



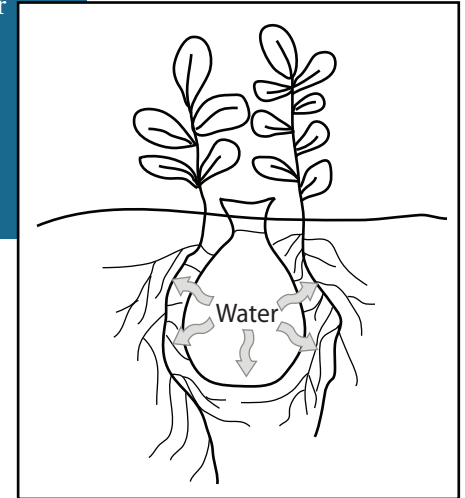
Olla

IRRIGATION

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The mission of Native Seeds/SEARCH (Southwestern Endangered Aridland Resources Clearing House) is to conserve, distribute, and document the adapted and diverse varieties of agricultural seeds, their wild relatives and the role these seeds play in cultures of the American Southwest and Northwest Mexico.

Use of low-fired, clay ceramic vessels (ollas) an ancient technique for the efficient irrigation of crops. The use of ollas (pronounced oh-yahs) can save the gardener time, energy, and water. Olla users report that their vegetable gardens produce more lush plants with higher productivity. Plants watered in this way do not undergo stress cycles due to water and can live and produce longer. Ollas can be a relatively inexpensive way to maximize your garden output while preventing water loss from over watering, and runoff.



HOW IT WORKS

A clay pot is buried with only the top opening above the soil surface and filled with water. The porous walls of the olla allow for water to dissipate into the soil as needed. Because the pores are small, the water does not freely flow out of the pot. A suction force is created by soil moisture tension as well as the plant roots. If soil is dry, the water inside the olla will release faster as the soil roots “pull” it out. Likewise, if there is a recent saturating rainfall the water in the olla will remain until the surrounding soil dries.

Olla irrigation promotes deep watering and dense root growth which facilitates more efficient nutrient and water uptake. Soil and roots do not go through extreme drying and wetting cycles which prevents bitter tasting greens and cracks developing in tomatoes or melons. The soil surface remains relatively dry in gardens with olla irrigation which can prevent the growth of weeds and help minimize some unwanted insect populations.

TIPS FOR USING OLLAS

- Bury olla leaving 1-2 inches remaining above the surface to prevent dirt and mulch from washing inside. Gently pack soil around olla.
- Water from ollas will reach about 10-18 inches from the center point of the olla.
- Place ollas every 2-3 feet in your garden for maximum impact. Larger ollas with a 2 gallon capacity can be placed up to 4 feet apart.
- Use of ollas in containers at least 18-24 inches in size. Containers should be made of glazed ceramic or plastic to retain water.
- Check the water level frequently and refill the olla as needed. The frequency depends upon the soil type, surrounding plant density, and weather. At times it may need refilling every 7 days or as frequently as every other day.
- Always keep a rock, plate, or other cover over the opening to minimize evapotranspiration and prevent mosquito breeding.
- Use ollas in slightly sandy or coarse textured soils. Soils with high clay content do not dissipate water well.
- If you have a very deep soil it is useful to place a saucer or drainage tray at the bottom of the hole where the olla is to be placed. This impedes water seepage bellow while promoting seepage outward.
- Plant seeds a few inches from the olla opening. Water the entire area and continue to surface water until the seeds germinate.
- Know where your ollas are buried. Outline the opening with rocks, a flag, or other methods to prevent someone from stepping on the olla.
- If you live in an area that is likely to experience a hard freeze, dig up your ollas each winter to prevent them from cracking underground.

TYPES OF OLLAS

There are several different types of ollas that can be purchased or easily made at home for use in your garden. When determining the type of olla consider the cost, your garden size, depth of plant roots, and desired longevity of the olla.

Hand-built clay pots are recommended and come in a diversity of sizes and shapes and are relatively inexpensive. They will hold up well over time. Olla Bottles* are also great. The shape lends itself to do well in large containers. Use of the Olla Ball* system requires the least amount of effort. Although more expensive, the resulting gardens are more productive and the water savings the greatest. It possible to make your own ollas using inexpensive terracotta pots from garden centers (see reverse). These are the most economical, particularly for larger gardens where numerous ollas are needed. Use of a 2-liter plastic bottle with holes is not functioning the same way as low-fired clay jars. This method facilitates deep watering but does not save water and water slowly over time. It requires nearly daily watering.

*Products from Cutting Edge Ceramics based in Tucson, AZ. Available at Native Seeds/SEARCH.

SUGGESTED CROPS TO USE WITH OLLAS

Tomatoes	Chiles
Squash	Lettuce/Greens
Watermelons	Melons
Herbs	Perennial vines, bushes

HOW TO MAKE A TERRACOTTA FLOWER POT OLLA



SUPPLIES

2 terracotta flower pots or 1 flower pot and 1 terracotta saucer*
Hole plug (recommend a penny)
Waterproof glue (recommend Gorilla Glue®)
Waterproof silicone caulk

* The size of the flower pots depends upon the location you plan to use the olla. For 24" containers suggest two 6-8" pots, for smaller containers suggest one 6-8" pot and one saucer. Suggest two 8-12" sized pots or one 12" or greater pot with corresponding saucer for raised or sunken garden beds with at least a 2 foot depth. If using saucers find a saucer that has the same sized rim as the pot.

STEP 1 - PLUG THE HOLE

You want the olla to seep water from the pores of the olla, not run out through the hole. Therefore, it is necessary to plug the hole of one of the terracotta pots. If you were using a pot and a saucer do not plug the hole of the pot as this is where you will fill it with water.

A penny is the perfect size for most terracotta pots. Alternatively you can use a flat stone, glass bead, piece of plastic, or other relatively flat material. Glue the plug material to the pot using waterproof glue. Cover entire plug area with caulk. Allow to dry according to glue and caulk instructions.



STEP 2 - GLUE TOGETHER OLLA

Place a bead of glue on the rims of both pots. If using a pot and saucer, place a bead of glue on the rim of the saucer and the pot. Follow instructions for the glue. For example, Gorilla Glue® requires the surface to be wet. Invert pieces so the glued rims are together. Place a heavy paving stone or other object on top of inverted pots to weigh them down. This will help achieve a tight seal. Let dry for several hours.



STEP 3 - SEAL OLLA

Place a bead of caulk along the seam between the pots. Use a sponge or your finger to press caulk into the seam to achieve a tight seal. The pots will be buried so it does not have to look attractive. Let caulk dry and set overnight.

STEP 4- TEST YOUR OLLA

Before burying your ollas it is a good idea to fill with water and look for excessive seepage along the seam. If you notice water leaking from the seam, empty water and allow to dry. Re-seal the area with more caulk.

STEP 5- INSTALL THE OLLA

Bury your olla with at least 1-2" remaining above the surface. Fill with water. Top off with water again after about 30 minutes and the water has percolated into the soil and clay pores. Place a saucer, mason jar lid, or a flat stone over the hole. Periodically top off the water level of the olla.



Finished ollas made from a 6" diameter pot (left) and saucer and two 8" pots (right).



A terracotta pot olla made from 2 6" pots installed in an 18" container planted with a tomato. It is capped with a mason jar lid.