Fruits of our labours

It's well worth the effort to try out alternative wood types in double bass making, says **Stefan Krattenmacher**, who shares the results of his own experiments – mainly using fruitwoods

How a walnut tree trunk looks shortly after being cut down

Having worked on 18th-century Italian double basses that had pearwood and walnut backs, and living as I do in a wine-producing region in the foothills of the Black Forest where there are countless fields of fruit trees, I had a natural inclination to try alternatives to maple and poplar for backs and ribs on basses and cellos.

APPLES AND PEARS

The first time I used pearwood it came from a Swiss tree. The grain was very straight and homogeneous, but not very interesting, in my opinion. I used it for a bass with a flat back, which seemed to work; I also tried it on a cello, but it made the instrument sound rather 'hard' – it lacked the warmth that I would have preferred. Since then I have never used pear for cellos again, but I went on experimenting with fruit trees on double basses. After the flat-back bass, I tried a curved pearwood back, which seemed to take the instrument down the same road as the aforementioned unfortunate cello.

> THE COLOUR OF APPLEWOOD HAS LOTS OF VARIETY: IT SHIMMERS BLUE, GREEN AND RED, AND IS NOT AS DARK AS PEAR

None of this stopped me from being curious about using different types of wood. I kept looking for nice fruit trees around my local area and was lucky enough to find some decent apple, walnut, cherry and pear trees, which I cut down myself with a mobile bandsaw.

Apple and pear have the highest density of all fruit trees, which is why I use their wood for my tailpieces. For the fingerboards of Baroque basses I use very straight and dense pearwood or applewood, which seems to have a positive effect on the sound, making the instruments sound more gutty – even when played with modern steel strings.

Although these two trees have nearly the same density, the flexibility for bending ribs is quite different: pear is often rather brittle and difficult to bend,

A double bass fingerboard made from pearwood

	Density (g/cm^3)	compressive strength (N/mm^2)	flexural strength (N/mm^2)
spruce	0.33–0.68	43–50	66–78
poplar	0.41–0.56	30–35	55–65
ash	0.45–0.86	44–52	102–120
cherry	0.52–0.7	45–55	85–110
maple	0.53–0.79	49–58	95–112
beech	0.54–0.91	53–123	105–123
walnut	0.57–0.81	58–72	119–147
pear	0.69–0.8	46–54	75–98
apple	0.7–0.8	41–60	77–121

Table showing the qualities of different woods

whereas apple is much easier. Using strong, quarter-sawn applewood or pearwood in flat bass backs creates a dark, centred sound, but for curved backs I've found that it's better to use slab-cut wood, which is more flexible, thus allowing vibration.

Pearwood has a slightly reddish, light-chocolate colour, which works well for a fingerboard with inlay and just a little linseed oil. The colour of applewood has much more variety: it shimmers blue, green and red and is not as dark as pear. So far, however, I haven't managed to find a large apple tree with enough of a flame, so I've had to join together three or four pieces of wood in order to get the whole width for a bass back.

WALNUT AND CHERRY

Walnutwood has open pores, its density lower than that of pear; but its compressive strength is higher than that of any other fruitwood, and its flexural strength is higher even than that of beech or ash, which are still used for making skis. If you find highly figured walnut, you're lucky – but you may also end up with a lot of firewood because of big branches or rotten tree insides. A positive by-product of such a situation for me was that I got a great living-room table made out of a big tree I cut down many years ago whose wood wasn't good enough for use in instruments.

Cherrywood is one of my all-time favourites. It has open pores; dark, striped red–green–brown colours; and a flexible structure. I love working with it – not only my instruments but also my kitchen table is made of it. Its density, compressive strength and flexural strength all fall midway between those of other fruit trees. Unfortunately, it is quite difficult to find a big tree that is also nicely figured.

Cherrywood looks especially attractive when slab-cut for a curved back. One comment often made about instruments made from cherry is that they sound like old ones. This wood creates a characterful sound, with colour and depth, but not necessarily volume.

All the four common types of fruit tree have different qualities: one is harder, another more bendable, another heavier or denser, and so on. With every piece of wood it's important to find out how best to use it. In the case of maple, it's much easier to have the same weight, density, arching height and thickness each time, but such guidelines are not so obvious in fruitwoods – which does, of course, makes them more interesting to use. With each instrument I make, I learn something new about wood types and how to use them.

BEECH AND ASH

Having chopped down trees after Christmas during a full moon, I store the wood for at least ten years to give it a chance to season before I use it. It's now coming up to the time when I can make use of some beechwood from a big tree (a metre in diameter) that I cut down ten years ago. This beechwood is very straight and not at all figured. I will get two slab-cut bass backs out of it, and am intrigued as to how the instruments will sound.

The other wood I'd like to use in the future is ash. Before Christmas I spoke with a Black Forest ranger about the possibility of getting some good trees from the upper heights of the mountains near my home. Hearing about what I wanted to do with them, he was very interested and positive about finding some trees for me this winter season – and I was excited when I went up there early this year. All I have to do now is wait for a decade before using them.

Musicians are often totally surprised when they learn what kind of wood I've used in an instrument. They find it exciting to play a bass or a cello with a back that's not made out of the usual maple but rather some type of rare wood. And for me, such experiments keep me on my toes with challenges that are important for the development of my instrument making – despite the fact that it doesn't always turn out as expected.

PHOTOS STEFAN KRATTENMACHER