

Bonsai: Data & Protocols

Topic: Needle Reduction on Japanese Black Pine

Japanese black pines (*pinus thunbergii*) are among the most sought after of all pine species for development into bonsai. This two-needle variety of pine is an extremely vigorous grower which actually seems to thrive on container cultivation. Beyond the many and varied aesthetic attributes which make this pine so popular is the plant's willingness to produce new growth on old wood and short tight bundles of needles.

Black pines are certainly not the shortest needled pine variety used for bonsai. In fact, the needles on some species are longer than what would normally be tolerated in "good" bonsai material. Its response, however, to proper needle reduction techniques, will produce markedly smaller needle size, even in those black pines with exceptionally long needles.

Anyone who wishes to become successful at bonsai needs to look beyond the "rules" and "guidelines". When students stop memorizing rules and begin to ask "why", they truly begin to develop as bonsai artists. It is as important for you to understand WHAT you are doing as it is the ABC's of how to do it.

So... what happens when you reduce needles on a pine tree? You place the entire tree in a condition of stress. This is not necessarily a bad thing. By understanding how a particular plant responds to stressful situations, we exact a control over it which we would not otherwise have. Understanding and controlling how a plant grows is critical to being successful at bonsai.

We are not telling you to bring your tree to the point of death, but we are telling you to stress it. Many plants, (and some human beings) perform best under a little stress. In bonsai, stress is used to obtain a specific result. Flowering plants, for example, are often allowed to become a little pot bound. The resulting stress cause the plant to attempt to propagate itself by producing first flowers then fruit followed by seed. We often defoliate maples and hornbeams. The defoliation activity stresses the tree into believing it needs to respond to a new "springtime." Air layers are produced by choking sap flow to a particular branch and then providing a new environment into which the plant can grow new roots. So go ahead and stress your black pine, but understand what you are doing and how far you can stress the tree in order to make it respond in the way you wish it to.

What follows is the needle reduction technique used here at the Bonsai Learning Center in Charlotte, North Carolina. Depending upon the growing conditions in your area, the times described below may vary slightly. Also understand that this is a protocol which works for us. It is by no means the only method universally used for the reduction of needles on black pines. There are many variations on this protocol... BUT they are all doing exactly the same thing: (i.e. - removing needles from a black pine in a calculated way and within a calculated time frame which will cause the tree to produce new secondary buds (candles) which will be more numerous, shorter in length and back further on the branch.) Use our protocol... or another protocol... or develop your own. But above all, listen to what the tree has to say, do what needs to be done and observe and learn from what you do. Knowledge, as the saying goes, is power!

Remember that black pine reduction techniques CAN NOT be used on other species of pines. Because black pines are such vigorous growers, they will respond as anticipated. The same technique used on another kind of two needle pine, which is not as vigorous, may result in a dead tree.

Make sure the black pine you are working on is healthy and vigorous. If it is not in good health, do not attempt the procedure. Likewise, if the tree has been freshly transplanted, do not attempt the

procedure for at least one year. Because of the stress placed on the tree, we recommend that this procedure only be done every other year, giving the tree a year off to regain its strength. In alternate years, the general candle and needle control techniques used for all pine bonsai can be applied to your black pine.

NEEDLE REDUCTION PROTOCOL

First Year/Late fall or winter - Go through the pine and eliminate all large center buds. Do this over the entire tree after it has gone dormant so that it does not have a chance to set new buds in the same year.

Second Year/Springtime: Allow the remaining candles to elongate and grow. Feed the tree with a high nitrogen fertilizer.

Second Year/June 1 - Go through the entire plant and cut off ALL of the new growth (green elongated candles). Yes, we know it sounds insane... do it anyway.

June /First week - Remove needles from the lower third of the tree leaving only about 8 to 10 needles on each branch. Do nothing to the remainder of the plant.

June /Second week - Remove needles from the middle third of the tree leaving only about 5 to 8 needles on each branch. Do nothing to the remainder of the plant.

June /Third week - Remove needles from the top third of the tree leaving only about 3 to 5 needles on each branch.

Air and light are the keys to getting the pine to produce new buds. Since pines are apically dominant (strongest growth to the top), our needle reduction technique begins at the bottom of the tree and leaves a few more needles to draw energy down the branch than it does at top. This gives the bottom and middle branches a head start on the upper branches. Keep the plant in full strong sunshine and continue to feed with a high nitrogen fertilizer. An abundant crop of new buds should be visible before the middle or end of July.

Late summer/early fall - As the new buds develop, elongate and harden off, the older and longer needles which were left on in June may be eliminated.

Removing Needles: We recommend a good pair of pine tweezers. Grip the needle bundle near the base and pull off in the direction of growth (outward from the branch). It is OK to leave the needle sheath on the branch. Needles may also be cut back to the sheath as well.



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Offering educational opportunities in the art of Bonsai, plus a varied selection of plant materials, tools, containers and supplies for the art.