Changes in raspberry crop management techniques – a grower's view

Peter Thomson

Scottish Society for Crop Research

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Thomas Thomson

Historical Perspective – 120 years of raspberry growing

- Growing for jam making
- Low yields from diseased fields
- Higher quality markets for canning freezing and fresh
- Virus tested stocks
- Introduction of pesticides
- High yields possible – introduction of Lloyd George
- Variety Breeding
- Competition from Eastern Europe
- Phytophthora Root Rot
- Minimum Wage

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Present state of the industry

- Dominated by fresh sales to supermarkets
- Zero tolerance of poor quality
- Almost universal use of polytunnels
- Move from soil to substrate, especially in England
- Move to primo-cane varieties, especially in England
- High costs of all labour – especially for harvesting
- Removal of so many pesticides

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•Revival of old pests and diseases and onset of new ones –

1.Phytophthora Root Rot

2. Leaf and Bud Mite
3. Resistance breaking aphids
4. Viruses
5. Clay coloured and vine weevils
6. Cane diseases – cane blight, cane spot, cane botrytis
7. Fruit botrytis

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Insecticides

Losses

rotenone (Derris) – aphids, raspberry beetle
bifenthrin (Talstar) –spider mite, clay coloured weevil
nicotine (XL All Insecticide) – aphids, capsids, caterpillar, leafhopper, sawfly

Gains

citrus fruit extract (Orosorb) – General pest control
garlic (various) – General pest control
lambda cyhalothrin (Hallmark) – capsids, clay coloured weevil
pyrethrins (Spruzit) – aphids, caterpillar, beetle, weevils, spider mite, thrips
spinosad (Tracer) – thrips
abamectin (Dynamec) – spider mite, leaf & bud mite

Implications

Overall, the gains equal or exceed the losses for insecticides. The loss of bifenthrin was a major blow for controlling capsids, clay coloured weevil and other weevils. This has been offset by the approval for lambda cyhalothrin and pyrethrins. The EAMU for abamectin on protected crops has been very helpful for spider mites and leaf and bud mite.

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Fungicides

Losses

chlorothalonil (Bravo 500) – Botrytis, cane spot, p. mildew
fenhexamid & tolylfluanid (Talat) – Botrytis
thiram (Thianosan DG) – Botrytis, cane spot
tolylfluanid (Elvaron Multi) – Botrytis, spur blight
carbendazim (Bavistin DF) – cane blight
bordeaux mixture (Wetcol 3) – cane spot, spur blight
copper ammonium carbonate (Croptex Fungex) – cane spot
fenarimol (Rubigan) – P. mildew

Gains

Bacillus subtilis (Serenade ASO) – *Botrytis, Phytophthora*
boscalid & pyraclostrobin (Signum) – cane blight
cyprodonil & fludioxonil (Switch) – *Botrytis*
dimethomorph (Paraat) – *Phytophthora*
kresoxim-methyl (Stroby) – General
tebuconazole (Folicur) – cane blight

Implications

The losses have been offset by the gains overall. However, since the loss of tolylfluanid, the industry is less well catered for controlling general cane diseases such as spur blight and cane spot.

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Herbicides

Losses

trifluralin (Treflan)
MCPB (Butoxone)
paraquat & diquat (PDQ)
chlorthal-dimethyl (Dacthal)
dichlobenil (Casoron G)
sodium monochloroacetate (Croptex Steel)
simazine (Various products)

Gains

carfentrazone-ethyl (Shark)
diquat (Reglone)

Implications

The losses of herbicides have had the greatest impact on the industry. Sodium monochloroacetate has been replaced with carfentrazone-ethyl. However, the losses of paraquat & diaquat, dichlobenil and simaze have had a major impact on the quality and cost of weed control.

Future of the Scottish Raspberry Industry

- Difficult to compete with primo-cane varieties from England
- Still have gap in English production between summer and autumn crops, but watch out for new early primocane varieties
- Need new variety – lucky to have world's most scientifically advanced breeding programme at James Hutton Institute
- Move to substrate production to combat phytophthora
- Increased use of bio-pesticides, pest trapping and prediction models
- Must have increased returns – costs of over £6.00/kg, more if paying high commission
- Promotion of virtues of raspberries – health, taste, convenience

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The end

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Fig. 1: RASPBERRY AREAS, PRODUCTION AND PULP PRICES 1947–1979–SCOTLAND

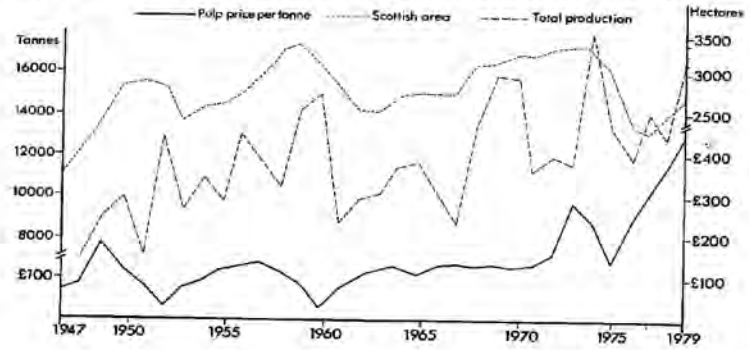


Fig. 2: RASPBERRY AREA and PRODUCTION–ENGLAND and WALES

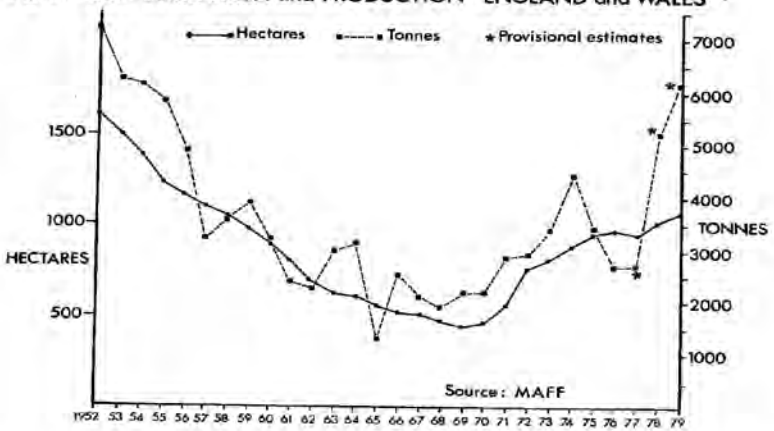
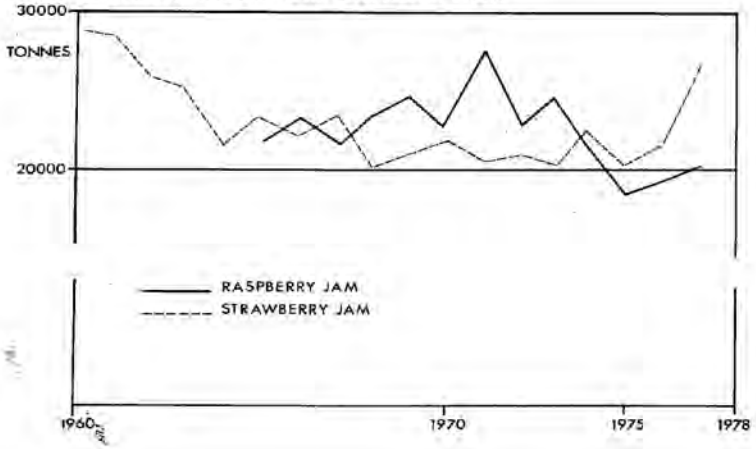


Fig. 3: UNITED KINGDOM JAM CONSUMPTION



The upsurge in consumption in 1977 was caused by the failure of the blackcurrant crop, when manufacturers used strawberries and raspberries in place of black currants.

High quality fruit for canning, with an annual requirement of some 4,000 tonnes, has for many years been the next important outlet and production of individually quick frozen fruit (IQF) for the hotel and retail trades has expanded rapidly over the last few years. The requirements for IQF and for canning are sound, unsquashed fruit, unaffected by pest or disease and of uniform ripeness. A premium, over the pulp price, of between 20 and 25 per cent is usually paid for fruit of this quality. In many years there are insufficient fruit pickers available to satisfy the requirements of the canning and freezing factories.

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