

# Trends in UK Strawberry Production

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#### Introduction

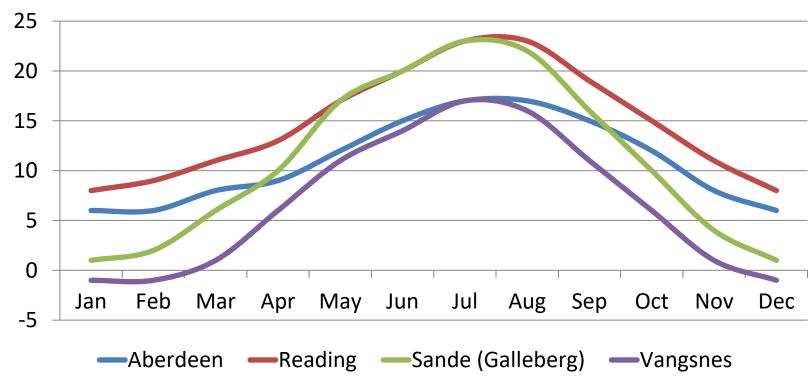
- Comparison of UK and Norway temperatures
- General trends in UK strawberry production
  - Growing systems
  - Tunnels
  - Varieties and plant types
  - Crop planning
  - Extending the season
  - Labour inputs
  - Pest and disease control





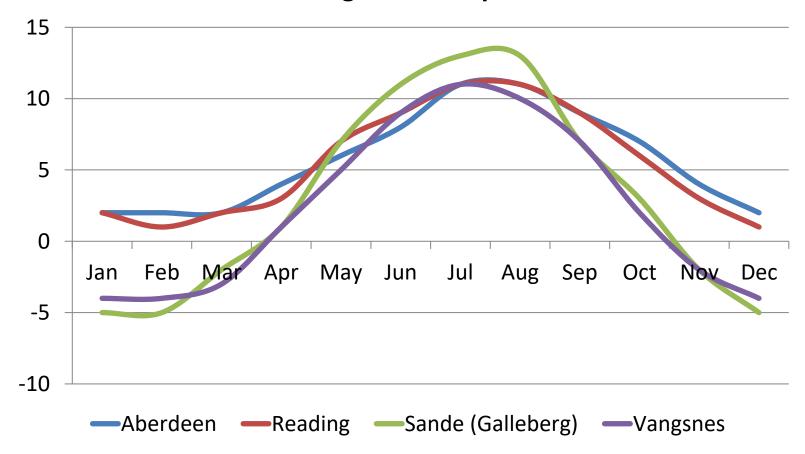


#### **Average High Temps °C**





#### **Average Low Temps °C**







#### **General Trends**

- Mainly sold through supermarkets
- Limited increase in return per Kg
- Increasing costs:
  - Labour (minimum wage up 59% 2016-2024)
  - Overheads (audits, compliance, welfare etc)
- Fewer growers but bigger
- Increasing yields (over 3x 1998 to now)
- Annual cropping
- Yield is king





# **Growing Systems**

- Originally matted rows
  - Small bare root planted in soil in spring
  - Not picked in year 1
  - Harvested in years 2 to 4
- Picking period approx. 8 weeks
  - Poly with holes/fleece for earliness
  - Early and late varieties, all Junebearers
  - Deep straw for lateness







# Raised Polythene Covered Beds

- 1.5m centres with 2 rows of plants
- Plant A+ or waiting bed plants in May to give small crop in July
- Crop for two more years (mid-May to end June)
- Soil sterilisation (MeBr or Chloropicrin) for Verticillium/Red core
- Trickle irrigation/fertigation
- Tunnels from mid-1990's





# **Substrate Growing**

- Loss of soil sterilants for Verticillium
- Peat and then coir
- Bags on raised beds
- Bags on low support structures
- Table tops
  - Faster picking rates
  - More attractive to pickers





 Metal posts + wire netting or gutters







- Metal posts + wire netting or gutters
- Coir bags
- Drip irrigation











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- Leaf support strings







- Metal posts + wire netting or gutters
- Coir bags
- Drip irrigation
- Leaf support strings
- Truss tape
- Troughs?







#### **Tunnels**

- Use of much stronger metalwork and better technique increased wind tolerance by 50%
- Telescopics used to improve earliness
- Use of special poly to manipulate crops (e.g. anti-drip)
- Automation/mechanisation of venting



### 6 Row tunnels



#### **EZvent tunnels**





#### **Varieties**

- Early 1990's 95% Junebearers
  - Early, mid and late season
- Now mainly everbearers
  - Longer picking season from same plant
  - Fruit quality
  - Different plant types give different cropping profiles
  - Better yields
- More open varieties





### Plant Types - Everbearers

- Originally bare root
- Potted gave bigger yields
- Now many options
  - Heavy tray plant
  - Mini tray plant
  - Low chill glasshouse
  - Heated glasshouse
- All with different profiles and plant habit

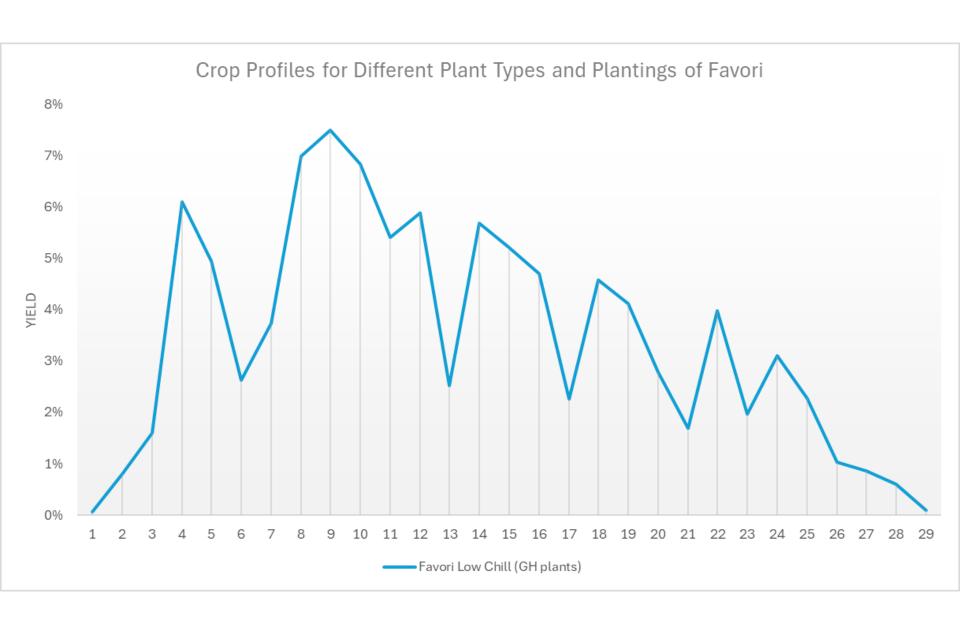




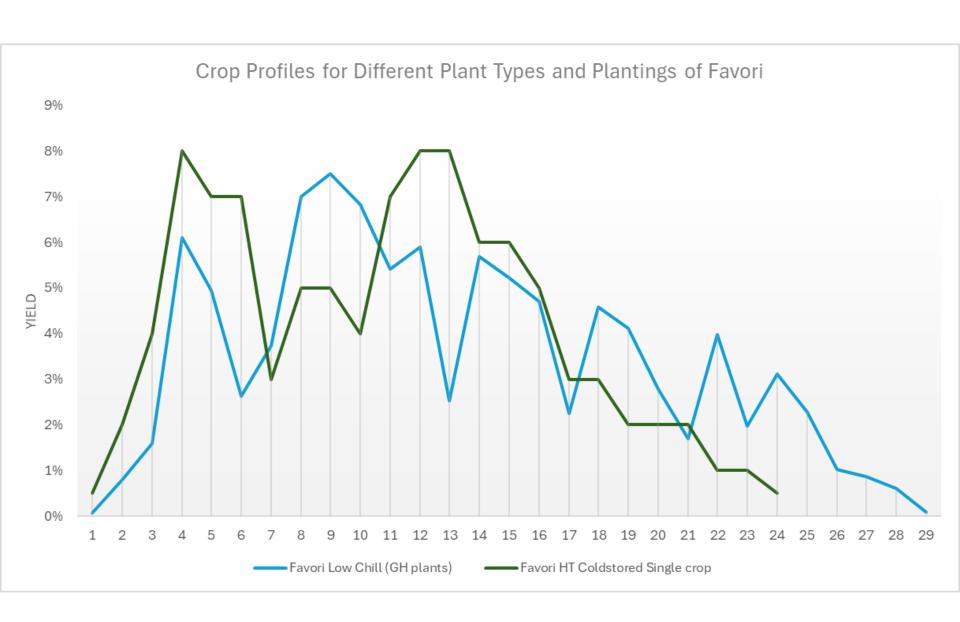
# **Crop Planning**

- Early (April/May) and Late (mid-Sept on) best prices
- Late May/June traditionally peak demand
- August sales difficult
- Aim for a flat picking profile
  - For customers (supermarkets)
  - For harvest labour

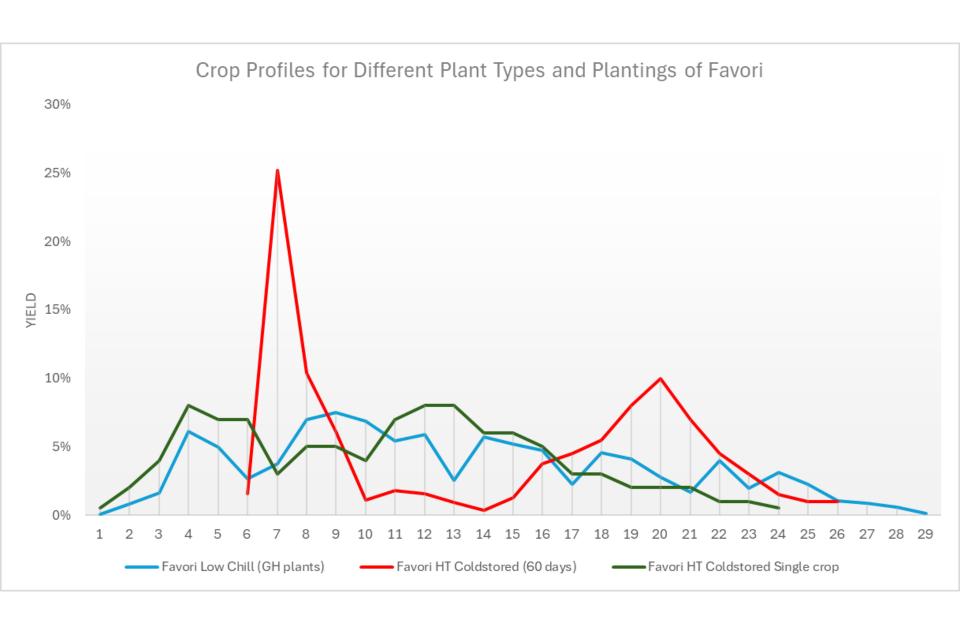




Data provided by Hall Hunter Partnership



Data provided by Hall Hunter Partnership



Data provided by Hall Hunter Partnership



Aborted Flowers





# Extending the Season

- January planting
- Telescopic tunnels
- Fleece + poly with holes over plants
- Heated tunnels
  - Gas
  - Biomass
  - Heat exchangers



### **Heated Tunnels**



# Heat Exchangers







### Focus on Labour Inputs

- Harvesting
- Husbandry (plant management)
  - Runner removal
  - Trussing
  - Leaf removal
- Cost vs. Return



#### Runner removal

- ✓ Fast Trials
- Treat. 1- runners cut weekly
- Treat. 2 runners cut weekly (1st daughter)
- Treat. 3 runners cut weekly (2 daughters)

Yield reduced by around 130gr/plant if runners not removed before the 1<sup>st</sup> daughter





#### Runner removal

	Yield (Kg/ plant)	Net value of fruit /plant	Net value /ha
Runners removed	1.3Kg	£1.59	£77,910
Not removed on time (1st daughter)	1.17Kg	£1.43	£70,070

£ 7,840

- ✓ Plant density of 7 plants /lm
- ✓ 1 ha = 7000 linear meters
- ✓ Net value of fruit £1.22 /Kg



#### Runner removal

Cost /lm (1 run)	No. of rounds	Total cost /lm	Total cost /ha
£0.03	6	£0.18	£1,260



Reduction of net value of fruit when late removal of runners

 $\checkmark$  1 ha = 7000 linear meters



# Trussing



#### **Trussing**

	Trussing cost /ha Yield t/ha /kg		ussing cos /kg	st	
Scenario A	£12,880	49		£0.26	
Scenario B	£12,880	63.7		£0.20	
Scenario C	£12,880	73.5		£0.18	

Can we save the trussing cost /kg?



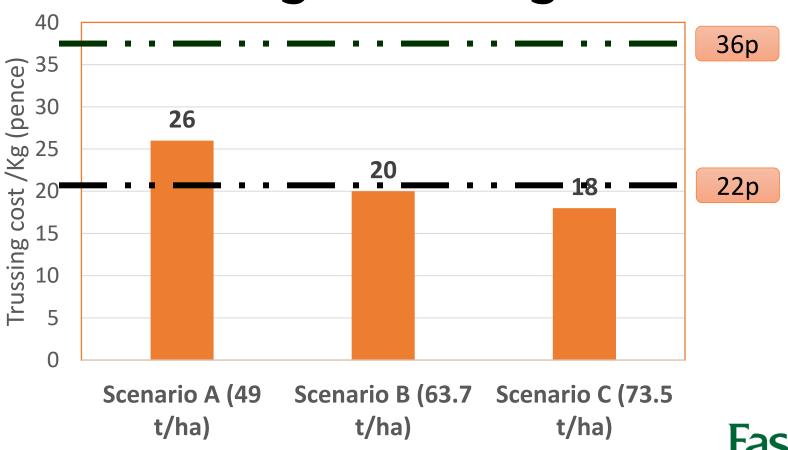
#### **Trussing vs Picking cost**

Picking speed (kg/h)	Picker cost (£ /kg)
15	£0.91
20	£0.69
25	£0.55
£0.36	

✓ Wage costs £13.70 /h



#### **Trussing vs Picking cost**







#### Pest and Disease Control

#### Reduced pesticide options:

- UV-C for mildew control
- Climate control for diseases
- Husbandry (plant management)
- Biological control
- Encouraging beneficials







#### Pest and Disease Control

#### Reduced pesticide options:

- UV-C for mildew control
- Climate control for diseases
- Husbandry (plant management)
- Biological control
- Encouraging beneficials
- Varietal choice
- Biofungicides?





