

Safety & Warnings

Warning: This kit contains materials that may be harmful if used incorrectly. Please read all instructions before beginning. Failure to follow these instructions and warnings could result in serious consequences.

SAFETY

A Material Safety Data Sheet for this product is available upon request by contacting giy@ecovatedesign.com.

Not for human or animal consumption.

Not to be used by children under age 13 except under adult supervision.

This kit contains small parts, including agricultural particles, which may be harmful if ingested or inhaled, or otherwise misused.

The GIY process requires the addition of flour, and may not be advisable for those with severe gluten allergies. As a substitute you may use multidextrin.

The material can be dusty when dry. Material may irritate airways if directly inhaled. In case of inhalation, remove the person to fresh air. If irritation persists, contact a physician.

Do not touch eyes while handling the material.

This material is not rated or recommended for structural applications.

STORAGE & DISPOSAL

Dehydrated material is shelf stable for up to 10 weeks from the date on your bag in a cool, dry place.

Rehydrated material can be stored in the fridge for 2-3 weeks after the initial rehydration stage.

Excess raw material and finished Mushroom products are environmentally safe and can be safely disposed of in the trash, composting systems, or in gardens.

To compost the material, break it into small pieces and mix with soil or other composting materials. Given the right amount of moisture and soil organisms, the material will break down in a few months.

FUNGAL BIOLOGY

Common household mold species may contaminate the material if the workspace is not sufficiently cleaned before use. Should mold growth occur, dispose of contaminated material immediately and clean work surfaces and materials with dish soap and water.

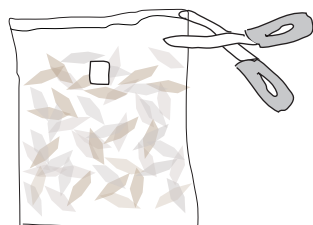
Gloves are recommended to protect the Mushroom Materials from competing organisms and to keep hands clean, but the material is safe if it comes in direct contact with skin. Do not touch eyes while handling the material.

The kit is not intended to produce mushrooms, but mushroom growth can occur if the growth of the material is not completely stopped during a final drying step. Mushrooms can produce aerial spores, which are a potential allergen for those sensitive to fungi or airborne particulates. Ecovative advises against growing the material to this stage.

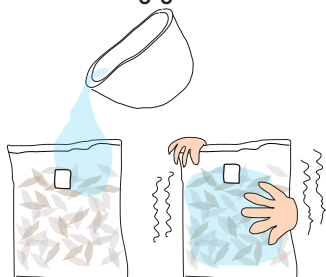
Reactivating Dry Material

MAKE TIME: 20 minutes

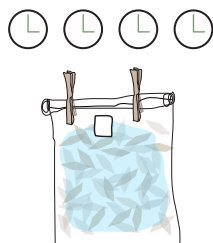
GROW TIME: 4-5 days



1 Open the bag of dry material by cutting the top off along the sealed line. Do not cut below the white filter patch, this is necessary for the material to breathe during growth.



3 Pour the flour and water mixture directly into the bag of dry mushroom material. Shake vigorously for 1 minute. When there are no longer any dry patches of material or clumps of flour, the material is ready to grow!



5 In a clean area (at room temperature and not in direct sunlight), allow the bag to grow out for 3-4 days.



2 In a separate container, add 4 tablespoons (20g) of flour and 3 cups (700 ml) of tap water. Stir thoroughly for 1 minute.



4 Fold the top of the bag over several times and secure shut with tape or a clip. (Do not fold over the white filter patch. This will prevent respiration.)



6 When the bag appears fully white, the material is ready to use! Refer to **Let's Grow Something** instructions. If you do not plan on using the material right away, place it in the refrigerator for up to 2 weeks.

You will need:

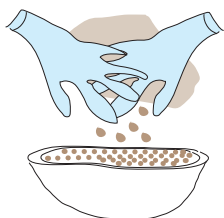


Let's Grow Something!

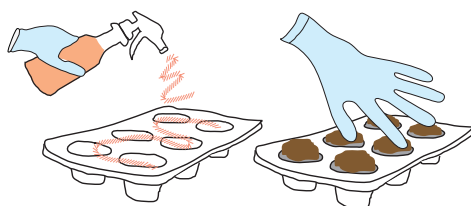
MAKE TIME: 1-2+ hours (depending on complexity of project)
GROW TIME: 5-6 days



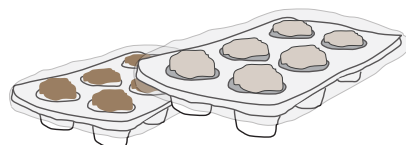
1 With gloves on, sanitize your gloves, working area, and mixing bowl with a small amount of rubbing alcohol. (Spray bottles work nicely.)



3 Break up material by hand until particles are loose. (Note: material will lose most of its white coloring)



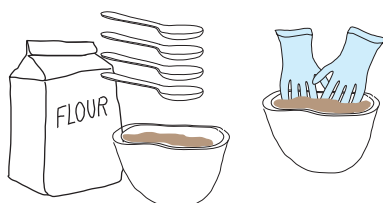
5 Sanitize your growing container/s with rubbing alcohol and allow to dry. Pack cavity/s with loose material.



7 In a clean area (at room temperature and not in direct sunlight), let material grow until fully white again (about 5-6 days).



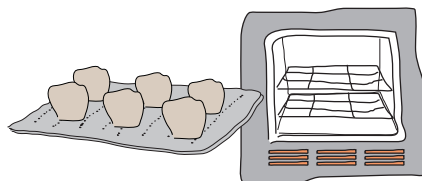
2 Remove mushroom material from bag and place in mixing bowl or clean container large enough for mixing.



4 Add 4 tablespoons (20g) of flour and mix thoroughly for 1 minute.



6 Cover top surface of cavity with plastic wrap and secure with tape to keep material from drying out. Poke holes in wrap 1 inch (2.54 cm) apart with a sharp object to allow for respiration.



8 Carefully remove your project from its cavity. Weigh part/s and place on a baking sheet. Bake at 200° F (93° C). Parts are dry when they weigh about 35% of their original weight (check every half hour). This will prevent additional growth.

You will need:



gloves



wet GIY material



tape



flour



scale



rubbing alcohol



baking sheet



mixing bowl



sharp object
(for making holes)



spray bottle



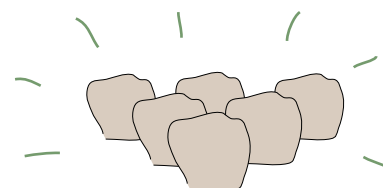
plastic wrap



conventional oven



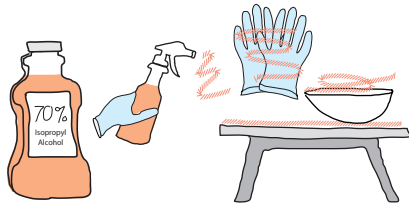
growing container/s
(see *Form Tips* if applicable)



9 Remove from oven and allow to cool. Your project is now complete!

Grow a Planter

MAKE TIME: 30 minutes
GROW TIME: 4-5 days



1 With gloves on, sanitize your gloves, working area, and mixing bowl with a small amount of rubbing alcohol. (Spray bottles work nicely.)



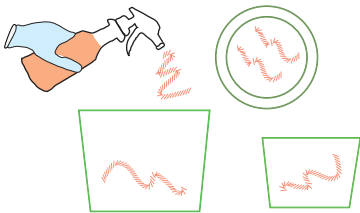
2 Remove mushroom material from bag and place in mixing bowl or clean container large enough for mixing.



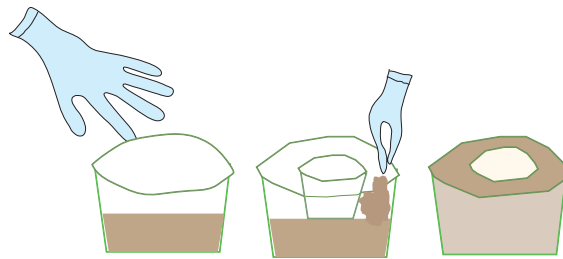
3 Break up material by hand until particles are loose. (Note: material will lose most of its white coloring during this stage.)



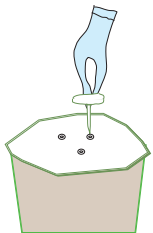
4 Add 4 tablespoons (20g) of flour and mix thoroughly for 1 minute.



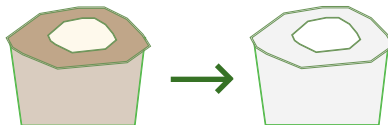
5 Sanitize your growing cups and lid with rubbing alcohol and allow to dry.



6 Pack bottom third of large cup with loose material. Place small cup in center of large cup on top of material. Pack loose material around the small cup. Fill to top rim of small cup. It's okay if material get inside the small cup.



7 Snap lid closed on top of large cup. Use a push pin to poke 3-5 holes in the top of the lid above the small cup.



8 Allow planter to grow in its form for 4-5 days at room temperature and out of direct sunlight.

You will need:



gloves



wet GIY material



flour



mixing bowl



rubbing alcohol



spray bottle



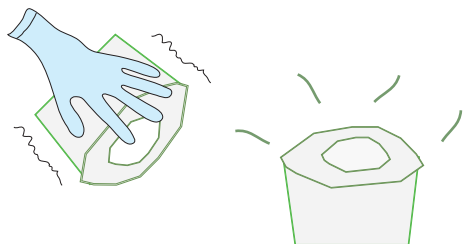
sharp object
(for making holes)



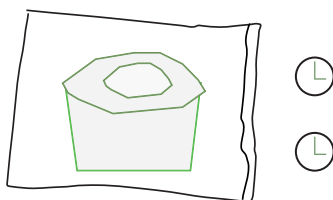
growing cups

Eject and Dry Planter

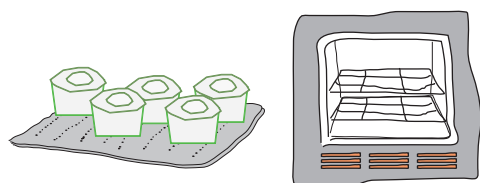
ACTIVE TIME: 20 minutes
 DRY TIME: 3-4 hours



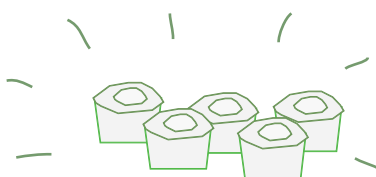
1 With gloves on, gently remove the planter from the growing cup.



1A Optional Overgrowth Step
 Place your planter in a plastic bag so that no plastic is touching the top or sides of the planter. Let the planter grow in the bag for an additional 1-2 days.



2 Weigh planter and place on a baking sheet. Bake at 200F (93C). Check planter every half hour. Planters are dry when they weigh about 35% of their original weight.



3 Remove planters from oven and allow to cool. They are ready for soil and seeds!

You will need:



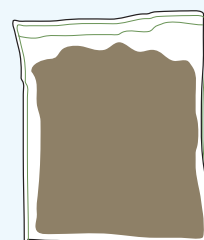
baking sheet



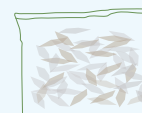
conventional oven



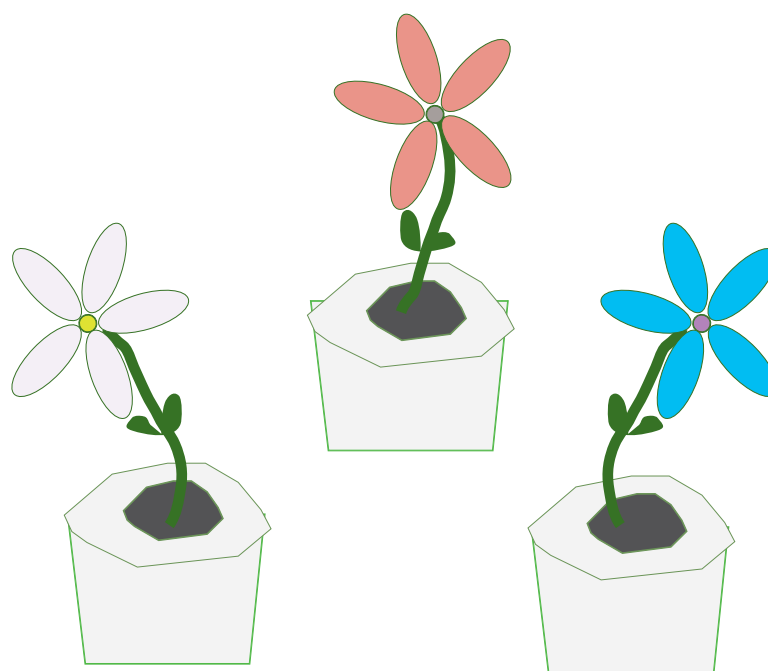
scale

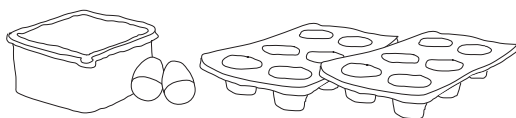


soil



seeds





Forming Tips

A FEW WORDS OF ADVICE ON GROWING CONTAINERS...

GIY Mushroom® Materials need Forms(a growing container) to grow into their final shape. Forms also help to lock in moisture, which is important for strong fungal growth. There are lots of options for forms and we encourage you to explore and share your ideas with other GIY fans on the GIY forum at community.ecovatedesign.com.

WHAT MAKES A GOOD TOOL?

- It's waterproof
- It's non-porous and smooth
- It gives you the desired feature resolution
- It can eject your part/s easily
- It can be reused (optional and ideal!)

OPTIONS FOR TOOLING YOUR DESIGNS:

1. Found tooling - things like bowls, cake pans, sand castle toys, candy molds... whatever you can find!
2. Custom tooling - making small 'proof of concept' designs from carved or applied wax, or 3D printed designs, or small scale thermoforming (your local MakerSpace may have one)
3. High volume tooling - if you're making a lot of shapes, there are commercial thermoformers available to make larger quantities of tools (this is what we do at Ecovative)

OTHER TIPS & TRICKS:

1. Use draft angles of 3° and chamfered edges where possible
2. No 'negative drafts' or 'undercuts'
3. Avoid features smaller than 1/4" wide or tall. Bold geometry and textures will be easier to fill with material and will be more visible when finished.
4. Plastic wrap is a great liner for porous materials, and can help eject your part
5. Plastic wrap is also a good 'lid' to keep the moisture sealed in once you've filled the cavity
6. For more complex shapes, use multi-part tools
7. Grow INTO the tool by using materials like cardboard or any natural fiber-based material, but this may make your project more susceptible to contamination!
8. Skip the tool entirely and add a few tablespoons of a natural gelling agent such as psyllium husk : water (1:4) mixture - it makes it behave like a chunky clay!

Materials that DO need a plastic coating

- wood
- clay
- plaster

Try using kitchen plastic wrap, painting on a silicone coating, or sealing with waterproof coating.

When coating any materials, look for a waterproof, non-stick, non-porous solution.

Materials that DON'T need a plastic coating

- Wax
- molding silicone or epoxies
- Plastic (recyclable PET works best)

Try thermoforming, 3D printing, or injection molding for plastics. Wax can be carved out or painted into a final shape.

As always, use caution and read any safety instructions when working with plastics and castable materials.