# USING QUALITY COMPOST CAN REAP HEALTHY PROFITS FOR FRUIT GROWERS

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**WRAP (Waste & Resources Action Programme) has been sponsoring scientific trials across the UK since 2004 to establish the benefits of using quality compost on a variety of crops, including apples, plums and strawberries.**

A recent trial looked at the use of quality compost as a mulch in apple orchards and found that compost helped increase yields by nearly 50 per cent and could significantly boost profits if used on a commercial scale. Managed by WRAP project partner Remade South East, the trial started in 2004 on North Court Farm, near Canterbury, when compost was first applied and was extended in 2006/07 when a second application of compost was made.

The compost is made from green material, such as garden waste, and was supplied by Shelford Composting, based near Canterbury. The compost was produced in accordance with the BSI PAS 100 certification scheme which provides a baseline quality standard for compost, ensuring that it is consistent, safe and reliable to use.

The second application of compost in 2006/07 involved the application of quality compost mulch to 13 rows of Cox and Braeburn apple trees at a width of 1m and to a depth of 0.1m. The rest of the orchard, which had been mulched with straw in 2004 and received no further treatment of any kind, was used as a control plot.

The photographs below taken of the leaves of the Cox trees in June showed that those that had been mulched with compost were much darker and healthier than the leaves of untreated trees, which show signs of insufficient water supply. The dark colour of the treated leaves suggested they were getting plenty of moisture and nutrients, and that the process of photosynthesis was working well. Improvements in blossoming and fruit set were also noted and translated into significantly improved yields.

**Cox apple leaves: no compost (left) and with compost mulch (right)**

At harvest time, the numbers of apples per tree increased by 45.6 per cent and 35 per cent respectively for the Braeburn and Cox varieties in comparison with the control trees. Fruit

weight per tree for the Braeburn apples rose from an average 20.8kg/tree, to 30.9kg/tree or 30.9t/acre at 1,000 trees per acre. For the Cox apples, fruit weight per tree increased by 49.5 per cent, taking the weight of the fruit up from 9.7kg/tree to 14.5kg or 14.5 t/acre. The yields before mulching were similar to typical UK orchard yields at 10.5t/acre for Cox and 18.2t/ac for Braeburn. Increases in yield of this scale will be of real economic benefit to growers.

Moisture monitoring was conducted regularly throughout the trial and revealed that in dry periods the areas treated with a compost mulch remained relatively moist in comparison with the untreated areas. It is thought that increased yields were mostly due to the improved water retention and the improvement in soil health due to the addition of valuable organic matter. Compost also contains vital, slow release nutrients such as potassium, phosphorous, nitrogen and magnesium which will become available to the crops throughout the growing season.

Robert Balicki, who runs North Court Farm and is also CEO of Worldwide Fruits Ltd, the largest marketing organisation for UK produced fruit, commented "Although these trials were conducted on a small scale, we were very encouraged by the results, which were evident from the start of the growing season with dark, healthy leaves and increased blossom and fruit set. These changes translated into impressive yield increases, which provide strong evidence for the potential benefits of compost for our industry."

Evidence from WRAP trials suggests that mulching with quality compost should normally be carried out every third year. A trial where compost mulches were applied in successive years resulted in unchecked vegetative growth and a consequent decrease in fruit yield.

Trials have also been carried out on culinary apples, pears, plums and blackcurrant. WRAP is also supporting two trials with EMR (East Malling Research). The first examines the potential for both food-derived and green composts to replace traditional fertigation techniques and increase water use efficiency whilst maintaining fruit quality in Class 1 strawberries. The second examines other potential benefits of using quality compost as a mulch on apple trees, including soil microbiology. These trials are due to report by the end of 2009.

**Conclusion**

Scientific trials, such as the one conducted by Remade South East, provide exciting new evidence of the potential for quality compost to increase yields and profits whilst enabling growers to work more sustainably. WRAP trials have shown that mulching young orchards with compost will help establish strong trees capable of increased yields whilst subsequent mulching will help sustain increased yields in the long term.

*For an up-to-date listing of BSI PAS 100 suppliers, visit* ***www.wrap.org.uk/composting*** *and follow the link for WRAP's on-line searchable producer database.*

*For further information about the benefits of quality compost and compost trials visit* ***www.wrap.org.uk/agriculture***

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