



**Hort
Innovation**
Strategic levy investment

**MUSHROOM
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AMGA
Australian Mushroom Growers Assoc.

The Mighty Mushie



PIEFA Food & Fibre



CARD GAME



PIEFA Food & Fibre



CARD GAME



Instructions for the

The Mighty Mushie

PIEFA Food & Fibre Card Game



**Scan the QR code to learn
how to use these cards to
sequence the supply chain
of the product.**



Wheat Straw



› CONSIDERATIONS:

- Straw refers to the stalk of the plant.
- Straw is a waste product from the production of wheat.
- Straw is one of the starting materials used in the production of compost that is suitable for the growth of mushrooms.



Chicken Manure



› CONSIDERATIONS:

- Bedding material from chicken farms is rich in chicken manure.
- The bedding material is a waste product from chicken farming.
- Chicken manure is high in Nitrogen.
- Nitrogen is required for the growth of mushrooms.



Phase I Composting

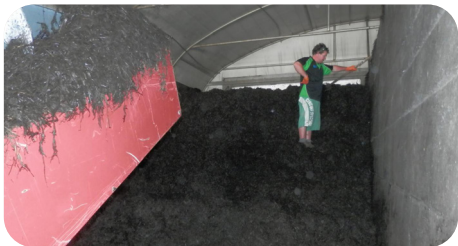


› CONSIDERATIONS:

- Wheat straw is wetted first, then mixed with gypsum and chicken manure.
- Straw is turned and aerated to ensure aerobic decomposition.
- Process can take 12-21 days and compost can reach 83 degrees Celsius.
- Compost is rich in ammonia.



Phase II Composting



➤ CONSIDERATIONS:

- Compost is pasteurised at 60 degrees Celsius to remove unwanted fungi, nematodes, and insects.
- Heat loving microbes convert ammonia into nutrients that the fungi will use to grow.
- Conditions are highly controlled, compost is aerated and finally temperature is lowered to 28 degrees Celsius.



Phase III Composting



› CONSIDERATIONS:

- Pasteurised compost is inoculated with the fungi mycelium.
- The grain which has been used as a growth medium for the mycelium is spread over and turned into the compost.
- Mycelium grow through the compost in a 'spawn run'.



Casing



➤ CONSIDERATIONS:

- The compost supplies all the nutrients that the mycelium needs to grow throughout the substrate.
- The compost is covered in a casing layer, typically peat moss mixed with lime.
- Casing holds water and provides structure for the developing mushrooms.



Pinning



➤ CONSIDERATIONS:

- Mycelium grows through the casing layers and forms rhizomorphs.
- These develop into very small mushroom 'pins' or primordia.
- Watering of mushroom beds is stopped or reduced when pinning starts.
- No external ventilation until mycelium appears on the surface.



Harvest



› CONSIDERATIONS:

- Harvesting starts 15 - 18 days after beds are cased.
- CO₂ concentration is lowered to less than 0.15% by ventilation of room.
- Relatively high humidity and cool temperatures simulate natural mushroom growing conditions.
- A harvest is called a 'flush'.
- Beds can provide two or three 'flushes'.



Spent Mushroom Compost



➤ CONSIDERATIONS:

- Once all mushrooms are harvested, compost is heated to 65 - 70 degrees Celsius for 8 - 24 hours for sterilisation.
- Spent compost is high in organic matter.
- Spent compost can be used by garden facilities, nurseries, and individuals to condition and improve soil.



Processing



➤ CONSIDERATIONS:

- Mushrooms may be processed in one of three ways:
 - a. Whole mushrooms weighed, packed, and wrapped for retail.
 - b. Sliced mushrooms weighed, packed, and wrapped for retail.
 - c. Bulk mushrooms for wholesale market.



Storage



➤ CONSIDERATIONS:

- Mushrooms may be stored in refrigerated facilities where they are graded and quality checked.
- Mushrooms are stored at 2-3 degrees Celsius before they leave the farm, prior to being shipped to retail facilities.



Transportation



➤ CONSIDERATIONS:

- Mushrooms are best kept in cool conditions.
- Refrigerated trucks are used to transport mushrooms from the mushroom growers to storage and retail facilities across Australia.
- Mushrooms have a relatively short shelf life, so effective transportation and refrigeration is key.



Retail



➤ CONSIDERATIONS:

- Mushrooms can be purchased year-round. 97% of mushrooms are consumed by the domestic market.
- The average household consumes nearly 3kg of mushrooms a year.
- One of Australia's most valuable food commodities.



Compost Producer

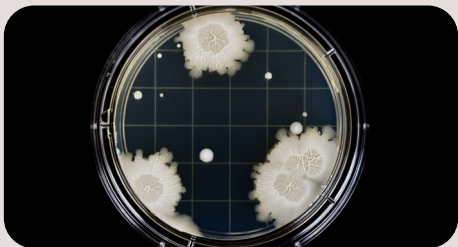


➤ CONSIDERATIONS:

- Compost producers turn waste raw materials from agriculture (wheat straw and manure) into nutrient rich compost.
- Compost may be spawned (Phase II) or spawn runned (Phase III) and then sold to mushroom growers.
- Some mushroom growers also produce their own compost on site.



Spawn Maker



➤ CONSIDERATIONS:

- Genetically selected strains of fungi are cultured in a laboratory.
- The cultures are grown on agar or in a liquid culture.
- The fungi are transferred to sterilised rye, sorghum or millet to grow.
- The 'spawned' grain is sold to mushroom compost producers.



Mushroom Producer



➤ CONSIDERATIONS:

- Producers grow mushrooms for profit.
- Producers manage and coordinate all farming operations related to growing mushrooms that are intended for specific markets.
- Producers are responsible for the marketing and selling as well.



Operations Logistics



➤ CONSIDERATIONS:

- Responsible for the day to day running of a mushroom farm.
- Monitors the production process from bedding of compost to spent compost sterilisation.
- Ensures internal conditions are monitored closely for optimal mushroom growth.



Mushroom Picker



➤ CONSIDERATIONS:

- Mushrooms are picked by hand.
- Harvesters carefully select mushrooms from growing beds.
- Due to the controlled growing conditions, mushrooms are grown year-round.
- Mushrooms are harvested 365 days a year.



Making Mushroom Compost



To view the video,
scan the QR code.

Or visit:

<https://youtu.be/A9VMJyXcrWc>



Growing & Picking



To view the video,
scan the QR code.

Or visit:

<https://youtu.be/CQuS8mXV0gE>



Packhouse & Distribution



To view the video,
scan the QR code.

Or visit:

https://youtu.be/rMiB9Ya_5dk



Six Steps to Mushroom Farming



To view the video,
scan the QR code.

Or visit:

[https://extension.psu.edu/
sixsteps-to-mushroom-farming](https://extension.psu.edu/sixsteps-to-mushroom-farming)