





# Bush Cider Orchards in the 1970s

## Major planting schemes for new contract growers

- Varieties selected from traditional orchards
- Survival with minimal inputs
- design based on LARS bush orchard trials
- Planted on dwarfing rootstocks

## Selection criteria

- Bittersweet
- Good heavy crops
- Maturing from early October – late November



# Bush Orchards through the 1980s

- Only 25 tonnes/ha by year 10 [10 tonnes/acre]
- Crops averaging 30 - 38 tonnes [12 – 15t/a]
- Cropping going biennial
  - experimental work at Long Ashton
  - fruitlet or blossom thinning
  - Michelin and Dabinett most annual
- Disease susceptibility
- Early maturing and late varieties useless
- Replaced with Michelin and Dabinett
  - the most regular and best cropping varieties

**Problem – most fruit ready for harvest in the month of October**



# SEARCH FOR EARLIES

## Early Maturing and Regular Cropping

- France Cidor, Belle Fille, Omont
- Devon and Somerset
  - White Jersey, Major & Ellis Bitter
- Old LARS breeding programs
  - Ashton Bitter
  - LA disease resistant varieties

## Long Ashton Williams/Copas breeding program 1984



# LARS BREEDING PROGRAM 1984

## AIMS

- Regular annual, precocious cropping
- Yields around 50 tonnes/ha
- Large fruit maturing from mid-end September
- Reasonable disease tolerance
- Good natural tree shape – low maintenance
- Good juice quality with a range of tastes:

High or low tannin and juicing sharp

**Crosses made between**

**Michelin**

**James Grieve**

**Dabinett**

**Worcester Pearmain**

# SLOW PROGRESS

- 1984/5** Crosses made and seed sown
- 1986** Seedlings screened for disease susceptibility
- 1988** 1200 seedlings selected and propagated
- 1990** Seedlings lined out in Hereford nursery
- 1997/8** Best 42 selections went out in 11 commercial trial orchards in 6 counties
  - tree performance & juice analysis
  - much variation between sites
- 2007** Final selection of 29 new varieties made





# NEW CIDER APPLES VARIETIES

**12 Medium Bittersweet** Tannin >0.2g/l, Acidity <0.45%  
Prince William, Amelia, Amanda, Jenny, Hastings, Connie,  
Helen's Apple, Three Counties, Jane, Tina, Early bird, Lizzy

**3 Mild Bittersweet** Tannin 1.4-1.7g/l, Acidity <0.45%  
Vicky, Naomi, Nicky

**8 Bittersharp** Tannin >0.2g/l, Acidity >0.45%  
Angela, Gilly, Willy, Joanna, Maggie, Hannah, Jean, Sally

**6 Juicing sharps** Low tannin, sharp or sweet  
Fiona, Shamrock, Tracey, Eleni, Betty, Debbie



**ANGELA**



## **Helen's Apple**

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# IN THE MEANTIME

## Major improvements in orchard management

- Michelin & Dabinett cover over half of the bush orchard acreage
- Many orchards averaging around 50 tonnes/ha [20T/a]
- A demand for lower maintenance
- Harvesting season condensed into October

## Now planting new sites with latest selections on a larger scale



# NEXT GENERATION ORCHARDS

## **Aims**

Precocity of cropping

Regularly high yields

Early fruit maturity and harvesting period extended

High juice quality

## **Ultimately**

Much reduced hand labour, more use of mechanisation

More economical and efficient crop protection spraying

Excellent fruit quality at harvesting



# NEXT GENERATION ORCHARDS

## Design

- High planting density 1450 trees/ha
- Planted 4.5 x1.5m [15' x 5']
- Trees restricted to 2m high
- Supported by posts and wires

## Tree / rootstock / interstem combinations

Tree	Tina, Angela, Lizzy, Dabinett & Katy
Rootstock	MM106, MM116, M25
Interstem	Spur Golden, M9

# NEXT GENERATION ORCHARDS



**Lizzy**

M25/M9



# NEXT GENERATION ORCHARDS

Mechanical summer pruning

Up-and-over spray machinery

Shake and catch harvesting



# NEXT GENERATION ORCHARDS

Liz Copas

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