

PINE MANAGEMENT THEORY

PART 12



By
Greg Cloyd

Jin On Pines

Kathy Shaner has stated that she de-emphasizes elaborate jin on pines since they have soft wood. She reduces jin to rough stubs and colors lime sulfur gray to blend in with the bark. Her rationale is that, over a decade or two, jin is minimized by nature into barely noticeable stubs that visually blend with the bark. This degradation of jin is especially fast in moist environments.

In contrast, Andy Smith mentioned the nineteenth century Custer Photo Survey of the Black Hills of South Dakota. Elaborate deadwood of less than an inch diameter is noted in these photographs. When the survey was repeated a century later, many of the same pieces of wood could still be identified! This, of course, is an extremely dry environment with very slow growing Ponderosa pines. Harder wood, tighter annual growth

rings and heavily pitch saturated deadwood is characteristic of very old and slow growing dwarfed mountain pines. Nursery grown pines, on the other hand, have relatively soft wood that will rapidly decompose.

Shari wounds encountered on dwarfed mountain pines have been compartmentalized over decades or longer. The plants that are unsuited to survive with large shari die in nature. Imposing large shari on nursery pines, risks plant death.

Many years of robust growth and energy investment in callus formation, defensive chemicals and wound compartmentalization are necessary to ensure a return to health. Most nursery grown pine bonsai simply are not given enough time to properly recover from such a wound, especially if grown in a container.

After large branch removal, sap withdrawal often occurs, especially if

the branch was not weaned from the tree gradually. Over time a slight V-shaped depression will be noted in the bark below the dead branch. This is a dead cambial area caused by sap withdrawal. Many western, arid site bonsai growers can ignore this area without causing problems for their trees. In the more humid parts of the country retained bark over dead wood acts to create a soft, punky rotting area. Moisture is slow to dissipate under old retained bark especially if a large jin shades the dead area. This problem is best avoided by cleaning old bark from areas of dead wood if you live in a humid environment.

The answer to whether a jin or shari should be placed on a pine is, it depends. It depends on the hardness of the wood, the pitch saturation of the wood, the location on the tree, the age and vigor of the tree, the amount of recovery time the grower is willing to allow the tree, the amount of risk the grower is willing to take, the proposed design and finally the personal taste of the bonsai artist.

Spring Repotting And Soil

Earlier generations of Japanese-Americans in California used fine particulate clay garden soils for bonsai training and experienced success through very careful and infrequent watering. Currently, mainstream pine growers use rapidly draining, coarse particulate soils. Therefore, more frequent watering is necessary. A mixture of akadama clay and coarse particulates with excellent porosity and free drainage is the standard for pine bonsai soil in Japan. Organic fertilization is, likewise, the standard. Pines, in general, require less frequent



WM. N. VALAVANIS PHOTOS

Japanese five-needle pine, Pinus parviflora, displayed at the 2003 National Bonsai Exhibition in Tokyo.

fertilization and watering than other bonsai. They are mycorrhizae dependent plants. Soggy, anaerobic or over fertilized conditions suppress mycorrhizal growth. When repotting pines, it is best to remove less soil than is common with many deciduous plants. You should also reinoculate with some of the native mycorrhizae when repotting.

Cork bark black pines and Ponderosa pines are particularly slow in root growth. These plants should not have roots greater than pencil size removed, unless, vigorous proximal side roots are noted. Longer roots should be carefully curled and placed under the main root mass rather than trimmed. Because the roots grow slowly, repotting schedules may vary from three to ten years. Deeper pots are horticulturally superior for pines because of the superior drainage and root zone temperature moderation. Deep pots are especially useful for collected arid site Mountain pines and slow root growth pines that are infrequently repotted.

Timing Of Repotting

Root tip growth begins just prior to noticeable swelling of the buds in late winter. If the pine is gently lifted from the pot, the fine root tips will have turned from light brown to white. These tiny, fine root tips should be visible by the hundreds or thousands. If only a few swollen or slimy root tips are visible, the tree is weak. Root tip growth initiation is the optimal time for repotting, the time when transplantation shock and mortality are lowest. Later, you will observe white root tips that have significantly lengthened. You may still repot, but root tips are more easily broken and the risk of mortality increases. Major wiring work and Japanese black pine large branch removal ends and fertilization begins at this time in traditional Japanese guidelines.

Further comments on soil and repotting schedules are best left to local experts. In different growing areas, timing and frequency of repotting vary markedly. Successful local

soil mix recipes also differ greatly. Many people in northern Ohio repot their pines in April. Since I use a greenhouse kept just above freezing in winter, I am usually able to repot pines in February and March, similar to more southerly areas.

After repotting, remember that you should forego decandling and other aggressive refinement techniques until the tree shows multiple signs of strong vigor.

Traditional Versus Contemporary Styling

Triangle silhouettes are frequently taught in pine bonsai instruction. On the other hand, oft-repeated advice for advanced bonsai students is to emulate the mature trees observed in nature. In keeping with the tradition of pine bonsai literature, these are seemingly contradictory pieces of advice. It is true broad-headed domes are frequently seen in nature on mature pine trees and triangular silhouettes are more frequently observed on young and middle-aged pines.

Dennis Makishima's viewpoint is that, while it is acceptable for a mature landscape tree to shade out and lose interior and low branches in the process of becoming an old, broad-headed and domed tree, loss of interior and low branches is,

generally, undesirable in a bonsai. The triangle silhouette, on the other hand, avoids interior shading and dieback; thus preserving the long term viability and future training options of the tree. This is not to say that rounded tops are undesirable on mature bonsai. It is only an admonition to carefully control the apical dominance of the plant and to preserve the interior and lower branch vigor so that maximal styling options remain available.

Current "contemporary" Japanese styling frequently uses large rounded heads to emulate the domes of mature landscape pines, in contrast to bonsai styles of fifteen or more years ago which used more traditional triangular silhouettes with smaller tops. Rigorous application of winter needle thinning techniques, robust vigor, larger pots and more aggressive fertilization are necessary to maintain trees in the "contemporary" style.

The risks of large domed tops include interior branch and lower branch shading. Moreover, miscalculating the amount of thinning the tree can withstand is quickly disastrous. Development of large branches and swollen branch junctions occurs quickly if the tree remains too vigorous.

The advantage of contemporary



Japanese black pine, Pinus thunbergi, displayed at the 2002 National Bonsai Exhibition in Tokyo.

styling is that poorly placed branches and multiple branches arising from a single point of origin can still be cleverly arranged to make a pleasing silhouette. Undoubtedly, plants that previously would have been considered inferior or unusable for bonsai are now rendered masterpieces in the contemporary style.

In contrast to "contemporary" styling, the older, "traditional", school of bonsai training emphasizes greater negative space areas or more sparseness, fewer and lighter branches, and shallower pots with more meager fertilization. Finally more triangular silhouettes are used. This traditional styling school is the philosophy taught by Dennis Makishima.

Fertilization Of Japanese Black Pine

Japanese black pine fertilization begins when the buds begin to swell noticeably. This is usually March in the northern United States. Initially, fertilizer balls are placed one per pot corner for an average sized tree. Increase to eight fertilizer balls in April. In May, the number of balls is increased to sixteen. Early spring fertilization is emphasized to produce a maximal number of second flush, new shoots, especially in weaker areas of the tree. Unwanted buds can be rubbed off or unwanted young shoots removed in summer without scarring the tree. After decandling, the plant is temporarily dormant. The apical meristems or growth hormone factories have been temporarily removed. The fertilizer balls should be removed when the first decandling cut is made on Japanese black pines or the first candle is broken in half on Japanese white pines. Do not fertilize the tree again until late summer and autumn. Let needles emerge, elongate and harden. If you continue to fertilize during the second growth development, you will promote coarse growth characterized by distorted buds, long internodes, long needles and misshapen needles.

Overwatering and overhead watering during the second flush needle emergence can result in undesirable long, soft and yellowish

green new growth.

Re-start fertilization of Japanese black pines in late summer after the replacement shoots have hardened. In late summer, use half the number of fertilizer balls you used on the tree in the spring or consider using fish emulsion.

Remember Japanese black pine techniques are designed to weaken a strong tree. They take advantage of the tree's strong tendency to send out adventitious buds on the interior of branches and multiple replacement shoots at decandling sites. The spring fertilizer increases the tendency of the plant to produce new summer shoots. These replacement shoots can then be kept fine by carefully monitoring water and withholding fertilization during the emergence and hardening of the replacement shoots. The goal is for replacement shoots to be finer, with shorter internodes and shorter needles. These fine shoots are used for wire training. For this reason, it is important to avoid fertilization and overwatering in the late spring and early summer. Otherwise, you will have coarsened the replacement shoots and wasted the previous season's preparatory work.

Foliar Feeding

Dennis Makishima recommends foliar feeding of weak branches throughout the growing season. He uses one-half strength fish emulsion every three weeks or one-third strength foliar feeding every two weeks.



ABOUT THE AUTHOR

Greg Cloyd

Greg Cloyd is a serious bonsai hobbyist who has studied pines for many years. He has organized an advance bonsai study group and invited many of the top pine specialists from the country for discussions and educational programs. The search for authoritative information on pine has recently led him to Japan where he visited many of the top growers.

Dr. Cloyd is a physician and member of the Cleveland Bonsai Club. He is also interested in native collected trees. He freely shares the results of his research and study by presenting programs and writing articles for publications. He maintains an impressive bonsai collection in Hudson, Ohio.



Japanese red pine, Pinus densiflora, displayed at Kunio Kobayashi's Shunka-en Bonsai Museum in Tokyo.