Grower Summary

TF 207

Determination of the optimum pruning time for fruit wall orchard systems for Gala apple

Annual 2013

Disclaimer

The results and conclusions in this report may be based on an investigation conducted over one year. Therefore, care must be taken with the interpretation of the results.

Use of pesticides

Only officially approved pesticides may be used in the UK. Approvals are normally granted only in relation to individual products and for specified uses. It is an offence to use non-approved products or to use approved products in a manner that does not comply with the statutory conditions of use, except where the crop or situation is the subject of an off-label extension of use.

Before using all pesticides check the approval status and conditions of use.

Read the label before use: use pesticides safely.

Further information

If you would like a copy of the full report, please email the HDC office (hdc@hdc.ahdb.org.uk), quoting your HDC number, alternatively contact the HDC at the address below.

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HDC is a division of the Agriculture and Horticulture Development Board.

Project Number:	TF 207
Project Title:	Determination of the optimum pruning time for fruit wall orchard systems for Gala apple
Project Leader:	Chris Biddlecombe
Contractor:	Farm Advisory Services Team Ltd.
Industry Representative:	Mark Holden, Moat Farm
Report:	Annual Report 2013
Publication Date:	16 May 2013
Previous report/(s):	N/A
Start Date:	01 March 2012
End Date:	31 March 2017
Project Cost:	£38,826

Headline

- Work is ongoing to determine the optimum time to prune orchards planted as a fruit wall and to establish whether inter-tree pruning is necessary.

Background and expected deliverables

The fruit wall concept originated in France in 1986 where the system's potential to reduce pruning costs and increase yields was demonstrated. As UK growers consider adopting the fruit wall system, further work must be done to determine how the system needs to be adapted for use in the UK, particularly in establishing the optimum time to make the fruit wall cut. The timing of the cut will determine the amount of vegetative re-growth following the cut and also the formation of flower initials in the buds just behind the cut.

Determining the optimum time to perform the fruit wall cut will help to achieve maximum productivity from the fruit wall system and should also reduce pruning costs via the use of mechanical pruners. Impacts of the timing of the cut on the yield, fruit size and quality and vegetative re-growth will be assessed throughout the trial. The trial will be conducted over five years so that the long-term effects of fruit wall cut timings can be determined.

Summary of the project and main conclusions

The project was designed to test the effect of four timings of pruning a fruit wall mechanically, compared to a winter hand pruned control treatment. In addition, a further set of treatments designed to compare the effect of pruning between the trees by hand during winter will be included.

The timings of the fruit wall cut in the first year were based upon different growth stages: pink bud, six new leaves, nine new leaves and 12 new leaves (or when 50% terminal buds were present). In this first year of the trial no inter-tree pruning was necessary.

There was no significant effect on fruit weight, fruit size or percentage red colour of any treatment at harvest. However, overall yield was significantly affected with the winter hand pruned treatment giving a greater yield. The maturity of the fruit did appear to be affected by the fruit wall treatments and the length of re-growth and the number of leaves on these shoots differed significantly between the treatments.

The differences between the fruit wall treatments were observed in this, the trial's first year and must be considered preliminary until verified by results from subsequent years. The cumulative five year data will reveal more about the effects of the pruning treatments.

Financial benefits

The 2012 growing season was considered as an establishment period of the fruit wall and so the financial benefits are yet to be determined.

Action points for growers

- At this stage it is not possible to give definitive advice on the optimum timing for a fruit wall cut to be made.
- However, it was clear in this trial that the later the cut, the greater the reduction in subsequent growth.
- There appeared to be no advantage from establishing a fruit wall by cutting at pink bud and the later cuts gave better growth control and tree shape.
- The effect on subsequent crops from the different timings is yet to be determined.
- The trial indicated that fruit wall pruning cuts can potentially have adverse effects on fruit firmness and sugar levels. Growers should be aware of these before deciding on adopting the technique. The trial will establish whether these effects are a problem in subsequent years.