

Edible mushrooms & propagation

[Www.perma-fun-k.com](http://www.perma-fun-k.com)
perma_fun_Kinfo@yahoo.com



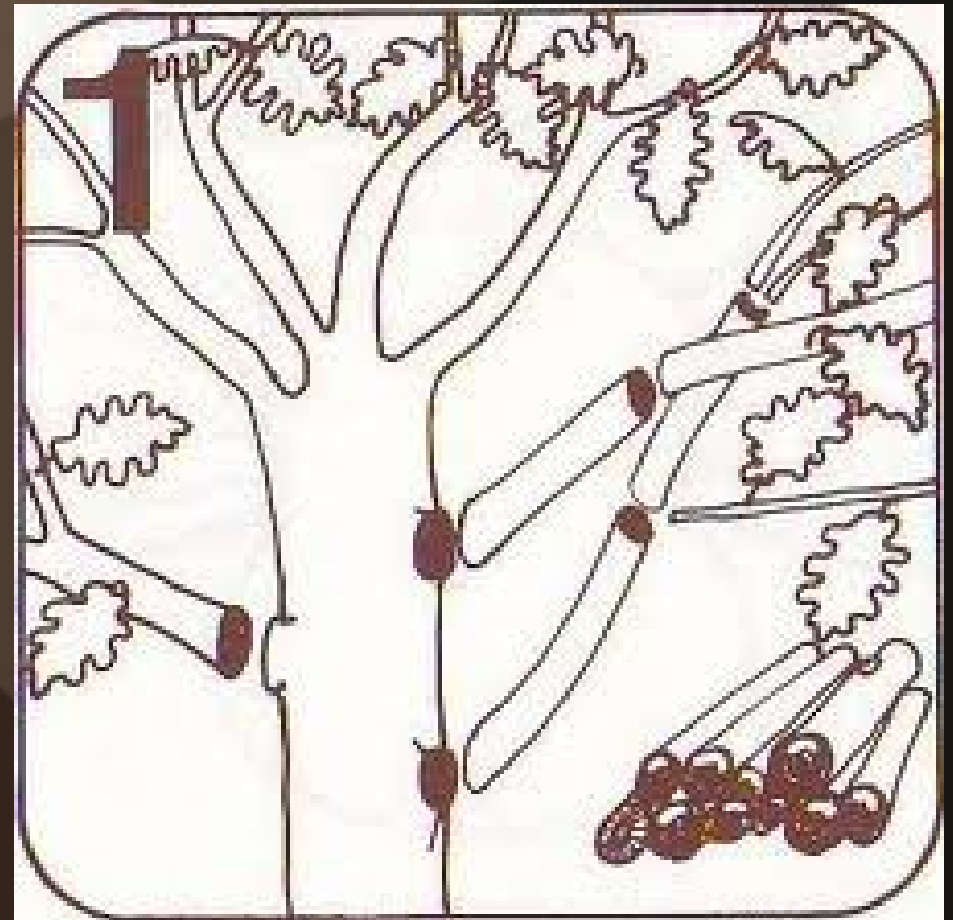
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Before anything

- If you buy plugs from through internet make sure they rest in a dark place for a week before inoculating.
- If in the fridge before they need to be out in natural temperature a day before inoculation.
- Spawn are ready to use once u see each dowel filled with whitish, fuzzy material round them.
- If stored for a while like a month they need to be in dry dark space. If stored for longer they need to go into the fridge.
- You can store them up to 6 months in fridge.

SELECTING YOUR WOOD


- LOGS can be cut any time through out the year.
- BEST RESULTS if cut in late winter or early spring before sprouts. Highest content on sap which is what the mushroom mycelium feeds from (sugar) during colonization period.
- HIGHER MOISTURE & SAP CONTENT= more food for the fungi.
- HARDWOOD SPECIES-
deciduous trees
- SOFTWOOD SPECIES-
coniferous softwoods.



- Look into what kind of mushroom you are inoculating in order to know their needs and the better wood to use.
- Each mushroom species has a difficulty for cultivating that is rated from 1 to 5 stars.



Hardwood species

REISHI 4 difficulty 	LING CHI	70/80F	GANODERMA LUCIDUM	FRUITING SEASON: SUMMER TO EARLY FALL
SMOOTH, FLAT SHELF LIKE	INMUNE SUPPORT PROPERTIES USED IN TEAS NOT FOR EATING. (woody meat)	OAK MAPLE ALDER ELM SWEETGUM MAGNOLIA LOCUST MULBERRY	HORIZONTAL OR VERTICAL PARTIALLY BURRIED AFTER INCUBATION.	LENTH MATURIN TIME: 2/3 MONTHS


Hardwood species

MAITAKE OR HEN OF THE WOODS 5 difficulty	GRIFOLA FRONDOSA 	55/70F	POWERFUL INMUNE SUPPORTER & GOURMET EDIBLE	EASTERN NORTH AMERICA
FRUITING NEAR STUMP OR SOIL INTERFACE	IF IN LOGS: HORIZONTAL & PARTIALLY BURIED AFTER INOCULATION.	OAK ELM HONEY LOCUST	MATURING TIME: 2/3 MONTHS FOR MATURING.	FRUITING IN DA FALL


Hardwood species

<p>LIONS MANE/ BEARDE D TOOTH 3 difficulty</p>	<p>HERICIUM ERINACEUS</p> 	<p>60/75F</p>	<p>HARDWOODS ACROOS NOTH AMERICA</p>	<p>CASCADING WHITE ICICLE LIKE SPINES</p>
<p>SOME OF BEST TASTING EDIBLES</p>	<p>VERTICAL PARTIALLY BURRIED AFTER INCUBATION</p>	<p>OAK BEECH MAPLE ELM CHESTNUT</p>	<p>MATURING TIME: 2 WEEKS TO A MONTH</p>	<p>FRUITING IN THE FALL</p>

Hardwood species

<p>SHIITAKE OR BLACK FOREST MUSHROOM 1 difficulty</p>	<p>LENTINULA EDODES</p> 	<p>50/80F</p>	<p>CULINARY AND HEALTH BENEFITS</p>	<p>MOST SUBSTANCIAL FRUITING FROM 6 MONTHS TO 1 OR 2 YEARS</p>
	<p>VERTICAL,</p>	<p>OAK SWEETGUM ASH CHETNUT HORNBEAM IRONWOOD MAPLE HCKORY ALDER BEECH BIRCH</p>	<p>MATURING TIME: 2 TO 3 WEEKS TO FULLY MATURE</p>	<p>FRUITING IN DA SPRING & FALL</p>


Hardwood species

<p>PEARL OYSTER/ TREE OYSTER 1 difficulty</p>	<p>Pleurotus ostreatus</p> 	<p>50/70F</p>	<p>CULINARY</p>	<p>MOST COMMON EDIBLE ON DA HARDWOODS.</p>
<p>EASY TO GROW AND QUICK TO FRUIT.</p>	<p>HORIZONTAL</p>	<p>ALDER MAPLE OAK BIRCH BEECH ASH SWEETGUM COTTONWOOD D POPLAR WILLOW ASPEN</p>	<p>MATURING TIME: SOMETIMES ONE WEEK</p>	<p>FRUITING IN THE SPRING & FALL</p>

Hardwood species

TURKEY TAIL 1 difficulty	TRAMETES VERSICOLOR 	65/75F	MEDICINAL MUSHROOM MADE IN TEA	NORTH AMERICA & ROUND THE GLOBE
ADAPTABLE (VERSICOLO UR)	HORIZONTAL OR VERTICAL	OAK ALDER POPLAR ASPEN ELM IRONWOOD EUCALYPTUS	MATURING TIME: 45 TO 70 DAYS	FRUITING IN THE SPRING & FALL

SOFT WOOD/CONIFER species

PHOENIX FIR OYSTER 1 difficulty	PLEUROTUS SAJOR-CAJU 	65/75F	LARGE WHITE BEIGE EDIBLE MUSHROOMS	ENJOYS WARM CLIMATES
THRIVES IN CONIFERS	VERTICAL	SPRUCE HERMLOCK DOUGALS FIR PINYON PINE PONDEROSA PINE	MATURING TIME: LESS THAN ONE WEEK	FRUITING IN THE SPRING & FALL

SOFT WOOD/CONIFER species

<p>CHICKEN OF THE WOODS 3 difficulty</p>	<p>LAETIPORUS CONIFERICOLA A</p> 	<p>60/80F</p>	<p>PACIFIC NORTHWEST OF THE USA</p>	<p>MULTI LAYERED SELF LIKE ORANGE MYCELIUM</p>
<p>THRIVES IN CONIFERS</p>	<p>FRESHLY CUT STUMPS VERTICALLY ORIENTATED PARTIALLY BURRIED 8/12 INCES DIAMETER LOGS</p>	<p>DOUGLAS FIR HEMLOCK SPRUCE</p>	<p>MATURING TIME: DEPENDING AS MUSHROOM AGE. LESS AS IT GETS OLDER. EAT YOUNGEST FOR BETTER TASTE</p>	<p>FRUITING : LATE SUMMER TO EARLY FALL. AS THEY MATURE IN THE FALL THEY BECOME WOODY AND SLIMY APPEARANCE</p>

- LOGS WITH DAMAGED BARK OR SHED BARK SHOULD BE AVOID.
- LOGS & STUMPS need to be clean, healthy and free from other fungi. MOSS OR LICHENS are ok.
- REDWOOD, CEDAR & CYPRESS: not recommended for their anti-fungal compound properties- inhibiting the growth of fungi on them.
- BARK INTACT= water retention & protection from parasites & competition other native fungi.

- IDEAL LOG SIZE: 3 to 4 feet length and 4 TO 8 inches diameter.
- CUT LOGS FROM HEALTHY LIVING TREES.
- LARGER DIAMETER= longer colonizer time.
- KEEP LOGS OFF THE GROUND.
- Dont store your inoculated logs for longer than 6 months so they dont get infected with native organisms and smaller water retention properties.
- Logs after cut need to sit for 2 weeks and less than 6 months before inoculation.
- STUMP needs to be mostly shaded/no sunny conditions

EQUIPMENT NEEDED FOR PLUGGIN PROCESS

- HIGH SPEED DRILL
- 5/16” DRILL BIT (diameter hole)
- RUBBER Mallet
- BEESWAX/SOY BASED WAX
- CAMPING STOVE (WAX MELTING)
- CAN/CONTAINER FOR WAX
- SMALL 1 INCH PAINT BRUSH to apply wax

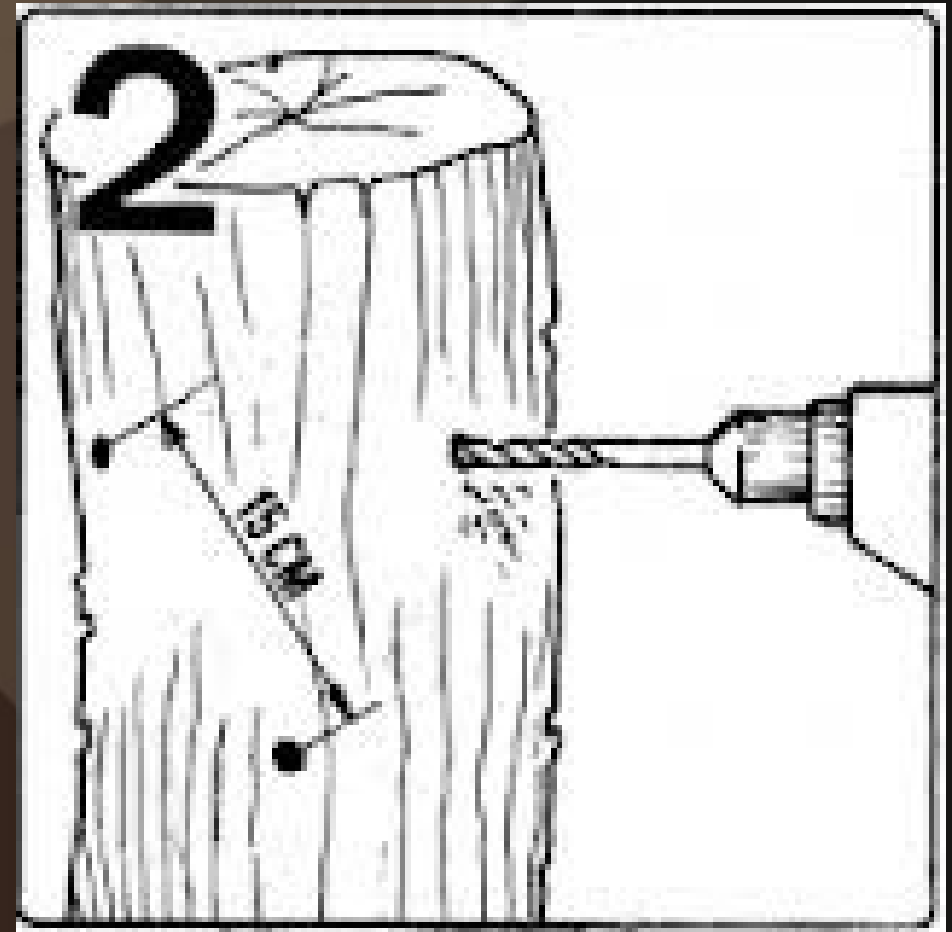
PROCEDURE

- BEST INOCULATION TIMES, depending on your location. Best when weather is not extreme
- Mid spring after freezing times or fall 50 days before the first frost.
- Plug logs all year long if protected area (garage, greenhouse, porch, etc..)
- LOGS NEED MOISTURE first INOCULATION PROCESS. Maybe set up sprinklers above them.

STEPS TO FOLLOW

1ST STEP:

- HOLES no more than 4” apart, evenly spaced in a checkerboard pattern around the log. 45 Holes per 3 or 4 feet log approx.
- IF INOCULATING STUMPS holes drilled in the area BETWEEN BARK AND HEARTWOOD (SAP WOOD) = 30/50 HOLES PER STUMP.



STEPS TO FOLLOW

2ND STEP:

- Open bag of plugs with clean hands and place it on your first hole with rubber mallet.
- The top of the dowel should be flush with the top of the bark on the log.
- Dont leave any hole empty.



STEPS TO FOLLOW

3RD STEP:

- ONCE ALL HOLES ARE FILLED seal the log or stump with a food grade wax.
- Waxing will help retain moisture and prevent invasion of parasites and competitive fungi.
- Melt your wax on a metal container applying heat. Allow wax to be completely covering the pug and hole with the brush.



STEPS TO FOLLOW

4TH STEP:

- After covering all the holes with wax also deep the log into the wax container and see both ends. If sealing a stump is recommended to seal the whole face of the stump with wax.
- Seal any exposed wood.
- If you have empty holes seal those too.
- DONT cover the entire log. Moisture still needs to come into the log through the bark.

CARING FOR YOUR LOGS

-INCUBATION-

- Once sealed, logs need to be off the ground on pallets, cinder logs or any other platform. Never in direct contact with soil.
- Stack them in criss cross piles to help conserve moisture and space.
- Locate in a moist, shady area under dense forest canopy or shade cloth.
- Keep logs inoculated with diff species separate so they dont cross compete.
- WATER ½ TIMES EVERY SECOND WEEK 5/10m until freezing temperatures or big rain come.
- If in arid lands, water every week twice.



INCUBATION

- Moisture can be helped covering the logs with shade cloth or burlap. **NEVER PLASTIC.**
- 6/12 months are needed for mycelium to colonize the logs.
- Length of time depends on species, wood, climate etc..
- Smaller diameter logs will colonize easier and faster than bigger diameter logs.

- After being full colonized, EACH MUSHROOM has a different time for fruiting and temperature requirement.
- If they are ready to fruit but they aren't fruiting yet you can submerge the logs in a bath tap full with water for 24hrs. Distilled water only.
- Don't soak the logs if little mushrooms already forming (primodia).
- If they were inoculated in a naturally wet area they will probably fruit on their own.
- Depending on the species they will be partially buried on sand or gravel. Not in soil which will make them rot.
- HORIZONTAL= 1/3 LOG OUTSIDE
- VERTICAL= 1/3 OR 2/3 IN SAND OR GRAVEL POT.
- AFTER BURYING THEM WATER 2 TIMES A DAY IF NOT HAVING RAINFALL.
- PRIMODIA WILL FORM AFTER 2 WEEKS OF INICIATION.

INICIATING YOUR LOGS

- Depending on diameter and length of logs and wood and species they will be ready to fruit withing at least 6 months
- The longer you wait (force fruit) the greater the level of colonization.
- Preferably wait 9/12 months... or denser if you used a dense wood like oak.
- If you see a mottling pattern on the face of the log covering at least 65% of it.. its sufficiently colonized.

bibliography

- Mushroom cultivator
- Mycellium running
- <http://www.fungi.com/shop/mushroom-kits.html>



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