



What Do Gardeners Think About Pruning Trees?

Where trees are concerned, it seems most people have opinions. Some people think trees are beautiful and calming. Yet there others believe trees are too big and messy. Whether or not professional arborists understand these opinions, it does not change their fact-based views.

When people purchase tree pruning services, they often cannot recognize quality ISA or ANSI standard tree work. This is evidenced by the number of trees topped or over-pruned. To professionals and trained arborists this is horrific and destructive treatment of valuable shade trees. But to some folks this is just good ol' tree cutting - the bigger the brush pile the better and they're happy to have it hauled away.



Over the last few years I have been doing tree care 101 seminars for home gardeners. One of my goals is to raise awareness of recommended of shade tree pruning practices. To better understand the public's viewpoint on tree trimming, I began surveying audiences before each seminar. Using PowerPoint I show a picture to the audience and have them answer questions about what they are seeing. After surveying a few hundred people, I can share preliminary data on tree pruning opinions. In this issue of Landscape Notes I'll summarize the survey, show the pictures, and share some of my initial findings.

Question One: How should this young tree pictured left be pruned?

- A. Cut the top to create more branching
- B. Remove branches from along the stem
- C. It needs no pruning at this time.

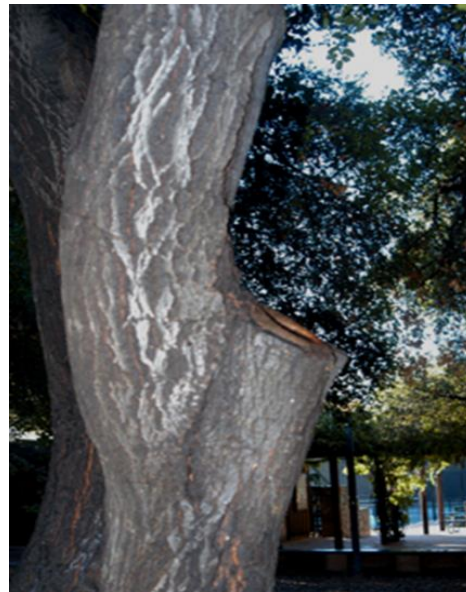
This image of a young mulberry shows a clear central leader with a slightly confused top. Temporary branches are well spaced along the trunk both vertically and in a helical arrangement. A few competing leaders are starting to form. Some pruning could be done to encourage a permanent central leader by pruning competing stems and not pruning the leader. Overall this tree could be left to grow another year without much pruning. All but 8% of attendees rightly understood that cutting back the top was not warranted. Answers B and C were almost equally popular with 46% and 47% chosen respectively. The highest percent rightly chose answer C. - for young and small trees, popular opinion favors less pruning.



For the second question the audience was shown a *Fraxinus uhedi* (Shammel Ash) which had been severely topped or headed back. The attendees were asked the following question: How would you rate this pruning?

- A. Acceptable neat pruning
- B. Not pruned enough
- C. Unacceptable pruning

As most arborists know ANSI A300 pruning standards and ISA BMPs do not allow for topping or indiscriminate size reduction pruning such as shown in the picture to the right. Audience response was a bit shocking. Twenty-five percent found the pruning acceptable neat pruning, 8% believed the tree could be pruned more, and 67% found the pruning unacceptable. This indicates more than 30% agreed topping is an acceptable pruning practice.



In the next question I attempted to determine the audience ability to recognize good pruning cuts. In one image (left), a very flush cut is shown on *Quercus agrifolia*, the Coast Live Oak. This cutting standard was abandoned after the work of Dr. Shigo and the onset of natural target pruning in the early 1980s (Shigo, 1984). The first cut shows no wound tissue response as it is a relatively fresh cut. The second image (right), shows a large cut, but is well angled with impressive callus forming around the wound. The simple question was posed: Which cut is better, A or B?



The final two images gauge opinions about large trees and their pruning needs. The first image (below), shows an excurrent grower, a London Plane tree (*Platanus occidentalis*).

First question, does this Sycamore require:

- A. Little or no pruning
- B. Some pruning
- C. Extensive pruning including height reduction cuts

Fifty percent of the audience selected A, 33% selected B and 13 % chose C, feeling that extensive pruning was required. Choosing A or B can be argued on a professional basis as we could defer pruning or remove minor deadwood and shape for balance as needed. But this sycamore *needs* very little pruning. It became evident that the audience was less likely to prune small trees that could use structural training, while they were more likely to prune larger trees requiring little pruning at all.

The last image shown (below) is a decurrent growing *Quercus lobata* or Valley oak. This image depicts the deliquescent Valley Oak towering over adjacent homes. The audience was asked if this tree was:



- A. Too Large
- B. Just right
- C. Could grow more

At this point the survey shifts away from pruning needs and looks directly at tree size. While in the Sycamore image there is a wide expanse of lawn and no direct target, the final image shows a residence covered by large limbs. Not surprisingly many respondents chose A as the correct answer. While the tree has had very little pruning over the last 20 years and needs a little for maintenance, the size of the tree is frightening to many people especially in such close proximity to a residence. Fifty-six percent believed the tree was too large, 33% just right, and only 11% felt it could grow some more.

The above statistics were gathered from audiences at the Master Gardeners' Mastering Your Home Garden Workshops which are outreach to the gardening public. More than 200 gardeners were surveyed and the results are tabulated in Table 1.

Table 1. Tree Pruning opinions of home gardeners in Ventura County

Survey location and Date	n	Q1 young tree ¹			Q2 Topped			Q3 cuts		Q4 Sycamore			Q5 White Oak			
		Question Answer and % response														
		A	B	C	A	B	C	A	B	A	B	C	A	B	C	
Hansen 1/24/15	67	8	66	27	16	7	76	67	33	64	29	8	55	30	15	
Goebel 2/7/15	79	4	42	55	27	8	66	46	54	39	43	17	54	35	10	
Hansen 1/30/16	56	14	27	59	33	7	60	59	41	39	48	13	58	33	9	
All meetings	202	8	46	47	25	8	67	56	44	50	37	13	56	33	11	
¹ Q1 is Question 1 in the survey; A, B and C are question answers; numbers are % of the audience choosing a given answer; n is the number of attendees at the meeting.																

In addition to the answers about the images, we collected demographic data on age and sex of the attendees. This allows question as to whether men and women perceive tree needs differently and if a respondent’s age has any bearing.

Table 2. Age of respondents to question five

Meeting	Average age of respondents at meeting	Response A ¹	Response B	Response C
1/24/15	62.8	64.7	62.3	61
2/7/15	63.2	64	62	61
1/30/16	61.0	64	60	63
Mean		64.2	60.8	61.6
¹ Numbers are average age of respondents in each category.				

The average age of audiences is fairly consistent between meetings, yet respondents choosing answer A are older than audience median. The data suggests that older respondents are concerned about tree size and pruning needs.

Opinion demographics are important when working with tree owners. While we need to sample more and younger audiences to fully understand the effects of age and other factors, these early data suggest that many tree owners do not necessarily understand best practices for trees and are likely to contract for the wrong kinds of tree services. In a future article I will further develop these statistics and pose more questions about tree opinions.

References

Shigo. A.L. 1984. Tree decay and pruning. *Arboricultural J.* 8:1-12.

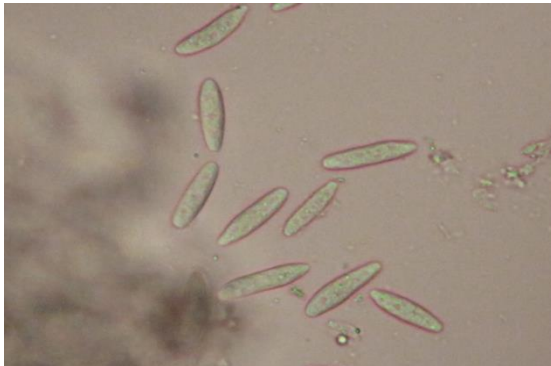
Bot Fungi Wreak Havoc During Drought

Plant pathogens cause damage which results in symptoms of disease. Nursery grown plants must be healthy and without symptoms as they are prepared for sale. Since growers of ornamental plants often grow many species, there is always an opportunity for a pathogen to attack nursery stock. Even though a grower has strict plant health programs, diseases find a way to infect some plants. Nurseries growing wood plants often suffer with disease caused by *Botryosphaeria* and affiliated asexual stages of *Botryosphaeria* such as *Fusicoccum*, *Neofusicoccum* and *Dothiorella*. *Botryosphaeria* (Bot) fungi are common in landscapes and wildlands and take advantage of drought-stressed plants. These are canker fungi and they infect pencil-sized stems on up to many inch diameter main stems or branches.

Bot fungi infect either as conidia from the asexual stages of the fungus or as ascospores from the *Botryosphaeria* stages. These spores are universally produced in dead or dying tissues on diseased plants. Spores are splashed in water, wind borne, or moved in brush, clipping or trimmings of diseased plants. Ascospores and conidia germinate readily at 28-32°C (82-90°F) (Sutton, 1990), suggesting that current weather conditions in California signal the onset of a difficult year with this pathogen. Germinating spores can enter directly into stems through lenticels or through wounds made during pruning or other injuries.

The various Bot fungi cause cankers and stem lesions on susceptible woody plants, and eventually girdle stems, resulting in foliage symptoms of yellowing to browning leaves and flagging or dead branches in shrubs and trees. Sometimes the tips of plants are affected, especially if plants are hedged or wounded repeatedly. Bot fungi seem to attack drought stressed plants. During drought, Bot fungi build large amounts of inoculum in dead and dying portions of affected plants. *Botryosphaeria dothidea* is the most commonly observed species but there are about 200 species worldwide affecting thousands of hosts. Native shrubs such as Ceanothus, Mountain Mahogany, and Manzanita are especially affected following or during drought (Brooks and Ferrin, 1994). Bot fungi also affect trees such as oak, alder, redwood, avocado, maple and apple, both in production and in landscapes.

Preventing drought stress by consistent irrigation helps to preclude infection by Bot fungi but does not totally prevent it in very susceptible species. Roguing out infested plant material or pruning out infected branches helps to reduce inoculum. On larger specimens pruning out deadwood is essential to controlling the disease (Bush, 2015), as the fungus usually sporulates in deadwood. Fungicides are available for control of Bot fungi but labeling must be checked before application. Fludioxonil, carbendazim, fluazinam, tebuconazole, flusilazole, penconazole, procymidone, iprodione, myclobutanil, and pyraclostrobin were all effective in controlling Botryosphaeria disease of grape (Pitt et al., 2012). Fungicides are best applied after pruning wounds are made to protect exposed tissues from the disease.



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Figure 1. Sexual spores from perithecia are ascospores in asci and are Named Botryosphaeria, this stage is called the teleomorph.



Figure 2. Many canker fungi not only kill the phloem or bark but invade the wood as here with B. dothidia in Ficus microcarpa



Figure 3. *Bot* fungi fruit in the dead wood. Fruiting bodies (pycnidia and perithecia) look like black dots. Often these are covered in dirt and dust so branches need to be washed to see the fruiting bodies.

References

- Brooks, F.E. and D.M. Ferrin. 1994. Branch dieback of southern California chaparral vegetation caused by *Botryosphaeria dothidea*.
- Bush, E.A. 2015. *Botryosphaeria* canker and dieback of trees and shrubs in the landscape. Publication 450-726. College of Agriculture and Life Sciences, Virginia Tech. Univ.
- Pitt, W.M, M.R. Sosnowski, R. Huang, Y.Qiu, C. C. Stell and S. Savocchia. 2012. Evaluation of fungicides for the management of *Botryosphaeria* canker of grapevines. *Plant Disease* 96: 1303-1308.
- Sutton, T.B. 1990. White Rot. *Compendium of Apple and Pear Diseases*. A.L. Jones and H.S. Aldwinckle, Eds. Amer. Phytopathological Soc., St. Paul, MN.