



Benefits

- Provide the community access to nutrient rich mangoes year-round in contrast to the current three month harvest season.
- One dried mango can contain 20% of the daily suggest value of Vitamin A and 3% of Vitamin C.
- One dried mango also provides 10% of the suggested daily value of Calcium and 6% of Iron.
- The extended availability of vitamins and minerals will be beneficial for childhood development and reducing malnourishment.
- Provide livelihood generation for families and communities.
- Improve the overall quality of life and help develop a sustainable community.



Team Fruit of Our Labor

Kenyan Sun Dried Mangoes
Michigan State University
College Of Engineering
ME 491 - International
Development

How to Make a Small Mango Drying Station



“When you spread it in the sun, it becomes dry.”

- Kenyan Proverb

Creating a Small Mango Drying Station

Step 1: Cut wood into sectioned pieces as specified below.

Quantity	Length (inches)
4	20
4	24
2	19.5
2	23.5
4	5



Base Assembly

Step 2: Drill two galvanized wood screws into each end of frame components connecting each piece flush with one another. Coat the frame in black paint.

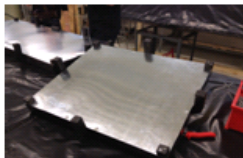


Step 3: Cut a 20"x24" metal sheet and attach it on the top surface of the base. The sheet should be flat and parallel to a flat surface. Use galvanized wood screws for attachment; attach a screw every 4 inches starting from the corner.

Step 4: Attach 1" thick square spacers on the top surface of the base frame (covered with the metal sheet) to corners of base frame with 2 galvanized screws per spacer.



Step 5: Attach a 5" base connector vertically to the base at the midpoint of each face.



Creating a Small Mango Drying Station, Continued

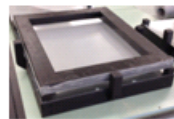
Tray Assembly

Step 6: Assemble the frame (tray) by connecting the components similarly to the base. Coat the wooden frame with black paint and wait until dry.

Step 7: Once dry, tightly wrap one side of the tray with insect netting/mesh and secure it to the wood with staples.



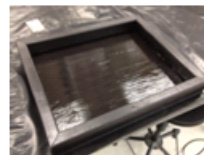
The tray should now be easily inserted and removed from the base within the base constraint.



Lid/Door Assembly

Step 9: Create a frame, similar to the base assembly.

Step 10: Attach a metal sheet to the inside face of the frame with the galvanized wood screws. Coat the wooden frame and outside facing sheet with black paint and allow it to dry.



Step 11: Attach Plexiglas to opposite side of the lid, securing it with wood screws.



Step 12: Attach hinges by inserting screws into to the fully assembled base and door 1.5 inches from leading edge.

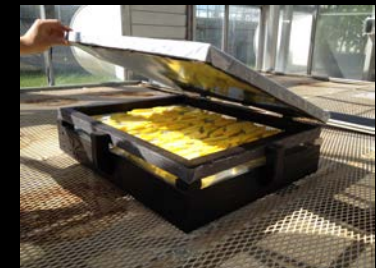


Drying the Mangoes

Step 1: Place the thinly sliced mangoes on the drying rack. It is important to leave some space between each slice, around 1/4".



Step 2: Once all the slices have been placed on the rack, place the rack in the dryer.



Step 3: Place the solar dryer where the device can receive direct sunlight.

Step 4: Check the mangoes every 4 hours for dryness during the day. In order to test the dryness of the slice, tear it open and if it springs apart, it is dry. If not, place back in dryer until the desired dryness is reached. The final, dried slice should look similar to the picture found below.

