



CUT
FOLD

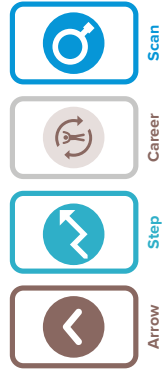
The Mighty Mushie

CARD GAME

By participating in an engaging, hands-on card game, students will learn the sequencing process of converting on-farm food and fibre products into a product suitable for sale.



Scan for full instructions
<https://www.piefa.com.au/resource/piefa-food-fibre-card-game/>



The Mighty Mushie

CARD GAME



PIEFA Food & Fibre

CARD GAME

The Mighty Mushie



CARD GAME

The Mighty Mushie



YEAR 5-10



YEAR 5-10

The Mighty Mushie

CARD GAME



12 x Arrow
game cards



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PIEFA Food & Fibre
CARD GAME

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12 x Arrow
game cards



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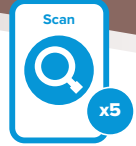
PIEFA Food & Fibre
CARD GAME

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PIEFA Food & Fibre
CARD GAME



5 x QR Code game cards



Hort Innovation Strategic levy investment | MUSHROOM FUND



The Mighty Mushie



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.



Six Steps to Mushroom Farming



To view the video, scan the QR code.

Or visit:

<https://extension.psu.edu/sixsteps-to-mushroom-farming>



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



13 x Step
game cards



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

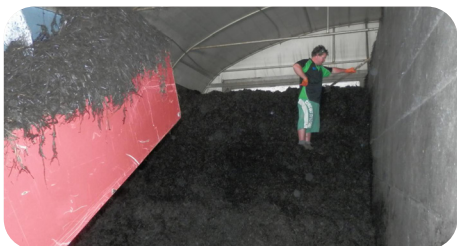


CONSIDERATIONS:

- 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.



13 x Step game cards



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.



5 x Career game cards



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

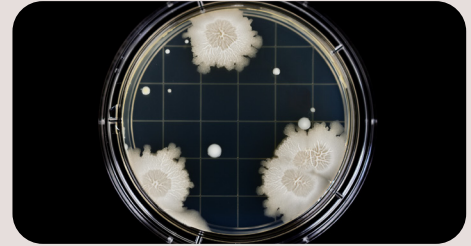


CONSIDERATIONS:

- 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.