GOOD QUALITY GRAPES STARTS IN THE VINEYARD
BERRY DEVELOPMENT

PHASE I

PHASE II

PHASE III

Fruit set

Cell division

Cell expansion

Véraison

Sugar accumulation

Ripe

Time after flowering
BERRY DEVELOPMENT – PHASE I

- **CELL DIVISION!!!!!!!**

- Some cell enlargement
BERRY DEVELOPMENT – PHASE II

- Lag phase - No cell division
- Veraison – chlorophyll breakdown
- Cell walls ‘softens’ to prepare for cell enlargement
BERRY DEVELOPMENT – PHASE III

- Cell expansion phase
- Due to the import of water and sugars
ALL DEVELOPMENT PHASES ARE IMPORTANT BUT FOR QUALITY, PHASE I IS KEY
WHY IS MORE CELLS BETTER??

- **Amount of cells in a berry** affect:
  - Berry firmness
  - Dry mass
  - Lower susceptibility to fungal attack and decay
PHASE I – Cell division

- Weather conditions:
  - Optimal temperatures: 20 - 25°C
    - >35°C = smaller berries
PHASE I – Cell division

- Farming practices:
  - Water stress = less cells
  - Poor canopy management = overshading = less cells
PHASE I – Cell division

- Farming practices:
  - Poor root development = less cells
  - Suboptimal growth = less cells
INCREASE CELLS BY FARMING PRACTICES

- Stimulate hair root development
  - Active shoot growth
  - Auxin/cytokinin based bio stimulants (kelp products or other)
  - Remove competition between shoots/bunches early as possible
  - Organic material
INCREASE CELLS BY FARMING PRACTICES

- Protect hair roots
  - Nematode control
  - Salinity management – soil and water
  - pH management
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- **Thinning** of bunches
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- Incorporate enough Ca and Si into cell walls – mechanical barrier to fungal attack
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

• Take care – water status of vine should return to ‘normal’ after rain
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- Too much Gibb and CPPU may make the rachis stiff and entrance wounds for secondary infections may occur
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- Manage Nitrogen:
  - \(N\) = Ripening takes longer
  - \(N\) = Lowers mechanical resistance of berries against *Botrytis* infection
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- Follow a preventative *Botrytis* spraying program
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- Prevent/remove **any** physical damage!!

- Powdery Mildew
- Anthracnose
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- Prevent/remove any physical damage!!

- **Thrips**
- **Bollworm**
- **Fruit fly**
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

- Prevent/remove any physical damage!!

Hail  Birds  Sunburn
GENERAL FARMING PRACTICES FOR BETTER POST HARVEST QUALITY

• Prevent/remove any physical damage!!
Baie Dankie  Thank You