King Stropharia Cultivation *(stropharia rugoso-annulata)*

Also known as the Garden Giant or Wine Capped Stropharia, a good mushroom for beginners because it is very easy to correctly identify. It's also a great mushroom for gardeners and permaculturists because it has the ability to unlock nutrients from mulch materials which will greatly enhance soil fertility.

King Stropharia has a rich 'mushroomy' flavour with undertones of red wine and potatoes, and the stem has a stringy texture similar to asparagus. This large meaty mushroom can be sliced into steaks and coated with a marinade of soy sauce and herbs – perfect on a summer barbeque. Alternatively, the caps and stems are sautéed in butter or margarine and served with eggs or mashed potatoes.

King Stropharia is native to Southern Europe, but it is a hardy and adaptable mushroom species which is grown all over the world. A ground dwelling mushroom which thrives in hardwood wood-chip, sawdust, cereal straw, animal and poultry bedding, and other garden mulch materials. It is know as the Garden Giant because the mushrooms can grow to quite a size – sometimes bigger than a dinner plate when mature.

King Stropharia is commonly cultivated in raised, or dug-in beds, which are lined with cardboard and then layered with a mixture of spawn and wood-based materials. It can also be grown on whole bales of cereal straw. **1kg of Sawdust Spawn is required per 1 metre square bed filled to a depth of around 15 cm, or is sufficient for 1 small bale of straw.**

Suitable Raw Materials

Woodchip and Sawdust: source fresh hardwood woodchip/sawdust (the fresher the better) which is less than 3 months old. There can be some softwood mixed in but make sure it's less than 50%. Tree Surgeons will drop off woodchip for free and local councils can often can supply it as well. A 15kg sack (50 litres) will cover 1 m square.

Cereal Straw: wheat, barley, and hemp straw are suitable. For bed cultivation straw must chopped into smaller lengths of 5 to 10 cm to reduce its volume down otherwise yields will be poor. It can be chopped down using a garden shredder or laid out and chopped using a lawn mower. Whole bales can also be used.

Animal Manure/Bedding: well rotted stable manure and poultry bedding can be used and is best mixed 50/50 with woodchip.

Garden Waste: grass clippings twigs and branches can be mixed in with woodchip and chopped straw but no more than 25% by volume.

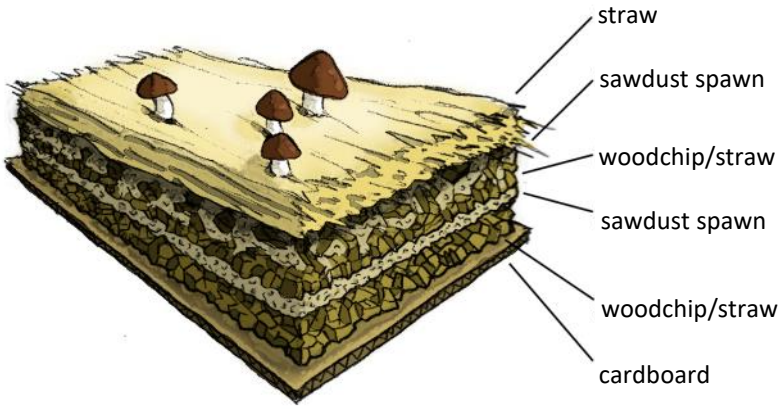
Locating the Bed

Beds are located in shaded well draining areas and spawned after the frosts end in Spring and before the first frosts of Winter. They can be raised like vegetable beds, or dug in. They can also be located under mature deciduous trees in a doughnut shape and also under large leaved vegetables such as courgettes or kale for example.

Beds spawned in Spring have a very good chance of producing in Summer that year if the mycelium is well established, otherwise it will produce the first crop the following year.

Making the Bed

Beds are constructed by layering the material like a lasagne. Cardboard is used to line the bed which help suppress weeds, protect it from pests such as insects slugs and snails, and also competing soil-borne fungi. Each layer is around 5 cm deep which will prevent the material composting too quickly to a maximum depth of 20 cm.



1) Measure out the site and line with flattened out cardboard boxes. Water the cardboard until it is fully saturated. Break-up the sawdust spawn while it is still in the bag. Some lumps and clumps will be fine to distribute over the cardboard. Using about 1/4 of the spawn to create small islands with the aim of encouraging the mycelium to branch-out and join-up to form a network.

2) Add a 5 cm (2") layer of fresh sawdust/woodchip or chopped straw. Distribute another 1/4 of sawdust spawn over the layer and rake the layer level even, packing down to remove air pockets. Water the bed lightly, taking care to moisten—but **not** saturate.

3) Cover with another layer of cardboard which has been torn into smaller pieces which will allow water to pass through to the layer below. Water lightly, then make spawn islands as above. Repeat Step 2 and Step 3 until the bed is 15 cm to 20 cm (6-8") deep.

4) Apply a *casing layer* to retain water, provide additional shade and protect from frost. Cover the bed with a 3 cm to 6 cm (2-3") deep layer of straw (doesn't have to be chopped), leaf litter, compost, bark chippings or a mixture of these materials. Protect from pests, such as rabbits, birds and rodents with chicken-wire, or a hoop frame and shade cloth. Use barriers or traps to protect against slugs and snails.

Straw Bale Method

Soak the bale overnight in clean water and then drain. Site in a shaded sheltered area raised off the ground on a pallet or blocks. Break-up the sawdust spawn and push handful sized quantities of spawn towards the centre of bale at various points round the sides and top.

Spawn Run

Water lightly every 2-3 days for the next month and thereafter—unless the bed naturally receives adequate rainfall. **Don't over water—the bed should go through a wet and then a drying period before it is watered again.**

After a couple of weeks has passed check to see if the mycelium has begun to colonise its new home by observing white mycelial growth radiating out from the sawdust onto the woodchip/straw. After 3-6 months mycelium should be clearly visible running throughout the wood-chip or straw. It may have also spread out into the surrounding soil.


Wood-chip after 6 months of Spawning

When the bed is *fully colonised* with mycelium, it is ready to begin fruiting **or** it can be used as a 'mother bed' to spawn more beds. Remove no more that two thirds of the colonised wood-chip/straw to inoculate and mix into other beds (a ratio of 1 bucket of spawned material to 20 buckets of new material works well). Replace the material that has been transferred with new material water in and mix through. In the summer you can also take a bucketful of mycelium and spread it under garden vegetables, like tomatoes and courgettes, forming donut shapes around the base of the plants. The leaf coverage and moisture is a perfect environment for Stropharia to thrive and it also boosts the plants' nutrient uptake.

Fruiting

If the bed was made in Spring and fully colonised with mycelium by mid summer, then there is a very good chance it will produce its first crop (or *flush*) in late Summer or Early Autumn in response to heavy rainfall. If the initial bed was used as a mother bed then it will probably begin to produce the next year along with the daughter beds.

Stropharia has a wide fruiting temperature from 10 deg.C. to 20 deg.C. so it can fruit in Summer to Autumn and also in Spring.

Producing bi-annually, flushes are generally 2 to 6 weeks apart. Primordia form in small groups after a period of sustained and heavy rainfall, so check your beds or straw bale a few days after for primordia *(as pictured right)*.

Mushrooms mature up to 20 cm (9”) in diameter. They are best cropped before the caps have fully flattened out and are still rounded with rolled-under rims, as *pictured above*. This usually takes 5-7 days depending upon the temperature. To crop, simply twist and pull. If the mushrooms are left to fully mature and flatten out there will be a lot of insect larvae living in them. Fully mature Stropharia are not very appetising as a lot of the flavour and texture is lost by this point.

King Stropharia easily self propagates as the stem butts can be used to spawn new beds. Cut the base of the stem off as pictured and then bury into new woodchip/straw distributed evenly around the bed. The mycelium will spread from the stem and colonise the new bed.

In the Longer Term

Beds can produce for up to 3 years and new material should be added each year to re-invigorate the mycelium and prolong the life of the bed. Fresh material should be added in Spring after the first Summer/Autumn season. Simply mix in new woodchip/straw thoroughly, water in, and replace the casing layer.

The best visual indication of the health of the bed is the number of earthworms present. When they begin to move into the bed, they feed upon the mycelium and accelerate the decomposition. A large number of earthworms indicate that the wood-chip/straw has started to compost and productivity will soon decline so add fresh material to revitalise the bed.

Feedback

We’d love to hear about your experience growing King Stropharia. Send photos and comments to: info@gourmetmushrooms.co.uk or visit our website.