Solar Crop Dryers

Crops are plants that we grow for food. Some countries, particularly in Sub-Saharan Africa have very fertile soil, which is ideal for growing crops. However, the wet and humid climate makes drying crops very difficult.

Image: Jcherlet, Public Domain, Wikimedia Commons

If the crops are not dried properly several problems can occur:

- Crops can decompose meaning they go to **waste**
- Mould can grow which can lead to poisonous **toxins**
- **People or animals can get sick** if they ingest the toxins
- The water, energy and fertilisers used to grow the crops are wasted

Solar crop dryers can be used instead of diesel powered dryers. They are much better for the environment, easier to maintain and there is no issue with relying on fuel supply.

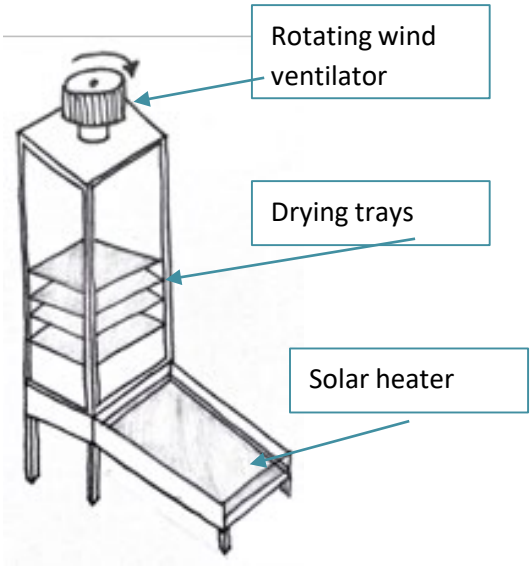

Image: Sophie Bentley

The cover is made of glass to let solar radiation (sunlight) pass through. A solar or wind powered fan is used to suck air into the dryer. A metal plate at the bottom can make the machine hotter and flow diverters or baffles can keep the air in the heater for longer which helps to dry the crops.

Minecraft challenge

Can you build your own **Solar Crop Dryer** in Minecraft?

Here are two challenges. You could start with standard and then move onto the advanced challenge, or choose one of them.

Standard challenge

Try building a model solar crop dryer using the information and images from this activity. Remember to use these materials:

- glass panes
- planks to act as flow diverters or baffles to keep the air in the heater for longer
- a metal plate on the bottom to heat the air
- crops to harvest and dry

Image: Daisy Bristow

Advanced challenge

- Make a working crop dryer using redstone
- These engineer-developed videos on YouTube might be helpful.

You can adapt the sugarcane harvester to grow kelp instead (hint - you'll need to grow the kelp in water) and dry the kelp in a furnace.

Not an official Minecraft resource. This project was supported by the Royal Academy of Engineering under the *Ingenious Awards* scheme. Developed with Dr Ceri Morris, UWE. For educational use only.