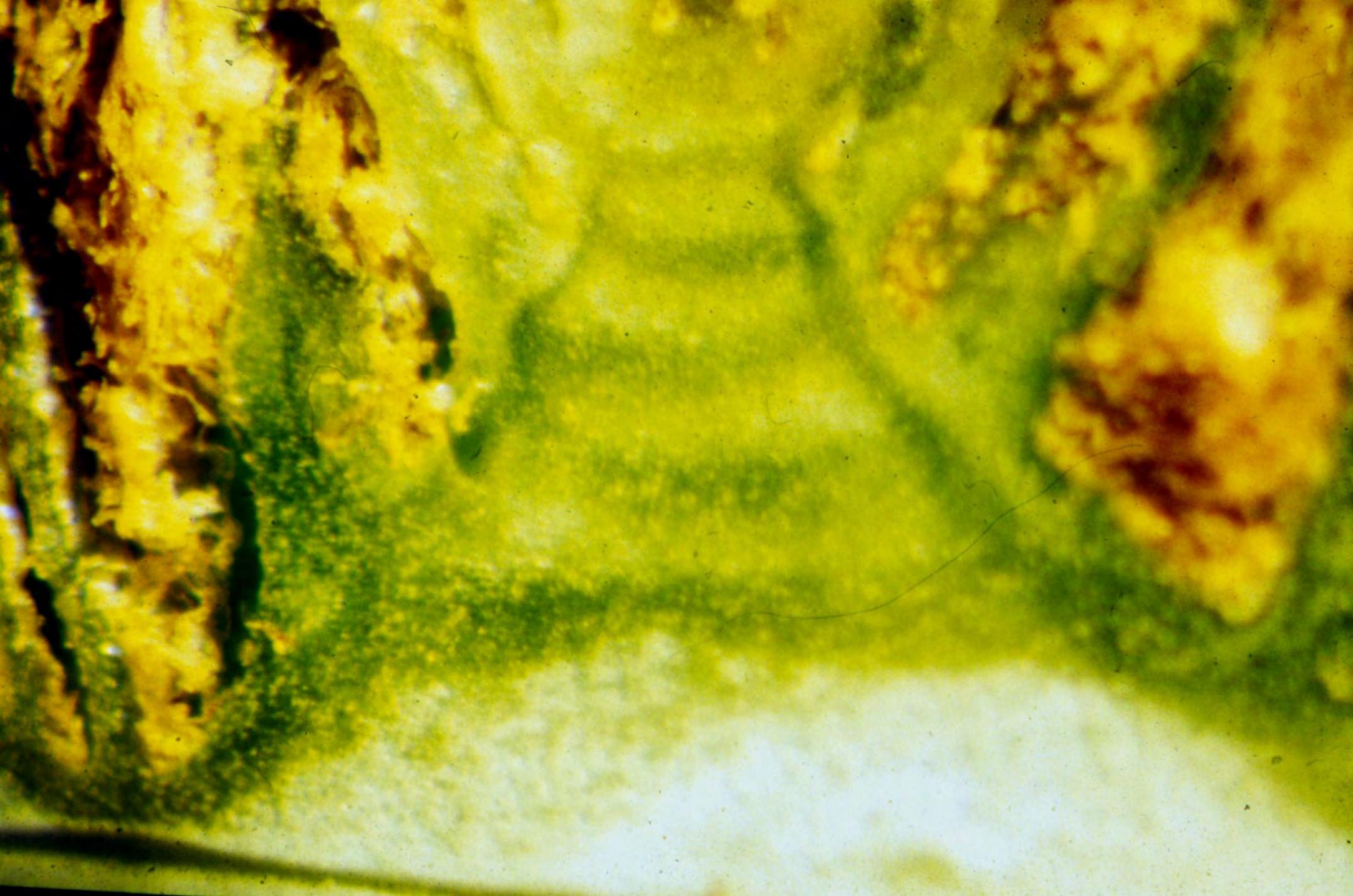


FIG. 2 - Germoglio di « *Vitis vinifera L.* » cv. Freisa - (i) gemma iber-nante - (f) femminelle. Chieri (Torino) 26-5-1969.



# Yield elaboration

## Season 1 : inflorescences development

*Spring*  
Season 1

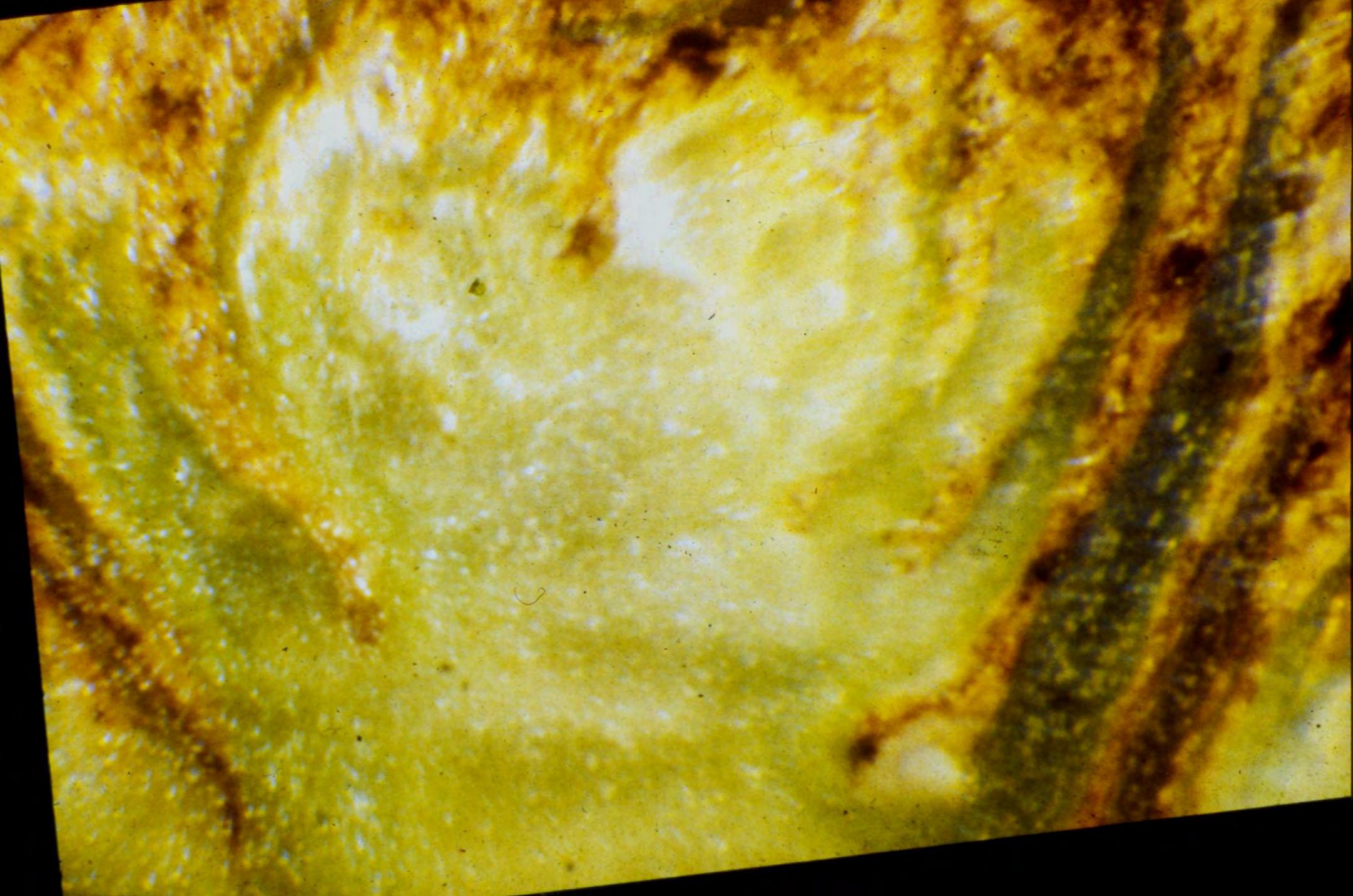
Dormancy

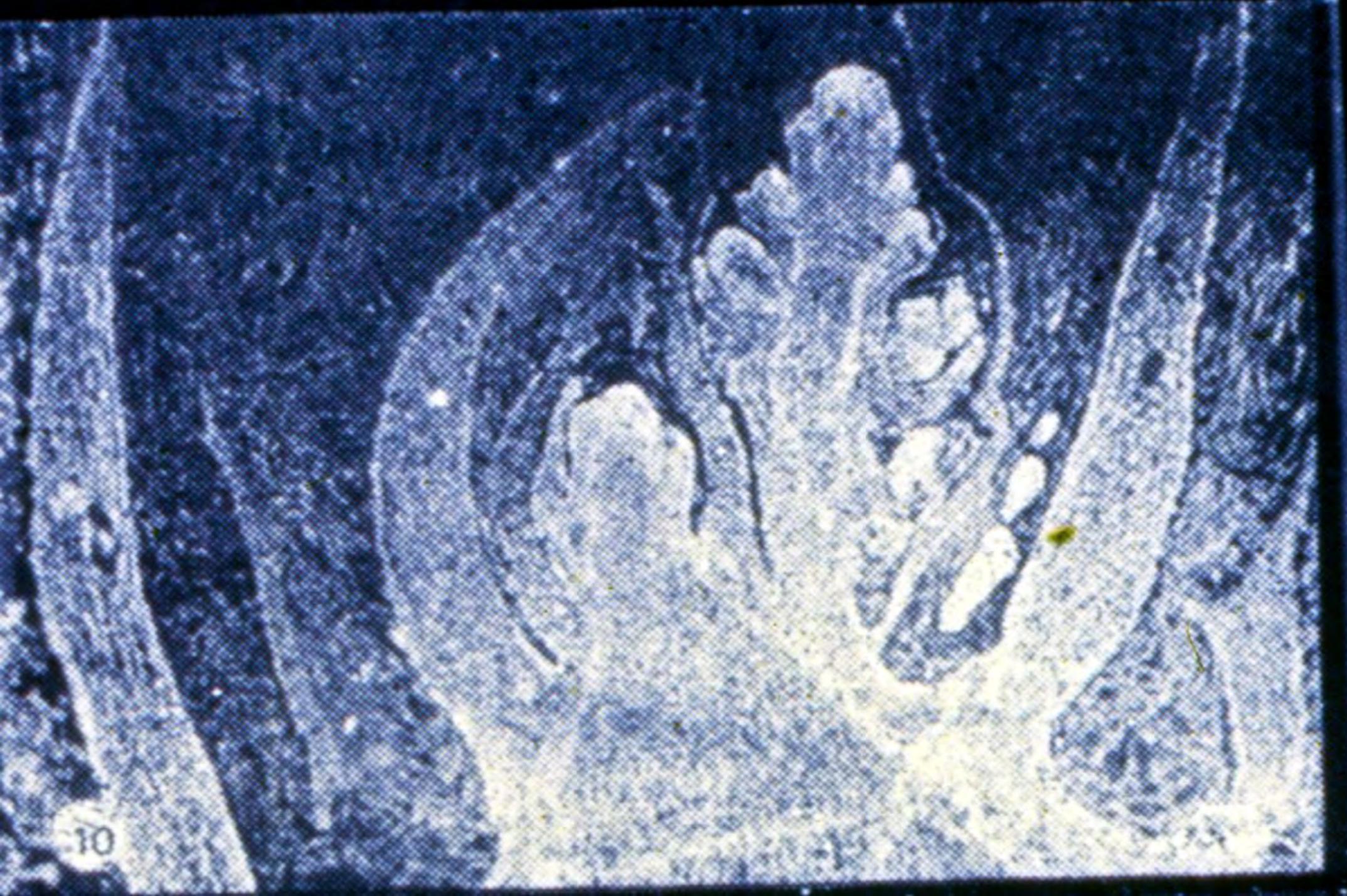
**Floral initiation**

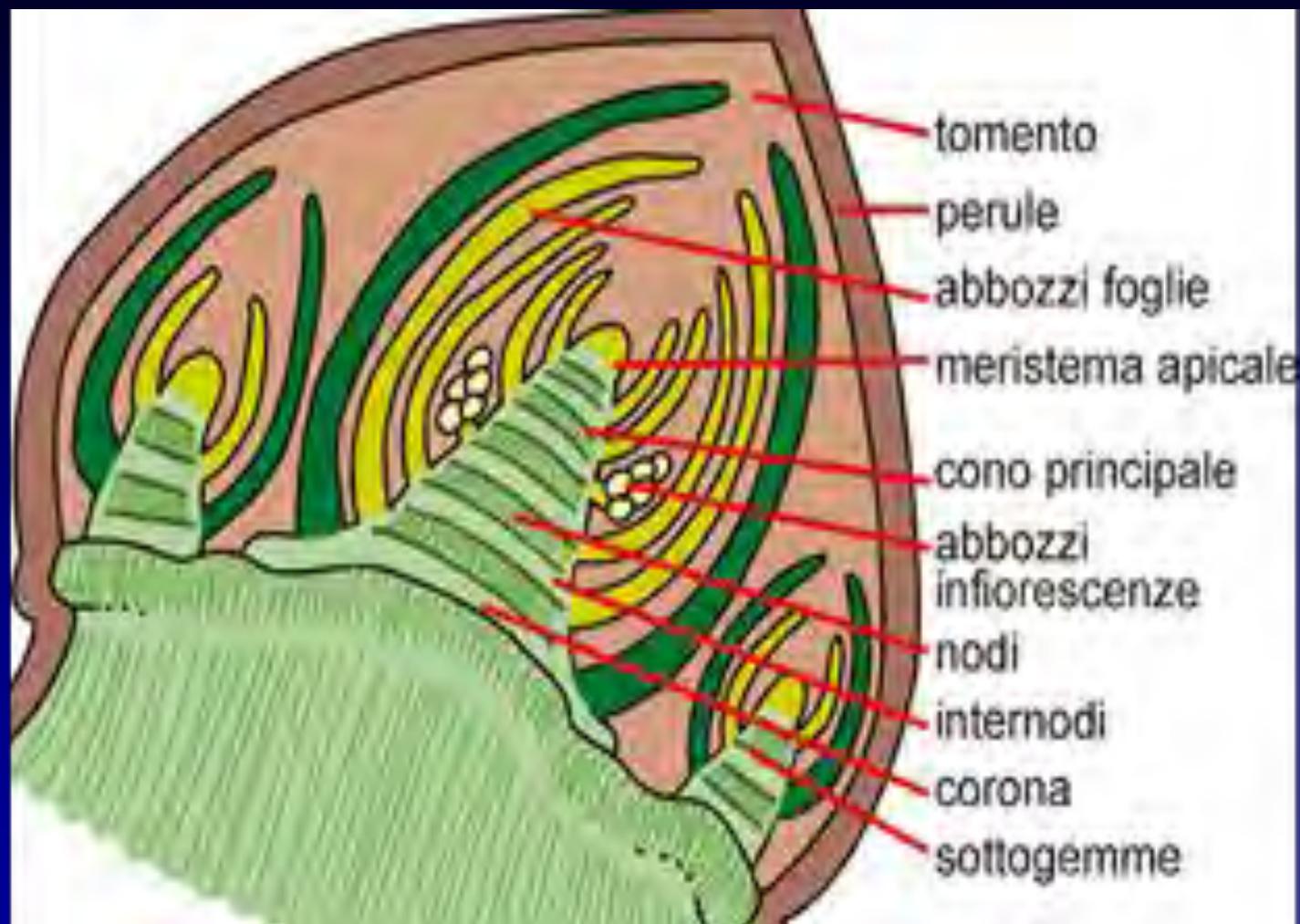
Anlage → Inflorescence primordium → Peduncle primordium

↓  
Primordia of rachis and branches













# Yield elaboration

## Season 2 : flower development

Early spring  
Season 2

