



# GROWING JAPANESE BLACK PINE From SEED

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# *Pine from Seed*

*by Kusida Matsuo*



*Kusida Matsuo began growing bonsai in 1964. Like many western growers and enthusiasts, he started from scratch – first with collected seedlings and finally with collected seeds. In Japan most bonsai artists start with collected stock or nursery grown stock that is already quite developed. They leave the early stages to Mother Nature or to other growers. In this regard, Mr. Matsuo's methods are unique – and very useful. If you carefully follow the steps he presents, in a few short years you can have very impressive black pine bonsai (many of the techniques can be used for other varieties as well) that cost little more than the labor of love.*



Yatsubusa black pine. Twelve years from seed. Height: 10 1/4", trunk diameter: 3 3/8"



Yatsubusa black pine. Eleven years from seed. Height: 11", trunk diameter: 3"



Yatsubusa black pine. Twenty years from seed. Height: 24", trunk diameter: 5 1/2"



Black pine. Eight years from seed. Height: 7 1/2", trunk diameter: 1 5/8"



Kusida Matsuo, a pioneer black pine grower, has good reason to smile.



Not a good parent tree.



A good parent tree. The best parent trees are those that are growing alone, have abundant low compact branching, and dense needles that completely cover their shoots.

When I began growing bonsai professionally, everybody laughed at me. I wanted to start with the smallest investment possible and obtain high yield, quality bonsai material in a very short span of time. People thought I was joking, but I wasn't, and I succeeded.

Since I had no money, I decided I would have to grow my own trees from seed that I would collect myself. This required nothing more than a walk in the mountains with a sack and a keen eye for pine cones on parent trees that had the right characteristics.

Once I decided on collected seeds as the best way to start, I needed to figure out how to obtain rapid results with the seeds. After investigating and testing various ideas, I finally arrived at the method that is shown in these pages. This method effectively doubles the apparent age of trees, so that ten-year-old pines appear to be about twenty years old.

First, you need to carefully select the parent trees. Always choose mature trees so you can tell if they have desirable traits, like thick trunks and low compact branching. The best are those that are growing alone, rather than tall ones with all their branches in the crown that you find in thick forests. The best cones are those that grow on the dense south-facing branches.

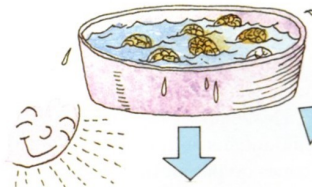
It is important to look at a potential parent tree's shoots. If the bases of the shoots are bare, look somewhere else for pinecones. If the bases of the shoots have plenty of short, straight needles, you have come to the right place.

Always pick pinecones from the tree, not from the ground. Mid to late fall is the best time to do this. Collect only large cones with tight scales.

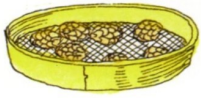
When you get the cones home, soak them for a day in a pail of water with some lime-sulphur added to clean up any fungi. Next dry the cones in the sun on screen or wire benches. When they are dry, open them and remove the seeds. Then separate the seeds from their little wings by rubbing some together between your hands.

## EXTRACTING THE SEEDS

Let the pine cones soak for a day.

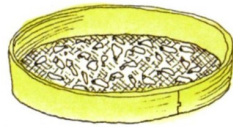


Dry them out in the sun.



Good cone.

Poor cone.



Separate the wings from the seeds.



Sort the seeds into three sizes.



Watch out!

- Rejected. ●
- Reserved. ●
- Accepted. ●



Keep in a dry, dark place.

Next, select the largest healthiest looking seeds and put them in a brown paper bag (Mr. Matsuo separates the seeds into three groups: the largest, which he sows first, medium sized which he holds in reserve, and the smallest, which he throws away). Store the bag in a cool dry place that is protected from insects and critters.

Sow the seeds in early spring. First soak them for three days. Any that float are dead, so throw them away.

Use a plastic or wooden flat with good drainage. The soil you use should have excellent drainage. I use 80% river sand and 20% sterile sphagnum moss. Use a matchstick to make holes about 3/4" apart at a depth of about twice the thickness of a seed. Drop one seed in each hole, cover them with soil, and then move the flat to a sheltered spot out of direct sun and wind. Water thoroughly, then check the soil daily and water as soon as it becomes dry (no sooner, no later!). In ten or fifteen days you should see new plants peaking through the soil. A week or so later, most of them will begin to open out their needles.

Now alternate fungicide and vitamin B1 with each watering. As before, water only when the soil is dry. If the soil stays wet too long, you can tilt the tray by shiming one side. This should improve drainage.

Here are some of Mr. Masuo's black pines that were grown from seeds. As you can see, the results are astounding, considering the time from seed. You'll notice that some are called *yatsubusa*. Loosely translated, *yatsubusa* means dwarf. At the time of the original article (1991), Mr. Matsuo was working on developing a consistent and sustainable supply of this dwarf variety. *Though the original Japanese article doesn't say, our guess is the yatsubusa variety is Mikawa (named after a region in Japan).*



Black pine. Seven years from seed. Height: 6 1/2", trunk diameter: 2 1/8"



Black pine. Six years from seed. Height: 4", trunk diameter: 1"



Black pine. Nine years from seed. Height: 10 1/2", trunk diameter: 2 3/4"



In June or July of year five, pinch back the lateral growth.



Some trunks may turn out straight.



Now you can wire the lateral branches.



The trunk is thickening nicely.



Now that it's in a bonsai pot, it's time to cut off the leader.



Mr. Matsuo decided to pot this sweet little shohin in a bonsai pot after only seven years. Many of his pines stay in training pots much longer. Height 4," diameter 1."

By the fifth year, some of your little trees will be getting ready for regular bonsai styling. In July, cut the leader back just as before, to just above a branch that will become the new leader. At the same time, pinch back the lowest branches to begin to create more density.

In April of the following year, remove the trees from their colanders. Remove all the soil and cut the roots back to where the walls of the smaller colander were. Then prune the remaining roots just as you would for any bonsai and place the trees in bonsai pots (or bonsai training pots) of your choice. Now protect your freshly potted bonsai from the sun and wind and wait for budding.

When fresh buds appear, cut the long leader off completely and wire the lateral branches. This is also the time to begin the annual process of balancing energy throughout the tree (see pages 109 & 111-117).

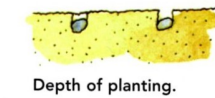
Now comes the fun part. The little seedlings will have green stems when they first germinate. When the needles open, the stem color changes to a rosy color and then to a violet color. When the stems are violet, it is time to cut the roots.

Choose the seedlings that have the thickest straightest needles. With a gentle tug, pull the baby plants out of the soil. Take a razor blade and cut straight across the stems about 1" below the needles. As soon as you cut one, place it into a pail of water and move on to the next one. For a second optional cutting, see the accompanying diagram.

Choose small plastic pots with excellent drainage to plant your seedlings. For the bottom layer of soil I use small stones, about 1/4" to 3/8." I use the same mix I used before for the rest of the soil. If you like, you can use three grades of soil rather than two (see diagram).

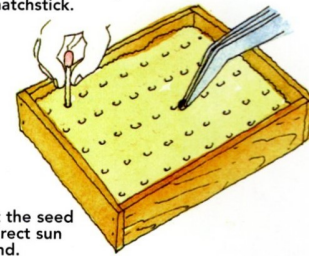
Take the plants out of the water and powder each stem with a rooting compound (if you prefer, you can use a liquid rooting compound when you water). Plant one seedling in each pot. Leave 1/8" to 1/4" of each exposed above the soil line. Move the pots to a sheltered spot out of direct sun and wind and water thoroughly.

### SOWING



Depth of planting.

Make small holes, spaced about 3/4 inch apart, with a matchstick.



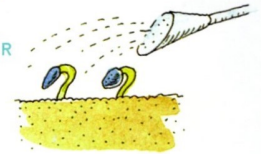
Protect the seed from direct sun and wind.

### GERMINATION

TEN DAYS LATER



A good seedling.



### SELECTION

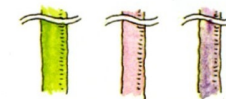


A poor seedling.

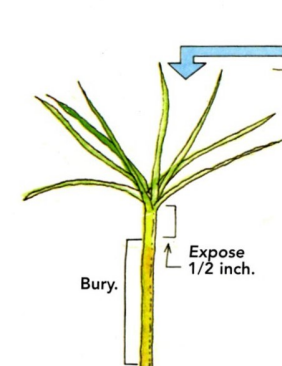


Pull out the poor seedlings before they grow very large.

### CUTTING ROOTS

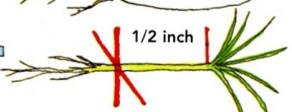


Watch for the stem to change color to violet.

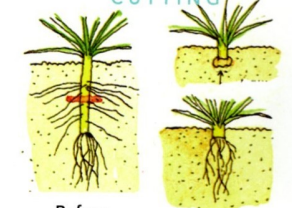


Bury.

Expose 1/2 inch.



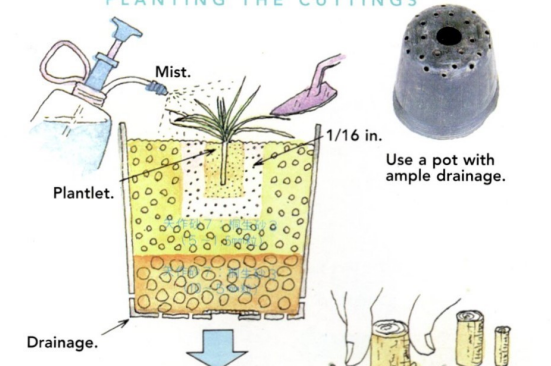
### SECOND (OPTIONAL) CUTTING



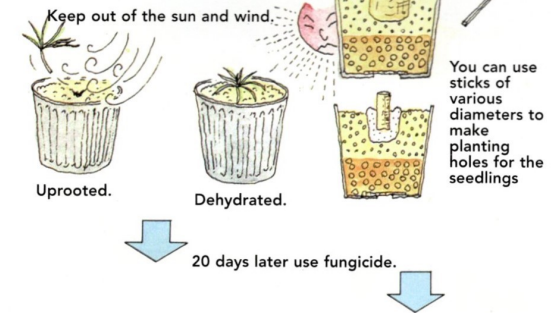
Before.

After.

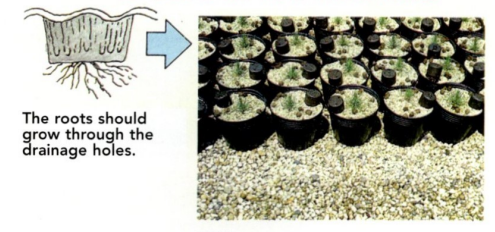
PLANTING THE CUTTINGS



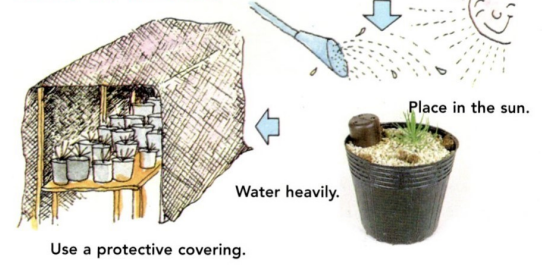
POST-TRANSPLANTING CARE



40 DAYS AFTER PLANTING



CARE IN WINTER



About six weeks after planting, you should begin to see little roots poking out the drain holes. When this happens, you don't want the pots sitting directly on the ground. I place mine on a bed of gravel so the roots don't sit in water.

Move the pots into the full sun and start fertilizing around July 10th. A well-balanced fertilizer with plenty of nitrogen is essential. I prefer organic slow release balls, specially formulated for bonsai. Three or four balls per pot will last the entire growing season (*Bio-gold triangles work well, though they are smaller, so you'll need to use more*). If you prefer liquid fertilizer, dilute to 1/2 strength and apply once a week until the fall.

Watering requirements will go up dramatically with vigorously growing plants in full sun. You may even need to water several times on hot days. If you've done everything right so far and continue to do things right, you'll have all the elements of the magic formula working together: sun + water + fertilizer + drainage = vigorous growth.

Around mid-fall, when the cold winds start, cover the plants with netting for winter protection. *If you live in a very cold climate, you'll need more than just netting.*

You can begin to shape with wire in the late winter or early spring. You'll probably need to remove a few lower needles to make room for the wire. Try not to disturb needles that have buds at their base. Use 3 or 3.5mm wire. Leave it on long enough for it to begin to score the bark (but not long enough for the bark to completely cover the wire). This will accelerate trunk thickening and the scars will heal soon enough. (*Mr. Matsuo recommends that you intentionally scar the trunk only with the first wiring - with subsequent wiring, be careful to avoid heavy scarring*). Continue to fertilize and water through the growing season.



Year two.



Year four.



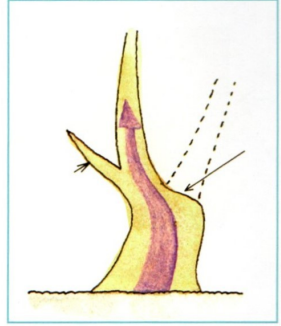
In the fifth year you may be tempted to cut the apex off. Don't do it! Instead cut it down to its first lateral branch.



Fifth year.



Seventh year.



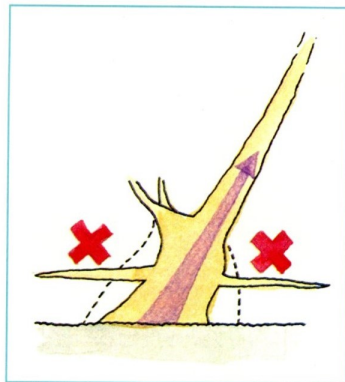
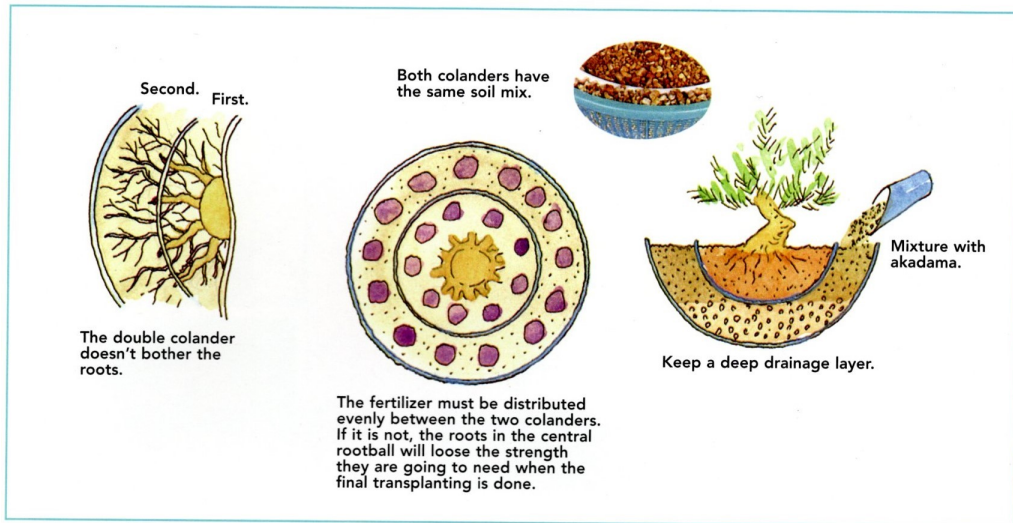
View of new leader from above.



Appearance in the first year of training.



At the end of the fourth year, the trunk has thickened sufficiently to permit design pruning.



4th year. Time to move up to the larger colander. Now growth will be unstoppable. The Xs indicate the smaller branches whose growth will be slowed down because the leader is allowed to grow. This is fine for now, as you are primarily concerned with trunk development.

By now your trees are in their fourth year and they will have developed a long strong upper leader with some smaller branches down low. Though you might be tempted to cut the leader completely off to encourage the smaller branches, don't do it. If you let it continue to grow, it will accelerate the thickening of the trunk. Instead of cutting it off, shorten it to just above a branch. This branch will become the new leader. This is the clip and grow styling method. Now let this new leader grow freely.



You may have to remove some needles before you wire, but try not to damage any buds. In addition to shaping, wiring will help thicken the trunks, if the wire is left on long enough to scar the bark.



After the first wire has been removed. Scarring has accelerated thickening by about one year.



Don't coil the wire too tightly.

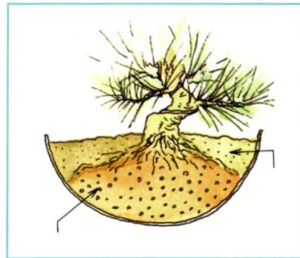
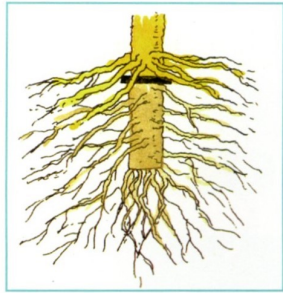


This way the branch can grow freely.



Normally you wouldn't remove so many needles. Here they have been removed so the shape of the trunk can be seen clearly.

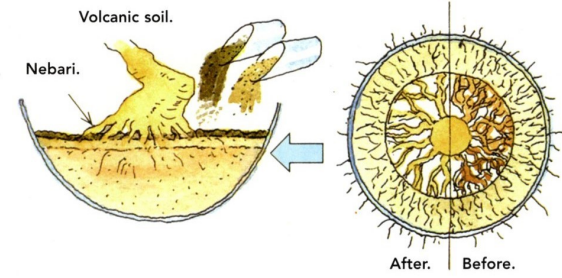
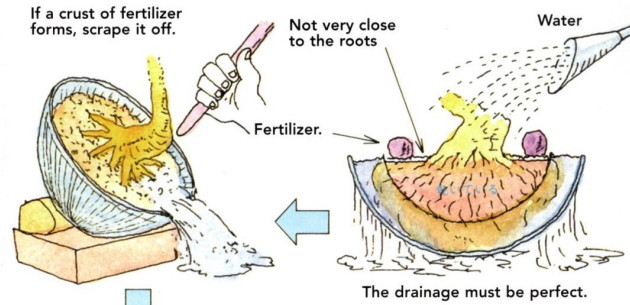
The following year, in mid-spring, it is time to rootprune and transplant. Completely clean all the soil from the rootballs and cut off the thick roots, while leaving as many fine roots as you can. For pots, you are going to use something quite unusual – 6" plastic colanders. The extra drainage and aeration works wonders for the formation of fine feeder roots, subsequent top growth and most importantly, trunk thickening. Another big plus with the colanders is that you don't have to worry about overwatering. The excess just runs right out.



Prune away most of the lower roots. This promotes the horizontal growth and strong nebari that are so desirable for bonsai.

For soil, I use seven parts river sand and three parts akadama. Spread the roots evenly and plant in the middle of the colander. Apply a rooting compound. When the new roots grow through the holes they will stop elongating and push out more and more feeder roots along their lengths.

As before, water several times a day and use plenty of fertilizer. As the trees increase in size you can increase the amount of fertilizer you apply. If you use solid organic fertilizer, it may eventually form a hard crust on the soil. Check periodically and use a chopstick to break the crust up, so the soil can aerate. If you don't want to water several times a day, replace the akadama in your soil with kanuma. This will slow down the drainage. *It will also slow root growth down a little.*



This scarring is too deep. Due to intensive feeding, the trunks grow very rapidly. This can cause problems with wire cutting into the bark. With the first wiring, moderately scoring the bark is desirable — it encourages thickening. However, with subsequent wirings, you want to avoid too much scarring — the older a tree, the longer the scar marks last. Use plenty of fertilizer for thickening the trunks — but make sure to remove the wire in time.



Fertilizing. Year one: moderate dosage — four fertilizer balls. The small plastic cap is to keep the fertilizer in place and protect it from birds and other critters.



Year two: increased dosage, six balls.



Year five: ten to twelve balls.



Year nine: the soil is almost covered with fertilizer. Notice how none are too close to the trunk.

Don't forget to continue to wire to achieve the shapes you want. But be careful — now that your pines are growing more vigorously than ever, you'll need to check regularly to make sure the wire doesn't become embedded in the bark. You may need to unwire and rewire two or three times in one growing season.

The following year the trunks should be close to 2" in diameter. It's time to move your trees into 8" colanders. Put some drainage soil in first. Then place the 6" colander, tree and all, into the 8" colander and add some regular soil. This double colander technique will prevent any root disturbance so you don't lose any growing time. Staying with colanders has the added advantage of promoting excellent nebari growth.