Developing BOM for Agricultural Products to Increase Productivity

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Efficient and safe production processes in sustainable agriculture and forestry

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Agenda

- Green ornamentals
- The market
- Objectives
- Farm under study
- Farm processes
- BOM
- Summary and conclusions

Green Ornamentals

Pittosporum (Pittosporum tobira)

- Height: up to 5 m
- Width: up to 2 m
- Branch length: up to 0.95 m
- Row width: 0.5 m
- Planting intervals: 0.6 m

Green Ornamentals

Aralia (Aralia Fatsia japonica)

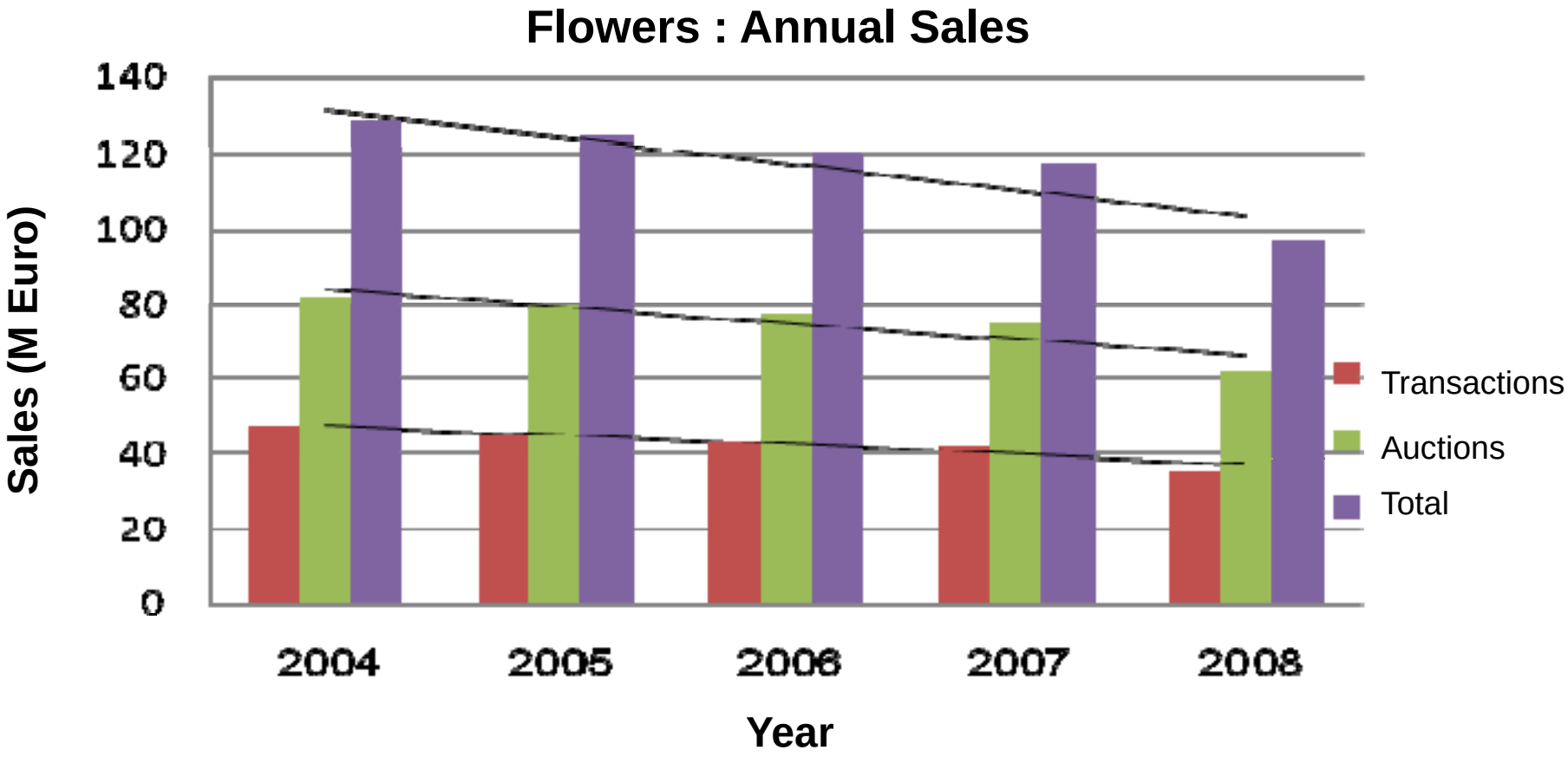
- Height: up to 3.5 m
- Width: up to 1.6 m
- Branch length: up to 0.65 m
- Row width: 0.55 m
- Planting intervals: 0.6 m

Green Ornamentals

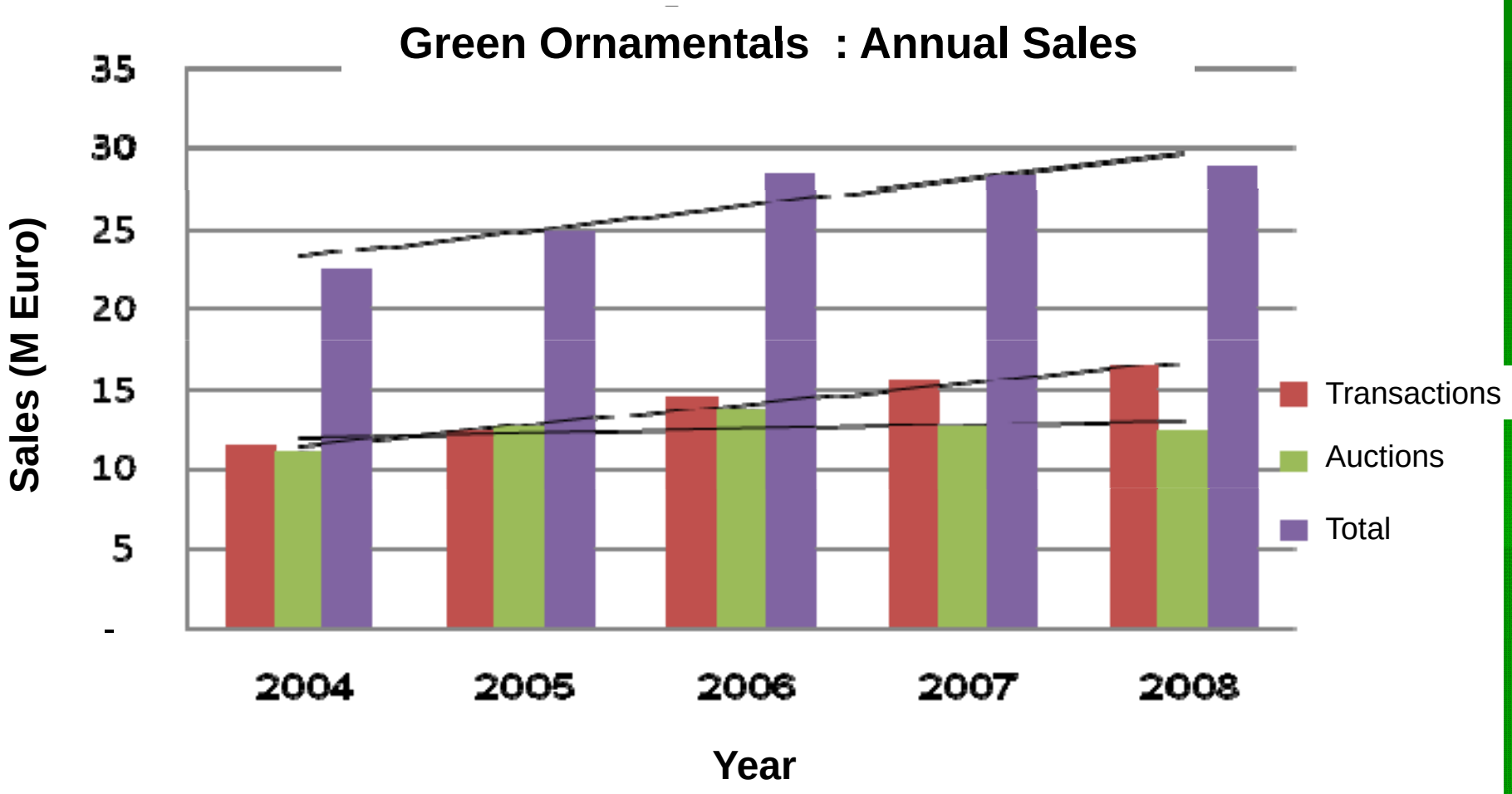
Aspidistra Elation Blume

- Family- *Liliaceae*
- Origin- China, Japan
- Stem Length-60-80 cm
- Stem Weight – 12-20 gm
- Colors – Light/Dark Green

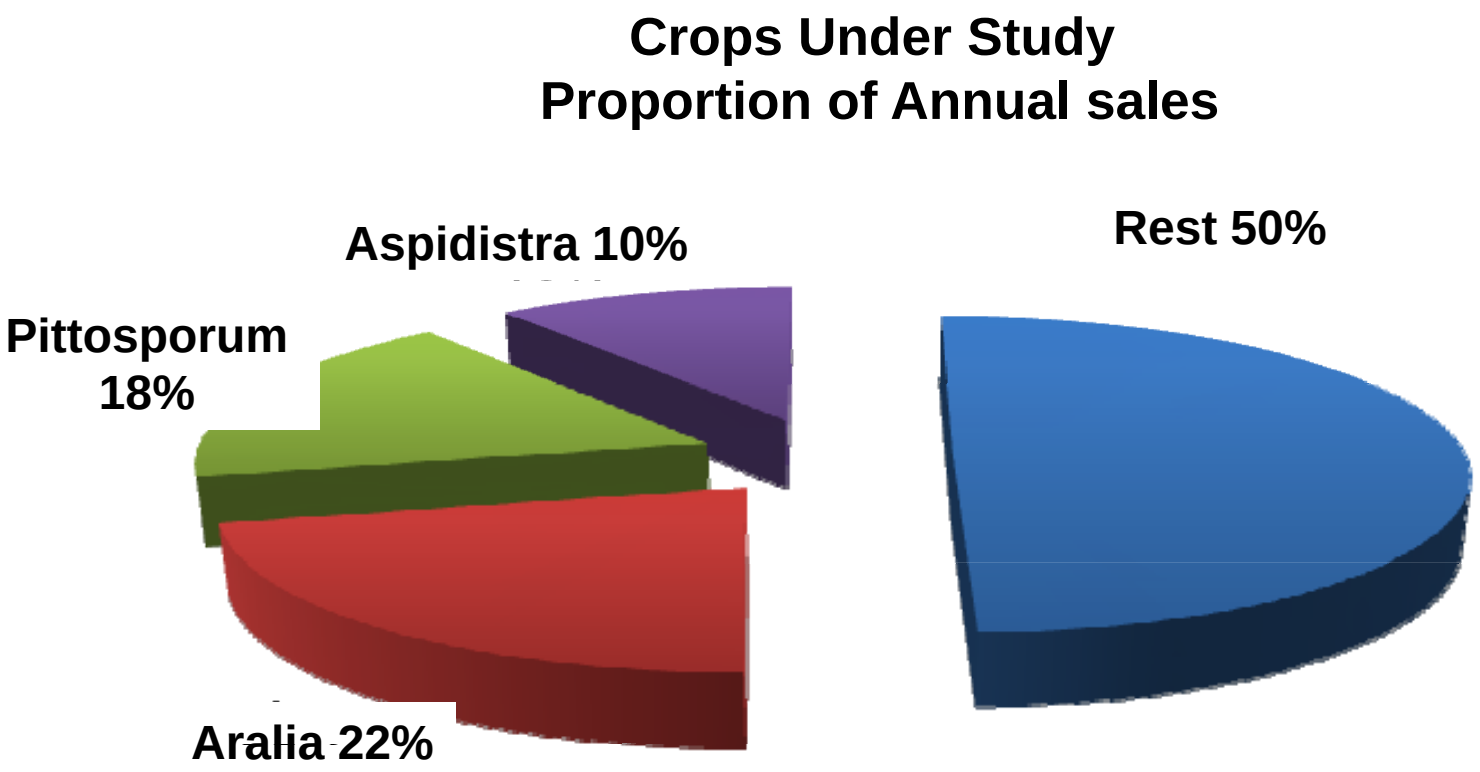
The Market


Flowers : Annual Sales
Sales (M Euro)
140
120
100
80
60
40
20
0
2004
2005
2006
2007
2008
Year
Transactions
Auctions
Total

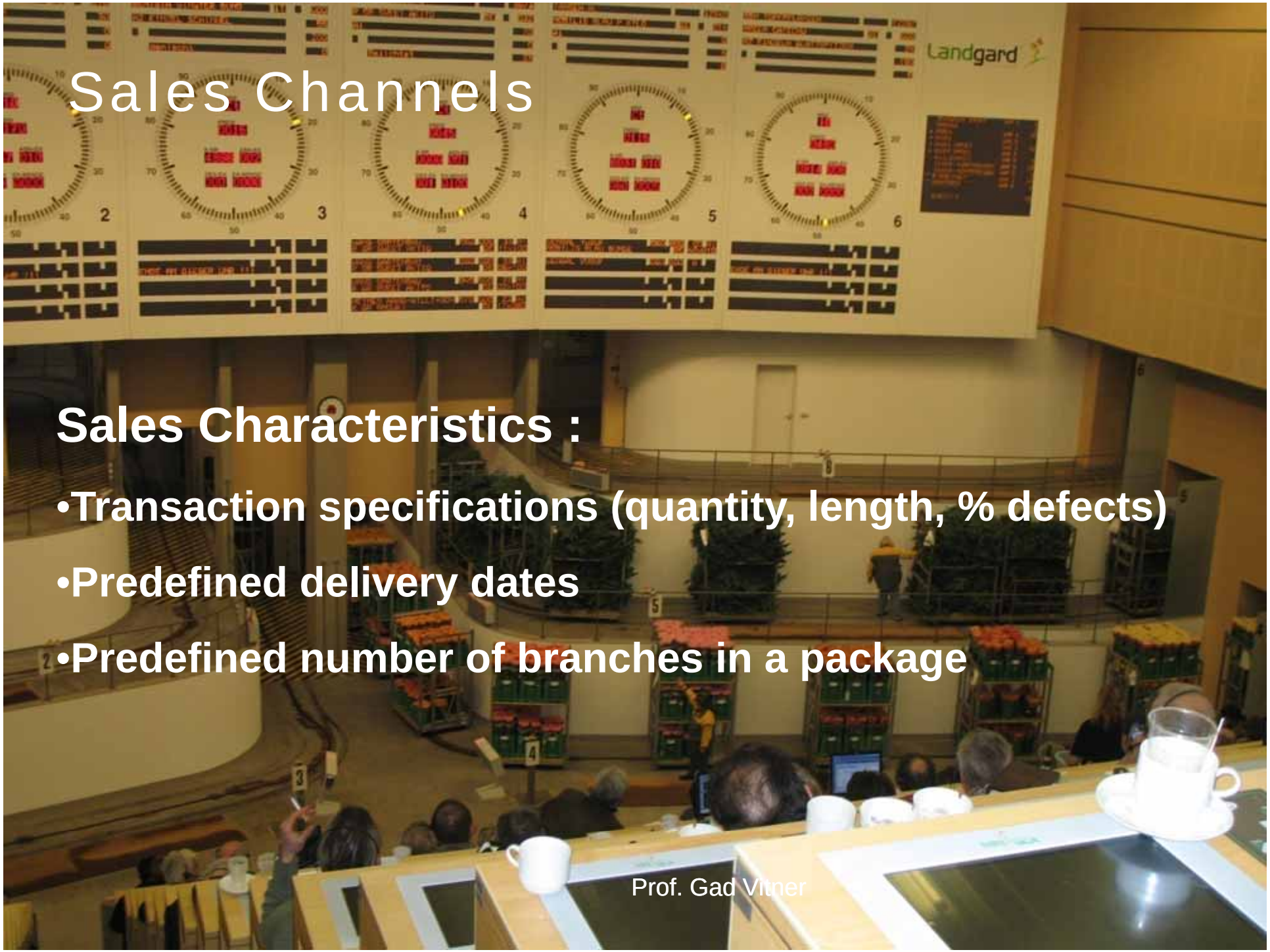
The Market


Green Ornamentals : Annual Sales
Sales (M Euro)
35
30
25
20
15
10
5
-
2004
2005
2006
2007
2008
Year
Transactions
Auctions
Total

The Market


Crops Under Study
Proportion of Annual sales
Aspidistra 10%
Rest 50%
Pittosporum 18%
Aralia 22%

Sales Channels



Sales Characteristics :

- **Transaction specifications (quantity, length, % defects)**
- **Predefined delivery dates**
- **Predefined number of branches in a package**

Objectives

- Using BOM as a management tool
- Optimize the allocation of farm resources
- Calculate operations costs
- Estimate product pricing
- Basic corner stone when implementing a computerized system.

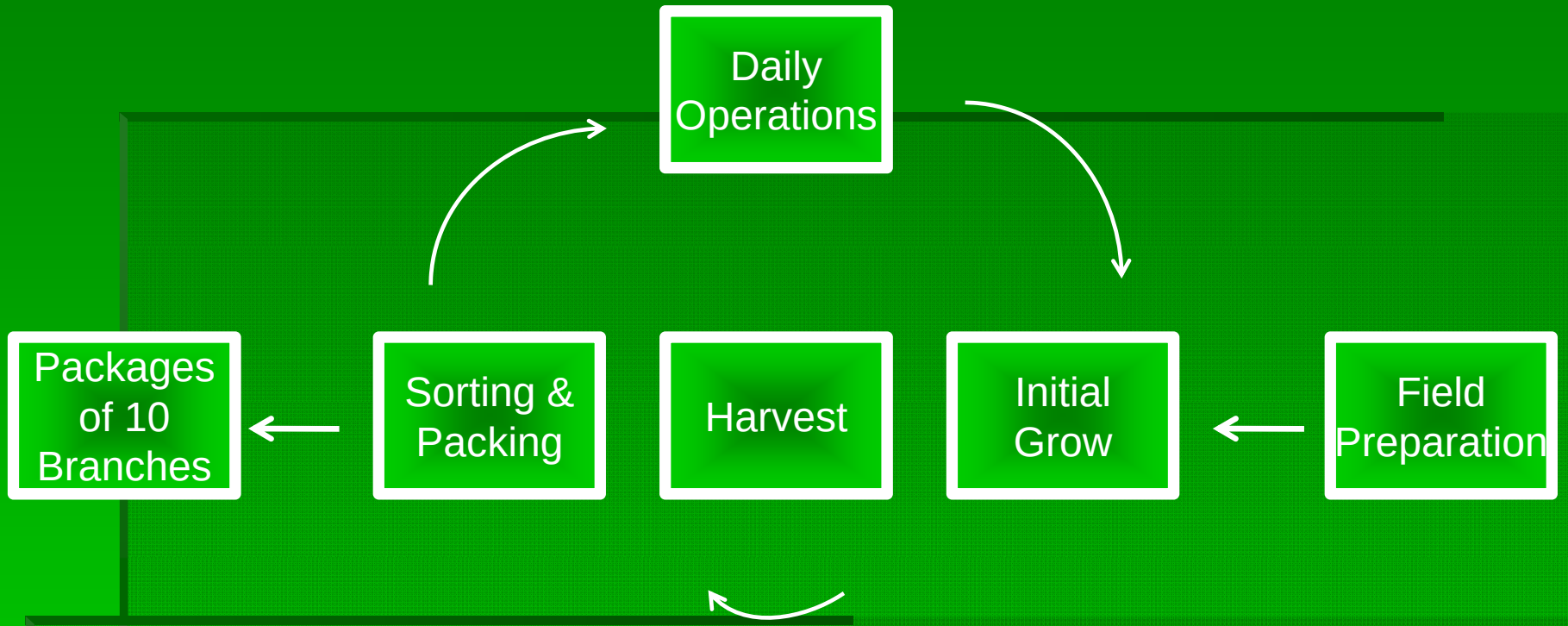
Farms Under Study

- **Farm A**: 8.5 ha
- Employees : 6 daily
- Crops: Pittosporum - 5.0 ha
  - Ruscus - 1.0 ha
  - Aspidistra - 2.5 ha
- Annual yield - 4 Million stems
- 99% exported to the Netherlands

Farms Under Study

- **Farm B** 8.0 ha
- Employees : 5-7 daily
- Crops: Pittosporum - 3.0 ha
  - Aralia - 2.5 ha
  - Aspidistra - 2.5 ha
- Annual yield - 3.5 Million stems
- 70% exported to the Netherlands

Farm processes



- Crops growth life cycle – 9 years
- Initial growth – 2 years
- Ongoing harvest – starting 3rd year

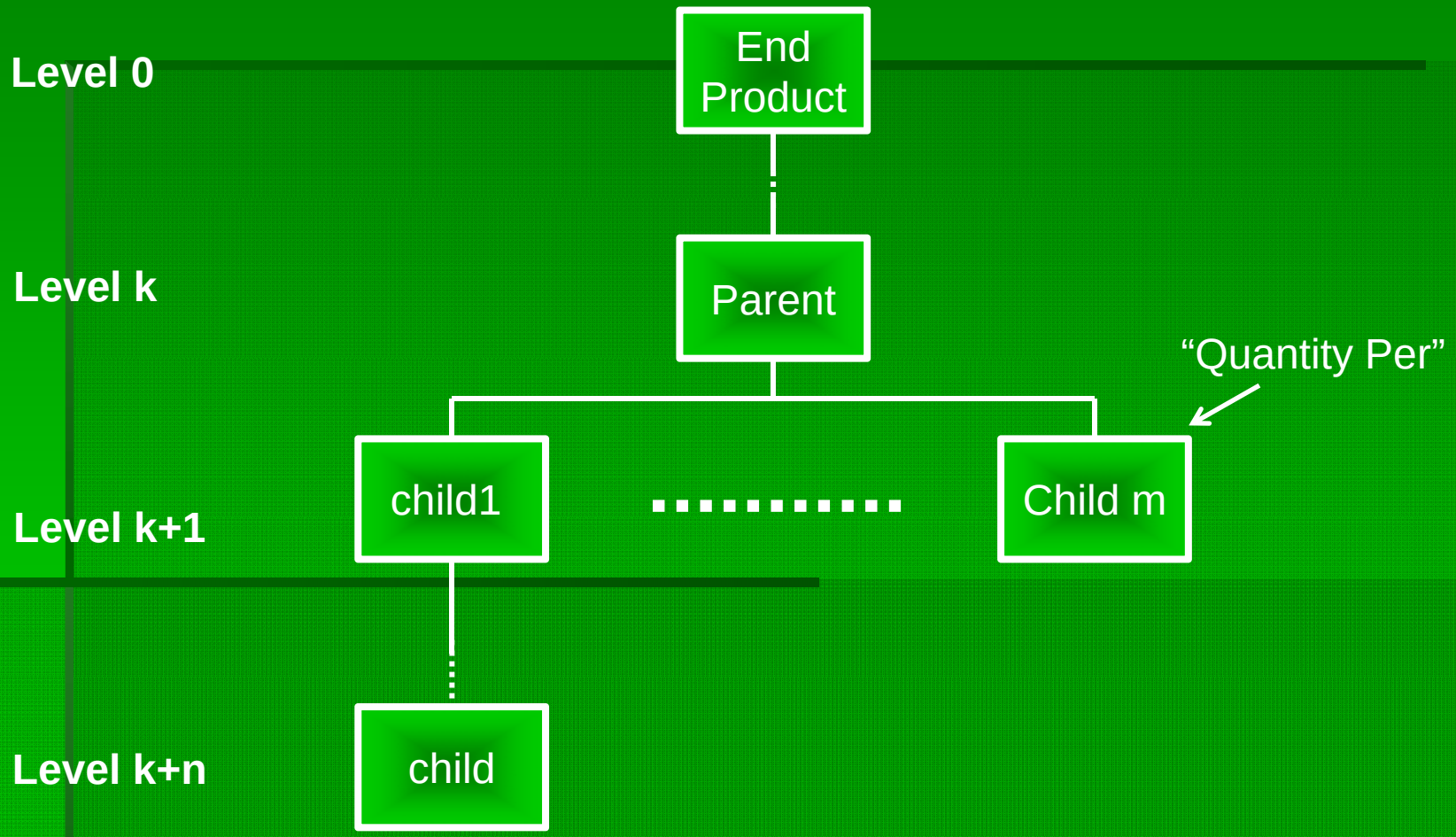
Bill of Materials (BOM)

- Constructed during the Engineering Design phase for any new product.
- A “Tree” structure containing: “Parent” and “Child” components with the “Quantity Per” relationships.

Bill of Materials (BOM)

- Provides detailed data base of all product's components and operations
- Supports purchasing processes
- Supports production planning and control
- Supports the costing process

Bill of Materials (BOM)



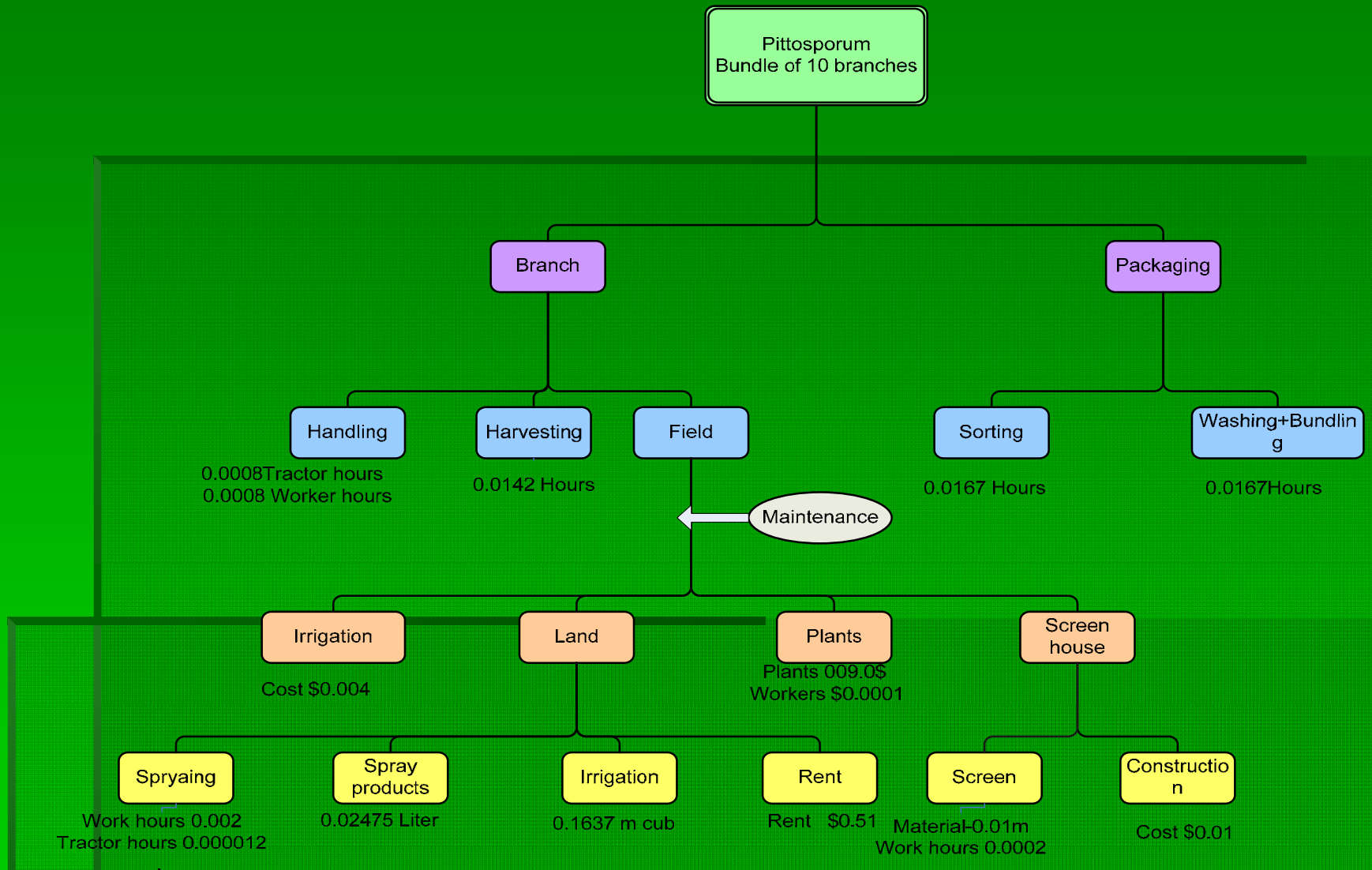
BOM Types

- **Single Structure**
- Contains: Field preparation +
  Product plant and grow +
  Harvesting +
  Packing house activities

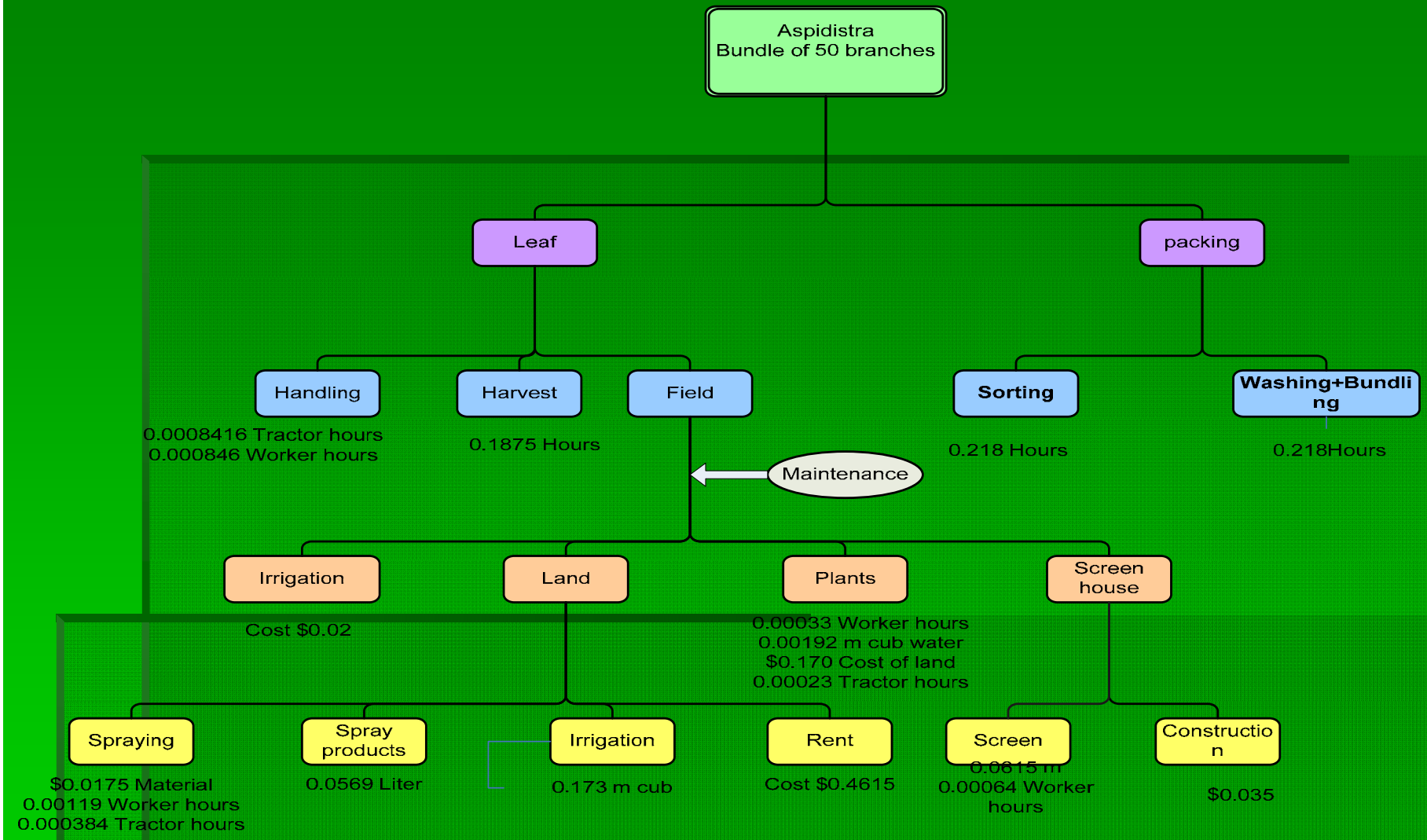
Dual/Multi Structure

Contains: Multiple BOMs per work step

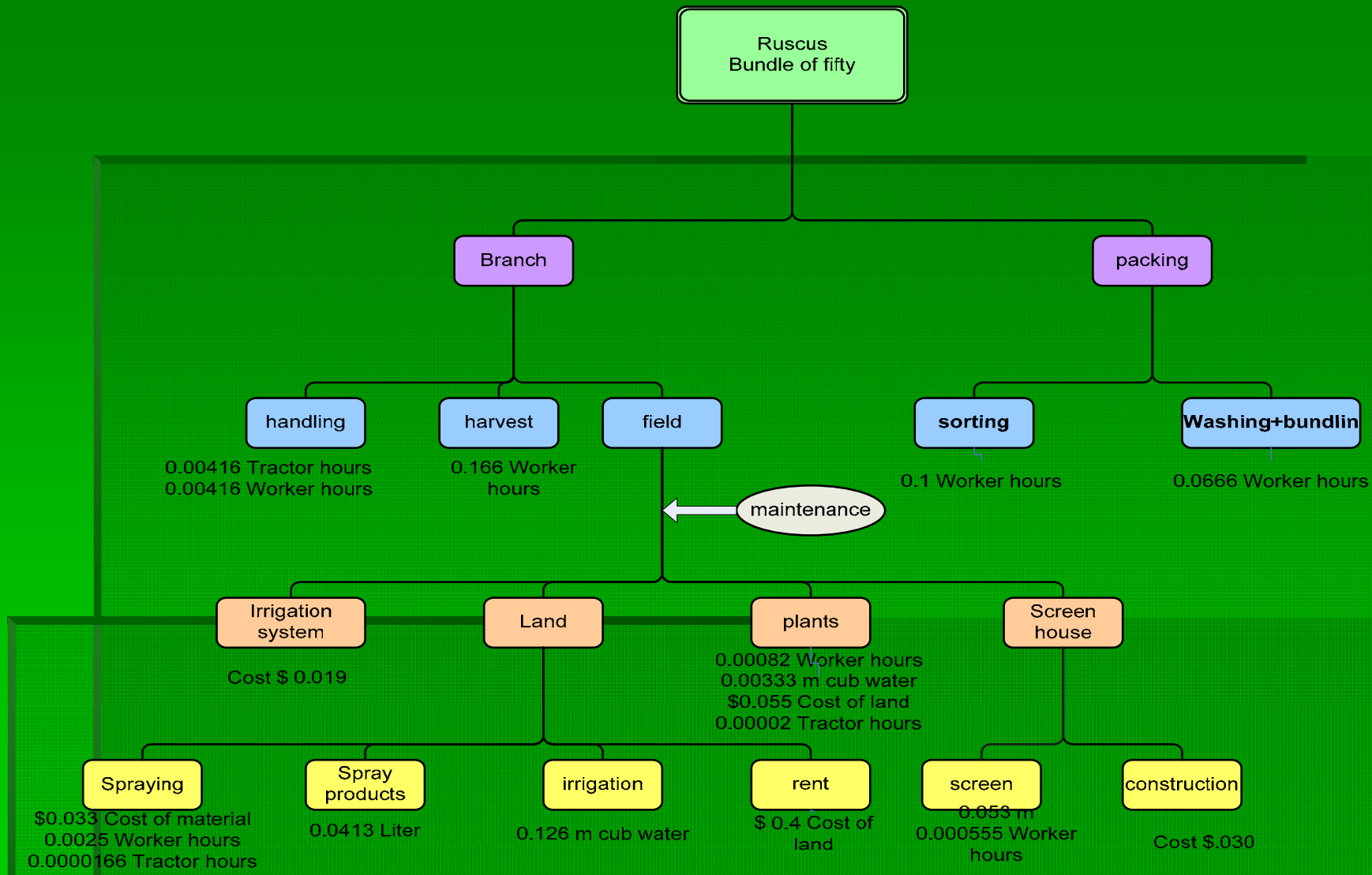
BOM of a 10 Pittosporum branch bundle



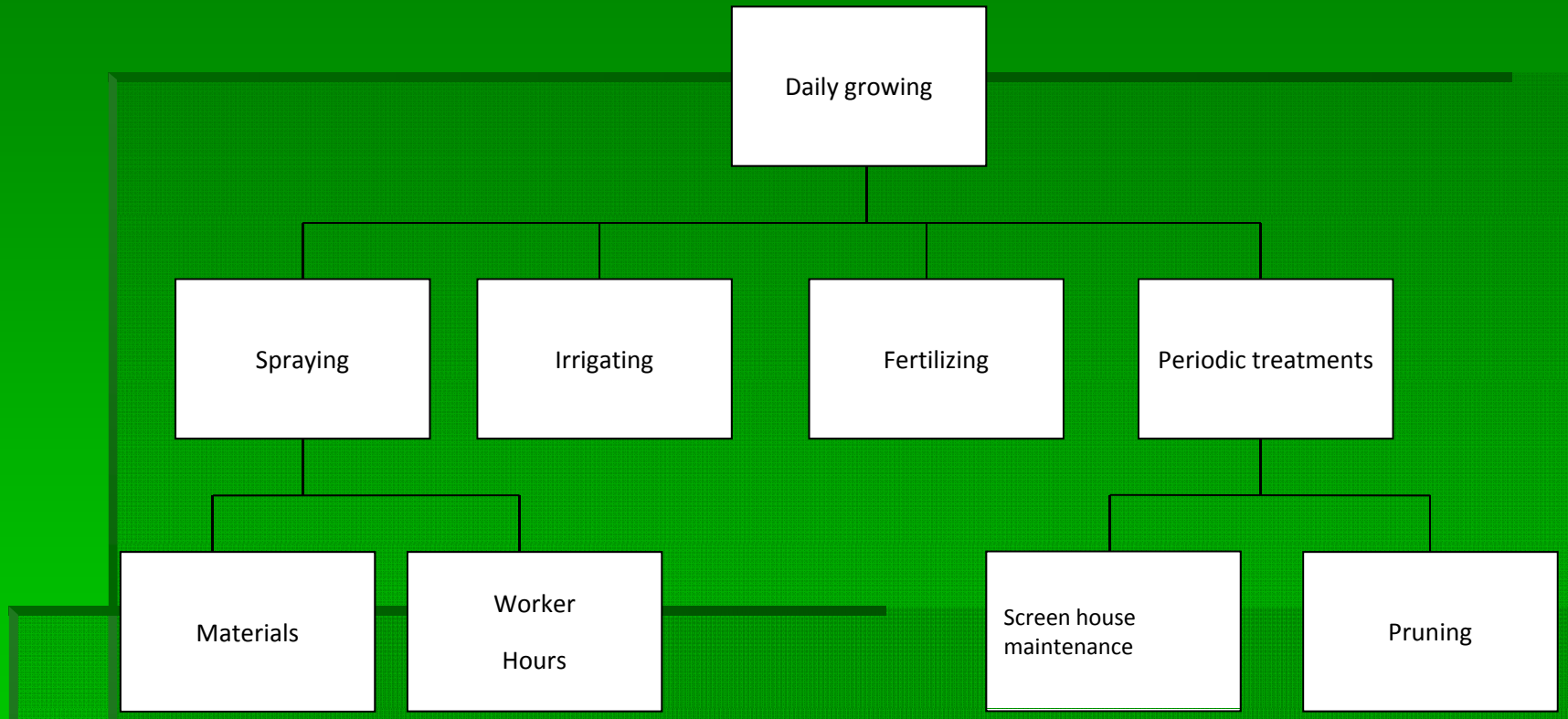
BOM of a 50 Aspidistra branch bundle



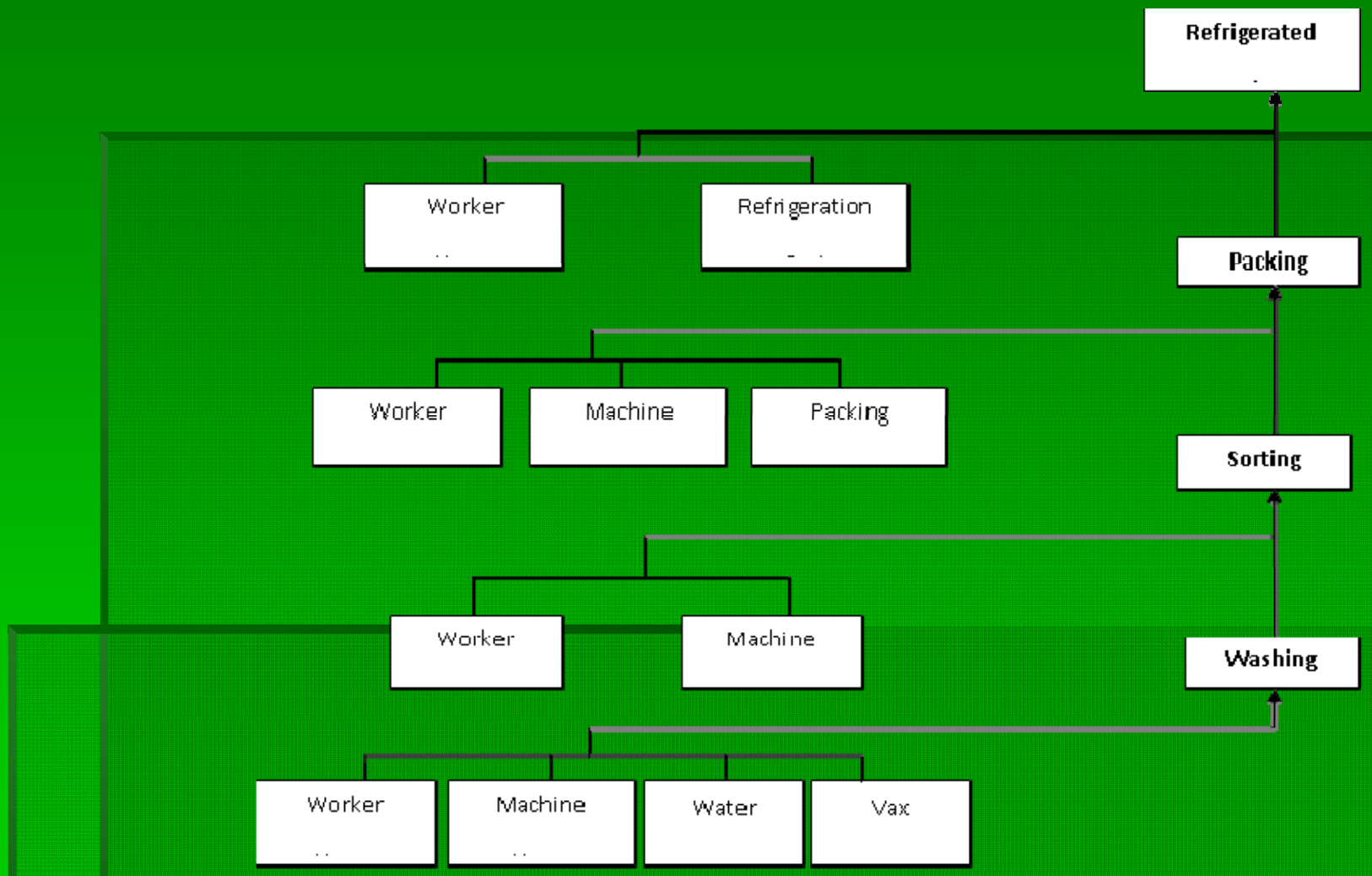
BOM of a 50 Ruscus branch bundle



The BOM of the Daily Operations



The BOM of a "product" refrigerated green ornamental for the packing phase



Summary and Conclusions

- The BOM management tool was introduced.
- BOM characteristics were presented
- Real world Single/Dual BOM types presented and discussed.
- The BOM enables the farmer to manage farm operations reliable and accurate.

THANK YOU

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