

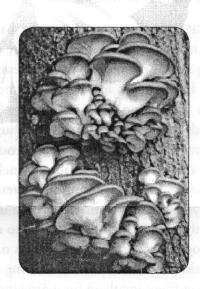
Growing Oyster Mushrooms on Small Diameter Logs

N3296 Kozuzek Rd. Peshtigo, WI 54157 fieldforest.net

Oyster mushrooms are the fruits of delicious, native, shade-loving fungi that decay wood naturally in the forests of North America. It is possible to replicate these conditions and cultivate them purposefully on natural logs.

Selecting the Trees: Oyster mushrooms will grow on any hardwood but prefer soft hardwoods like aspen, birch sweet gum, tulip poplar and soft maple. Since the Oyster mushroom fungus aggressively colonizes the wood, it quickly "out runs" competitive fungi that are commonly found in these soft hardwoods. Save your oaks for Shiitake cultivation.

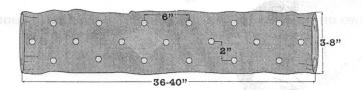
Trees must be felled live, during their dormant season, and inoculated as soon as possible thereafter. Log moisture content is about 40% at the time of felling, which is ideal for successful cultivation. Also, the risks of competing organisms (contaminants) getting into your logs increases with the passage of time between felling and inoculation.



You can use trunks and branches, and the ideal logs are 3-8 inches in diameter, cut into manageable lengths of 36-40 inches. It is helpful to keep them all nearly the same length for ease of management. For large pieces over 8 inches in diameter, we recommend using the Totem method as described in the Totem method instruction sheet or in our catalog.

Inoculation: Inoculation can occur at almost any time; however, early-mid spring and early-late fall, and winter in milder climates (daytime temperatures above freezing) is preferable. Inoculate as soon after felling as possible to prevent logs from drying out. To inoculate a log, you must drill holes through the bark, perpendicular to the trunk. The width of the hole you drill depends upon the type of spawn you have. Use a 5/16" bit for plug spawn or a 7/16" bit for sawdust spawn and outfit it with a collar stop set at 1" from

the tip. Using a standard greater the rpm, the betthe log. Drill a hole about Move 6 inches down drilling holes every 6 length until you reach the



household drill, (the ter!) start at one end of 1 inch in from the end. and drill another. Keep inches down the vertical other end. Now, move 2

inches over and drill another vertical row, starting your first hole about 3-4 inches from the end, staggering the holes so each hole is offset from the adjacent row. Your holes should outline the points of a "diamond shape". If you have a Mini-Pin starter kit DO NOT pre-drill logs because counts are approximate.

Unfilled holes dry out quickly, and can serve as traps for other types of spores.

Once you have drilled around the entire barked log surface, insert the spawn immediately. Do not drill all your logs one weekend, then inoculate the next weekend lest the holes dry out! Plug spawn can be tapped in with a hammer, sawdust spawn can be packed into the holes by hand, but you can speed up the process greatly by using a thumb-style inoculation tool. Fill each

hole completely. Immediately seal the top of each inoculated site with melted cheese or bees wax (get it hot!) with a disposable paint brush or our wax daubers, or, if using plug spawn, you can also use plug wax (no melting required, smooth it over the inoculation site with your fingers). Paraffin is an acceptable substitute but slips off in cold weather.

Incubation: Place your logs in a shaded area and aim for the logs to be in a place where the bulk of the growing season maintains daytime temperatures of 65 to 85 F. Laying them low to the ground speeds colonization (spawn run) in drier climates (elevate one or both ends of the logs by 6 inches in humid climates). If you are using short, thick pieces, you can stand them upright and shade them (conifer branches make a good, shady covering). It is important to prevent your logs from drying out at this time, but you do not want them

TAIOITIES

Oysters are delicious when chopped and sautéed, with or without the addition of onions, garlic and other seasonings. For "putting them by", fill a small zipper bag and freeze for easy and tasty additions to a future soup, entrée or breakfast omelet. You can also dry them; however the result is somewhat tasteless and tough. One of our favorite easy meals is to thaw a package of frozen sautéed Oyster mushrooms, warm them in a skillet and add chopped scallions and bacon pieces and spoon into a warm tortilla with or without grated cheese. Kids will not just eat these ... they will like them!

constantly wet either. You will have to monitor them and adjust your management based on weather conditions. Logs like at least 1 inch of rain or sprinkler fall a week. If nature does not provide and your sprinkler cannot either, shelter them by keeping them close to the ground and protected from sunlight and drying winds. Let them incubate for a growing season.

Fruiting and Harvest: Your logs may begin fruiting naturally the late summer or fall after inoculation or the following growing season. Look for "bumps" at the inoculation site. They will appear dark brown if they are Italian or PoHu Oysters, blue or deep blue if they are Grey Dove or Blue Dolphin, and yellow if they are Golden Oysters. Upon close examination, you will notice that these bumps are actually like clusters of little pins, hence the name "pin head" in mushroom cultivation terminology. These will grow and expand, turning into a larger, lighter hued version of the emerging pins. Pick them when they are 3-6 inches wide. You can pluck them from the base or slice them with a knife at bark level. If the weather turns dry and the mushrooms start to appear pale and leathery, cover them with burlap or pine branches and sprinkle the logs, as the moisture will not hurt the developing fruit.

Logs should bear fruit for two or more seasons past inoculation. To maintain a continual harvest, inoculate every two years.



Cultivating Oyster Mushrooms

Large Diameter Logs

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The oyster mushroom is a mildly flavored, gracefully shaped mushroom found growing on trees in the wild. The mushroom is a popular edible in many parts of the world because it can also be cultivated very successfully on a great variety of agricultural by products, plus they are delicious! Cultivators who wish to grow oyster mushrooms on a small scale without investing in additional equipment can grow them very successfully on logs. Because oyster mushrooms are best adapted to "soft" hard woods, suitable tree species such as soft maples, poplars, sweet gum, willow and other "weed" trees are often available in abundance. To cultivate your own oyster mushrooms on hardwood logs, follow the instructions for the "Totem Method," so named because you will stack the logs as if you were building a totem pole. When using this method you should have the following supplies:



2 to 6 large black plastic bags

2 to 6 large rubber bands

2 to 6 small rubber bands

2 to 6 paper grocery bags or a dozen sheets of news print

Approximately 6 to 12 logs of a freshly cut, living "soft" hardwood.

On average, 2 lbs. of grain will inoculate 6 logs (3 totems, 2 logs high). 4lbs. of grain will inoculate 12 logs (6 totems, 2 logs high). Sawdust spawn may also be used for the totem method. In general the same numbers apply; 2.5lbs. of sawdust inoculate 6 logs and 5.5lbs. of sawdust inoculate 12 logs. There are variations in these numbers depending on log diameter. The numbers above are based upon logs which are 8" in diameter.

Totem Method

Instructions: Select a soft hardwood tree that is alive and healthy, free from any obvious conks or cankers. The tree can be cut any time of the year except during the period of leaf out to about a month after full leaf development. Planting should commence about 1–2 weeks after felling if cutting occurs in the warm months, and up to several months after felling if cutting occurs in the winter or months in the early spring when temperatures remain below freezing for at least a part of the day. Cut your logs from the base of the felled tree and up the trunk, so diameters range from 6 to 12 inches. Try to make the cuts smooth and level, as this will aid stacking. Cut any branches off, so stubs are flush with the trunk. Cut the logs into 12–18 inch pieces. Transport them to where the Totem tree will be planted and incubated.

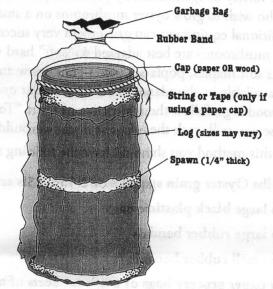
Incubation location: Ideally, logs should be incubated in a location that remains between 60 and 80°F. This can occur indoors, or outdoors in a sheltered location. Remember, black plastic bags heat up quickly. Be sure to find a shaded location.

Planting: Knead the grain spawn until the individual grains are separated and pourable. Likewise, crumble sawdust spawn into fine particles. Open the black plastic bag. Make sure that you are placing the bag where incubation

will occur; these are hard to move after inoculation! Place about a cup of spawn in the bottom of the bag. Take your first, fattest log and place it (vertically) on top of the spawn in the bag. Gently spread ½" to ½" of spawn on top of that log. Take your next fattest log and place it on top of the first. Spread another ½" to ½" of spawn out on top of that log. Open up a paper grocery bag or several sheets of newspaper, and place over the top of the log/spawn so the bag is in direct contact with the spawn layer. Smooth it down and fasten it into place, securing it with the biggest rubberband. Alternatively, in place of the paper simply set another piece of log on top of the spawn. This slice need only be a few inches thick, and if preferred, may be secured with one nail in the center. Draw up the black bag over the whole works and loosely close it with the smaller rubberband. Take care not to close the bag tightly; some air exchange is desirable! One turn of the rubberband is adequate.

Incubation: Keep the logs at 60–80°F (some fluctuation below is okay, be careful of temperatures above; thermal death within the bag occurs over 100°F). Let the logs rest for 4 months. Longer incubation is fine for up to a year.

Fruiting: Open the bag and disassemble the Totem tree. If the logs are of manageable size it is alright to leave the Totem together. Either way works well. The log should be at least partially covered with white, fuzzy growth, including the paper top. Place the logs outdoors in the shade. The more protected from wind the better as a steady breeze can dry out developing mushrooms. **Fruiting times:** Blue Dolphin: after the first frost. Grey Dove, Italian, PoHu: after several weeks over 70°F with a subsequent dip in temperature with rainfall; fruits intermittently throughout the summer months though most heavily in August-September. Golden Oyster: after several weeks of temperatures over 75°F, usually June–August. While initiation of fruiting is temperature dependent, mushroom development depends on the availability of humidity. The "baby" mushrooms will try their best to grow! If this occurs during a dry, windy period, (you'll see clusters like small pin cushions, usually at



the top and bottom of the log) construct a windbreak and sprinkle with water, if possible. Harvest the mushrooms when they get to be the size of a silver dollar or larger. Logs will fruit for up to two years, sometimes longer.

Pests: The ubiquitous black, spotted beetle is notorious for their love for oyster mushrooms, especially summer fruiting varieties. Covering the logs with a barrier such as a floating row cover (available at garden centers) can provide excellent control, however you must check underneath frequently so you don't miss fruiting! Planting Blue Dolphin also can help avoid the brunt of their season.

An Alternative to Using Plastic

Some prefer to steer clear of using plastic. There is an alternative, while more environmental, this method can prove to be tricky. Totems done this way must be monitored more closely. The totem is put together just as the instructions indicate, but it is never placed into a bag. It is assembled in a shaded location where it will remain throughout its "life." Seal the top and bottom of each log with 3–6" wood rounds, secured with a nail. Be sure that spawn is thin and even. Large cracks between the logs can lead to drying out (your number one concern). Pay attention to how much natural moisture the totems are receiving. It is likely you will need to water these logs in between dry spells. Water heavily about once a week verses watering lightly everyday. During the incubation period duct tape can be used to seal the cracks between logs. When ready to fruit simply remove the tape. We find that in general the more effort that goes into log inoculation the better the yields. Plastic serves as an extra step that helps to protect the spawn, but unfortunately plastic is not natural, and just doesn't decompose organically.



How to Grow Shiitake Mushrooms

on Natural Logs

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Shiitake cultivation can be fun, interesting and profitable, but it can challenge the greenest thumb, sometimes even when instructions are closely followed. Eventually, through experience, cultivators learn how to manipulate the environment (especially during drought, etc.) to benefit Shiitake growth. Here we provide all of the basic guidelines you will need to successfully produce mushrooms, but you may wish for more information than what we can provide in these few pages. Numerous texts are available through our catalog that detail the cultivation process, and will help to more thoroughly guide you through the next few years. We especially recommend Growing Shiitake Mushrooms in a Continental Climate written by Field and Forest Products founders M.E. Kozak and Joe Krawczyk. The book extensively details the biology and cultivation of Shiitake mushrooms and contains a wealth of information gleaned largely from their firsthand experiences growing shiitake commercially on logs and is written in an easy-to-read format. It



has proven especially useful for beginners, as well as a reference for commercial growers, and provides an inexpensive but thorough introduction to Shiitake cultivation anywhere in the continental United States and southern Canada.

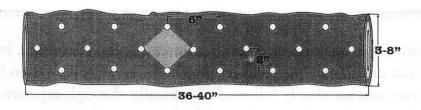
Selecting and Cutting Suitable Trees

Red Oak and White Oak and other members of the Oak family have proven to be highly favorable for producing Shiitake, so we recommend their use whenever possible. However, if oaks are not available, Sugar Maple, Ironwood, Sweetgum and other hardwoods will work. Select live, healthy trees, but not those whose future value lies in saw timber or veneer logs. If you are not sure what to cut, consult with a local forester. Some hardwoods to avoid are Black Walnut, Ash, Elm and Locust. Also avoid soft hardwoods such as Aspen and Willow, and do not use conifers because Shiitake grows poorly on these species. Fell your trees during the dormant season, i.e. winter. This period can be more precisely defined as the time between the canopy of the tree changing half of its color in the fall of the year to two weeks before bud swell in the spring of the year. Cut your trees as close to the anticipated inoculation date as possible. Log Moisture Content (LMC) at the time of felling is approximately 40%, which is ideal for successful inoculation and spawn run. The risk of compet-

ing organisms (contaminants) getting into your logs before Shiitake does increases with the passage of time between felling and inoculation. Choose logs between 3–8" in diameter and cut them into lengths of about 36–40" before inoculation. Logs that are cut longer are simply more difficult to handle, and logs cut shorter risk drying out unless managed carefully.

Inoculation

Inoculate as early in the spring as is practical. Temperatures can fall below freezing, but daytime highs should be above 40°F. You can successfully inoculate into late spring if you protect your logs from drying out.



To "plant" the spawn, drill holes into a bed log, then pack the holes with spawn. If you are using plug spawn, drill a 5/16"(8.5mm) diameter hole one inch deep. If you are using sawdust spawn, drill a 7/16"(12mm) diameter hole one inch in depth. If you are using thimble spawn you must use a 12mm drill bit (7/16" will not work!). Also drill thimble spawn holes one inch deep. For rapid colonization of the bed log, we recommend using the diamond drilling pattern shown in the diagram. Drill holes at intervals of 6–8" within a row along the length of the log. Space rows 1–2" apart and offset them to create a diamond pattern. Drill this pattern over the entire log, then insert spawn immediately. Plug spawn is easily driven in with a few taps of a hammer; sawdust spawn is best inserted with an inoculation tool. Thimble spawn is simply pushed in with your thumb. The driven plug and sawdust spawn should be slightly below bark level. The sawdust spawn should be firmly packed. **DO NOT pre-drill logs because counts are approximate. Unfilled holes dry out quickly, and can serve as traps for other types of spores.**

Waxing and Labeling Logs

Seal the spawn-filled holes immediately with cheese wax melted to a temperature of 350–400°F, or use plug wax right from the tub to sea plug spawn. There is no need to wax thimble spawn.

! DANGER!

The flashpoint of cheese wax is 450°F.

Do not overheat the wax!

Turn the heat down if the wax starts to smoke.

Have a fire extinguisher readily available.

If using melted wax, apply a thin layer of hot wax over the spawn with a wax dauber or paintbrush making sure the surface is sealed. Use aluminum tags to label the logs with the shiitake strain being used, the date of inoculation, and any other information required for personal record keeping.

Incubating or "Laying" the Logs

After inoculation, place your logs in a shaded area where summertime temperatures range from 60–80°F, and the relative humidity ranges from 80–85%. You will have to experiment with different log stacking arrangements to compensate for climactic and site variations. This is the most critical factor in successful bed log colonization. **LOGS MUST NOT BE ALLOWED TO DRY BE-LOW 30% MOISTURE CONTENT(MC) DURING THE INCUBATION PHASE.** Irrigate, soak, or lay the logs nearly horizontal to slow moisture loss and to keep MC above 30% and prefer-

ably above 35%. Midwest and Northern growers usually opt for the "lean-to" stacking configuration where logs are stacked in long rows, 4–8 logs per course with a cross log at the foot of each course. This way, each course of logs has their "heads" elevated a few inches and their "feet" on the ground. This style allows each log to grow in a naturally humid environment while avoiding ponding during wet periods. If the logs get too wet, stack them upright by moving the cross piece resting at the foot of the logs up to the mid-section to widen the angle and increase airflow around the log surfaces. You will have to keep an eye on your logs and make adjustments as conditions change.



Southern growers may opt for a low "log cabin" style laying position, carefully placing the logs to avoid rain shadowing. Additional details of these stacking configurations can be found in the book *Growing Shiitake Mushrooms in a Continental Climate*.

Fruiting Your Logs

If sawdust spawn is used, expect to see your first mushrooms late in the season of the inoculation year, particularly if wide range strains were inoculated into the logs. If plug spawn is used, expect mushrooms the following year. Look for them again during the growing season following the first anniversary of inoculation. Depending on log diameter, strain, and other variables, you can expect fruiting for an additional two to eight years.

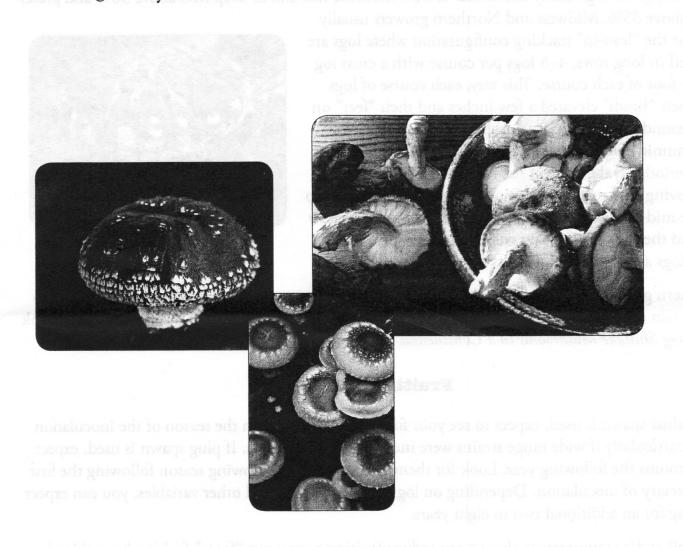
Rainfall and/or temperature change can induce fruiting or you can "force" fruiting by soaking logs in cold water for 8 to 24 hours, then stacking them in a more upright fashion that allows room for mushrooms to form and easy access for picking.

Mushrooms will appear within one to two weeks after soaking depending upon strain and weather conditions. The mushrooms are harvested by grasping firmly at the base of the stem and then twisting them off the log. The ideal time to harvest is when the cap edges are still well in-rolled, but about 80% of the gill area is showing.

After most of the log is decayed, Shiitake will cease to fruit. Outdoors this may take three to eight years or longer. Leave these depleted logs to decompose on the forest floor or add them to your compost pile. They will usually be too punky to burn well.

Cultivating Shiitake successfully, as with any crop, is dependent on a wide variety of factors. We wish you good luck and if you have any questions, please contact us at (715)582-4997. Our office hours are Monday–Friday 8:00 a.m. to 4:30 p.m. Central Time.

For a complete selection of high quality Shiitake and other specialty mushroom spawn along with a wide variety of mushroom cultivation tools, reference books, and mushroom related products, ask for our free catalog or visit us on the web at **www.fieldforest.net**. Questions may also be directed to **fieldandforest@centurytel.net**





How to Grow Wine Cap Stropharia



Delicious Wine Caps are easily grown on wood chips. They have the classic, robust mushroom shape, a thick white stalk and a port-wine colored cap. Sturdy in appearance, but somewhat fragile, they are an ideal choice for the home gardener. They can also get quite large in size, hence another common name, "Garden Giant."

Wine Caps are best planted in the spring if same season fall harvests are desired, though spawn can be planted any time in the summer as long as the bed can receive regular moisture, and can be placed in at least partial shade. Expect fruiting the following spring if planted later than spring of this year, though some fall fruiting will occur if conditions are good. You should see fruiting of Wine Caps around your property for years after planting if you are in the habit of transferring soil and organic matter around your yard. For maximum production, however, it is best to plant individual beds with fresh spawn every year.

Follow the instructions below for best results:

- Refrigerate the spawn upon delivery unless you will be planting in the next week or two. Otherwise hold the spawn at room temperature, making sure to take the spawn out of the box so it can breath. Though Stropharia can tolerate sub zero temperatures outdoors in the winter, do not freeze the spawn.
- Prepare the Wine Cap bed. While the association of bed and sleep is a natural one, remember that when you plant you want the spawn to be working hard! Proper bed preparation will help the spawn to do that!
- To prepare the bed, choose an area no larger than 50 sq. ft. (one 5.5lb. bag of sawdust spawn covers this large of an area). Alternatively, to plant one cubic yard of chips you will need roughly 9–12 pounds of sawdust spawn. The bed should have a soil floor or mulched surface, preferably free from weeds and sod. It should also be partially shaded unless you are prepared to watch the bed carefully for overly dry conditions. Shrub beds, alleys between asparagus rows, blueberry beds, or under apple trees that have been mulched (not sprayed!) all work well. Soil contact is beneficial (avoid thick sod

and dismiss cement pads). Partially shaded locations in the proximity of water are preferred because mushrooms on older beds emerge in June, when the weather can be warm and dry. Shade prevents mushroom caps from drying out. In many locations, the June fruiting may go undetected and it is not until the summer fruiting (August and September) when the humidity is high and overhead vegetation is fullest, that Wine Caps are noticed.

Bed Preperation:

- Select a source of wood chips or sawdust. Wood from soft hardwoods (soft maple, magnolia, box elder, poplar, etc) are preferable to hardwoods, though hardwoods are proven producers. Diverse particle size is ideal, avoid 100% fine dust if possible. Avoid coniferous (pine, spruce, etc) sawdust, although small amounts are fine, and some, such as white cedar, are proven producers. Mixed wood chips offered by local municipalities are often ideal. Spread a layer about 2–3 inches deep over the designated area. If the mixture is very dry, water thoroughly or even soak the wood chips and/or sawdust before spawning.
- Open the bag of spawn and crumble it up with clean hands. (If you are using peg spawn, see below). Sprinkle the spawn liberally over the bed surface (generally, about a quarter cup spawn per square foot of bed). With a rake, gently mix in the spawn. Cover the bed with another 1–2 inches of the wood chips, and then water lightly. Mulch thinly with straw or pine needles to keep the bed hydrated **OR** be vigilant with the garden sprinkler to keep the spawn layer moist, **but not wet** for the first 4 weeks. Be careful not to consistently drench the bed. Afterwards, a good watering (1" rain or sprinkler water) once a week is adequate to keep the bed healthy. Look for white thick thread-like growth at the spawn layer or near the soil surface at the base of the bed. Midway through the first season this is termed "spawn run" and indicates the spawn is at work!

Using Peg Spawn:

- If using peg spawn, prepare the bed as in "Bed Preperation," open the bag of spawn and pull apart the pegs if they are knitted together. Press each peg into the center of each square foot area. You probably will need to pound the peg an inch or two into the soil below with a hammer to secure it. Make sure the top of the peg is covered with a thin layer of the wood chips. Water lightly and follow remaining directions as above. From now on, you can watch the thick, white wine cap mycelium grow out from the peg into the surrounding wood chips. You can occasionally stir up the surrounding wood chips to hasten growth (termed "spawn run").
- After about 6–12 weeks of spawn run, or when the cool evenings of late summer begin, watch the bed. Emerging mushrooms look like a field of newly dug red potatoes. At this time, if the weather turns hot and dry, the mushroom caps may dry out and become leathery and unappealing. Keep them succulent by providing additional shade or a light watering. Harvest when young, when the cap just breaks away from the stalk, for the best eating. Slice and sauté caps and add to sauces or spoon over pasta, meats or toast. Fully developed mushroom caps are best painted with olive oil and grilled. The small ones are delicious braised or stewed whole.

Rejuvination:

You can rejuvenate the bed by adding another 2 inches of wood chips/ sawdust to the bed late fall

or the following spring. Give the bed a weekly watering as soon as daytime temperatures are in the 60's (F).

ALWAYS BE SURE THAT WHAT YOU ARE HARVESTING IS WINE CAP STROPHARIA

(Stropharia rugosa-annulata) Though unlikely, other mushrooms CAN grow there. If you are uncertain of what Wine Caps look like, contact the nearest mycological club to find someone who can positively identify your mushroom. You can do this by checking the website of the North American Mycological Society which lists all the active clubs around the country. There is probably one in your state! Contact www.namyco.org, or, call NAMA at (503)657-7358. Mushroom identification guides are also of great help. Here are a few other tips:

Cap size ranges from 2-10 inches across and is wine red/brown. The stalk is whitish, no distinct bulb or sack at the bottom. Instead, the stalk will be tree trunk-like with little white "rootlets" attached to the base of the stem and surrounding chips and soil. Gills are covered up when the mushroom is a button by a thick, cream to yellow membrane. As the cap grows, the membrane breaks away from the outside cap edge and



Wine cap ripening sequence: from left to right: Button, Cap differentiation, Initial cap separation from stalk, Full cap separation with exposed gills and ring on stalk, Aging ring, Stalk with ring fallen.

stays attached to the stalk, leaving a "ring" on the stalk. (See photo to right.) The ring has jagged edges, like a "kings crown," hence another common name "Garden King." The gills are light colored when very young, growing darker as the cap widens. An excellent test is to take a spore print, so if you are uncertain about the identification, wait for one of the mushrooms to mature, allowing the cap to almost completely unfurl so you may allow the spores to drop from the gills. A spore print is a "finger print" that can help identify groups of mushrooms. Spores drop from the gills. Their color helps to identify the group. To make a spore print, cut the stalk away from the cap when the gills begin to change color. Place the cap, gills down, on a piece of white paper. Place a bowl over the cap, and wait several hours. Remove the bowl, lift the cap and there, left on the paper, should be a colored print of the gills radiating from the center. The spore print of Wine Cap Stropharia is dark purplish charcoal black. Enjoy your mushroom bed and call us if you have any questions.

Growing Wine Cap Stropharia on Straw

No wood chips? No sweat! Wine Caps can be grown on straw. Though shorter lived (compared to wood chips or sawdust), straw and some other materials with lots of cellulose can work fine. Here's how:

Materials:

- 1 5.5 lb. bag of Wine Cap sawdust spawn (DO NOT use peg spawn for this application)
- 1 bale of straw

Large container to soak the straw

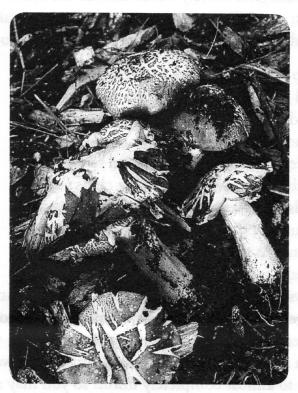
Mulch material (wood chips, including chunky bagged coniferous landscape chips such as cypress,

pine nuggets, more straw, leaves, newspaper, etc.)

• Select a bale of straw (often available from nurseries and garden centers) that is as weed free as possible. IF you have a choice, choose wheat or oat straw. The straw must be soaked in water for several days to hydrate and condition it. The result is a fully moistened and slightly fermented substrate that allows for fairly unfettered growth of the Stropharia mycelium.

Preperation of Straw:

 Select a suitable soak container and position it next to the selected location. You can either soak the bale as a whole in a large container (such as a stock tank) or separate the bale into sections and place into a clean trash can or similar container. Fill the container with water (city water is fine) and weigh the straw down with a cement block or something of similar weight. Let the straw soak, entirely submerged, for 3-6 days. Plan on inoculating the straw within several hours of draining the water away from the straw. After draining, grab handfuls of the wet straw and pack an inch layer in your selected location. Open the sawdust spawn bag and crumble a handful of spawn into pieces, as finely divided as you can, sprinkling over the straw. (Think light sprinkling of oatmeal with brown sugar). Place a 2 inch layer of the straw over the top. Top off with one more layer of spawn and 3 inches of the straw; then either tarp with clear plastic if the location is in the shade (you'll want to avoid solar heating), or mulch with straw, leaves, wood or bark chips (pines, redwood, ce-



Cracking of caps and silver coloring is typical when exposed to windy or dry conditions, especially during spring fruiting.

dars etc are fine)...whatever it takes to keep the straw underneath moist. After a week, poke around in the bed looking for a strong white fungal growth emerging from the spawn. If it is not, check the moisture of the bed. Too dry? Start lightly watering. If it is too wet (slick and soaking) back off on watering or cover the bed to shed natural rainfall.

Keep the bed covered until late July or at least 4 weeks, which ever comes first. After 4 weeks, remove any covering and wait for the right environmental cues! Natural fruiting will usually occur in May-June and August-September. Don't be surprised to see the Wine Caps emerging from the edges of the bed at the soil/bed interface. Look for the dark, reddish hued caps (almost like a crop of red potatoes dug and waiting to be collected), and white stems. The bed may last all of 2 growing seasons. Check for visible spawn growth after the weather warms the following year after inoculation. You can transfer part of the bed into more straw or wood chips, but transferring is more suited to wood chip beds. It is likely, however, that even by moving spent straw around, you'll have wine cap Stropharia around here and there for as long as you garden!