

HOW TO MAKE VARNISH

ADELE BEARDSMORE cooks up a transparent golden varnish from a historical recipe



English violin maker and repairer Adele Beardsmore worked in the UK and the Netherlands before moving to Australia in 1994

In 1987, when I left the Newark School of Violin Making, I found myself in the position of most novice violin makers – still searching for a good varnish. For a while I took the easy way out and used a commercial preparation, but I soon

discovered that the colours were unstable over time. It wasn't until I met my husband, Alan Coggins, that the situation was remedied. Fortuitously, Alan has a science degree in analytical chemistry and he set about applying himself to varnish research.

As is the case in many traditional approaches to varnishing, the materials and methods we selected were based on examples found in historical records.

The varnish recipe itself comes from a British Museum document known as the De Mayerne Manuscript (BM Sloane 2052), which was written in the first half of the 17th century. The relevant item reads: 'Four parts of linseed oil, two parts pine resin, one part horse aloë. Boil these things until they turn golden colour and yield a varnish.'

This formula produces a transparent golden varnish that is very easy to prepare and has all the properties that we were looking for. It does require further colouring with pigments, however – just prior to varnishing, we grind in red or purple madder lakes, which we also make ourselves, by extracting the colour from madder root into an alum solution and precipitating with sodium carbonate. The pigments are stored dry and can be ground into the varnish with a glass muller as required.



ALL PHOTOS: ALAN COGGINS

The collected materials necessary for varnish making

[1] The colophony and aloë that I use are sold by Hammerl GmbH in Germany. Linseed oil can easily be obtained locally, but it should always be tested first by leaving a few drops on a sheet of glass in the sun to make sure it dries. It should be sun-thickened and bleached for many weeks (or even months) prior to use. I have not found it necessary to wash the oil, although some people also recommend this step.



Hot oil and fumes make careful preparation and outside working a necessity

[2] The varnish making procedure is reasonably safe but it does involve mixing solids into very hot oil so there is some danger of splashing. Make sure you wear appropriate protective clothing and have a fire extinguisher handy. There are also irritating fumes produced, so I always work outside. I make sure that I measure and weigh everything I need before I start.



[3] Adding colophony to the hot oil and stirring with a wooden stick

[3] I heat 500ml of linseed oil to around 280°C (536°F) in an enamel or stainless steel saucepan, and hold it at that temperature for about five minutes (which requires a suitable thermometer). I now slowly add 250g of colophony, stirring with a wooden stick to incorporate it into the hot oil.



[4] Aloe is added to the mixture, which is stirred constantly

[4] Next, I slowly add 125g of the aloe powder, and keep stirring.



[5] The aloe is charred to colour the varnish

[5] Don't worry – it's supposed to look like this! At first the aloe will form a rubbery black mass in the oil. I bring the heat back up to around 250°C (482°F) and hold it there for about five minutes, stirring continuously. The idea is to char the aloe thoroughly in the hot oil – it will either be incorporated into the varnish or else burnt to a crisp.



[6] Waiting for the mixture to cool and form a crust

[6] I now turn off the heat and leave the mixture to cool. Most of the aloe will have been integrated into the oil, which should have a clear, glassy appearance. The remaining blackened residue will float to the surface and form a crumbly crust that will harden and consolidate as it cools. »



[7] Pouring off the varnish and filtering through a medium-weave cloth

[7] While the mixture is still warm, I break a small hole in the crust near the edge and carefully pour off the varnish, filtering it through a medium-weave cloth. If it looks muddy or cloudy then I know I haven't heated it enough – in which case I return it to the hotplate and try again.

When the varnish has cooled completely, it can be thinned to the desired consistency with gum turpentine – we usually find we need to add around 100ml, but it will depend on how much you initially sun-thickened the linseed oil.



[8] The varnish is bottled and left for a month before using

[8] I bottle the varnish and leave it for a month or so before using. If there are any remaining solids, they will have a chance to settle out. The final product should be quite transparent. While I'm waiting, I fill in the time by trying to clean the black residue out of the saucepan!



[9] The aloe varnish, coloured with madder lakes, is seen here applied to the scrolls of a violin and a viola. ■

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