How to Make a Rain Barrel

In general, all but the barrel can be purchased at most hardware stores.

List of Materials:

1. The Barrel:

The barrel should be “food clean” plastic with a removable lid for cleaning and assembling. Barrels come in various sizes, the most common being 55 gallons. A heavy duty barrel works best, but a something as thin as a Rubbermaid trash barrel would work, just not as well. Barrels can be obtained from various sources, such as Food and Beverage companies and Barrel and Drum suppliers.

2. The Spigot & Hardware:

You will need a 3/4” hose bib spigot (1/2” will work but with smaller locknut and washer). These have male threads at one end to screw into the barrel and at the other to attach a standard size garden hose. You will also need a 3/4” galvanized locknut, a rubber washer with a 1” inner diameter, Teflon tape, superglue, and silicone sealant.

3. The Overflow Valve & Hardware:

You will need a 3/4” brass overflow valve (plastic will work too) which has male threads on both ends with the outer end able to connect with the female end of a hose. These are called “male hose MIP adapter 3/4 X 3/4 X 1/2 “at Lowe’s and #A-665 at Home Depot. You will also need the locknut, rubber washer, Teflon tape, superglue, and silicone sealant.

Tools:

- Drill
- 1” hole saw or drill bit (use 15/16” for very secure fit)
- Utility knife
- Needle nose pliers or wrench
- Vegetable oil and cloth
- Screw driver and 6 screws (see # 14)
- Mesh screen for top filter
Making the Rain Barrel

1. Clean and rinse your food-clean container with a mild soap and water (rainwater if you have any yet)

2. Drill a 1" hole with your hole saw or drill bit, just off the bottom of the container for the spigot assembly. Put it as low as possible for easy maximum water use. It’s designed to be on a stand; you can use 4 cinder blocks. Note: if you are unable to reach down to the inside bottom of the barrel, you might want to use a 15/16" bit and put the washer on the outside of the barrel.

3. Drill a 1" hole an inch or so below the rim for your overflow valve assembly. This hole can go anywhere around the barrel at that level. Keep in mind: don’t put it too close to the top (overflow) or too low (lose water storage). Please note that if you have a 2,000 square foot roof and large downspouts, you may want to get a larger overflow valve.

4. Use the 1" drill bit to make a dozen or so holes in the lid, Rainwater will filter through the mesh screen then through the holes into the barrel.

5. Take the utility knife to clean scraps from around the holes.

6. Wrap the barrel end of the spigot three times around with Teflon tape and then screw in the spigot squarely. It should go in by hand.

7. Take the rubber washer and glue the surface of one side with strong glue and reach into the barrel and work it over the threads, flush with the barrel side.

8. Screw on the locknut and finish tightening by turning the spigot while holding the locknut with a wrench or pliers. You may need a second person to turn while you hold.

9. Wrap the longer end of the overflow valve with Teflon tape three times and then screw it into the overflow hole by hand, or use a wrench or pliers if necessary. The outside male threads should be able to connect with a standard size garden hose to divert the overflow.

10. Repeat step # 7 above.

11. Screw on the locknut as far as possible by hand or on the outside threads. Then hold the locknut while tightening overflow valve with wrench or pliers until it is very tight.

12. Take a tube of all-purpose silicone sealant and apply a bead where overflow valve meets the outside of the barrel. Note: If you have a secure seal, this step may not be necessary.

13. Repeat step #12 on the spigot assembly.

14. Trace the outline of the lid on a mesh fiberglass screen and then cut it out. Screw on, if necessary, or just tighten ring around cap to secure. This screen is designed to keep mosquitoes out.

15. Take the cloth and vegetable oil, and apply it to the scratched areas of the barrel to clean and shine it up.
Why is a Rain Barrel good for the Environment?
Water coming from your tap has been treated at the treatment plant in order to make it suitable for drinking. This process requires large amounts of energy; therefore using rainwater instead of treated tap/city water for irrigating plants saves energy. Second, stormwater falling on an impervious area such as pavement, concrete, or a rooftop generally drains straight to a storm drain, ditch, or directly into a creek instead of soaking into the ground. As these impervious areas drain; the stormwater carries whatever pollutants (herbicides, pesticides, fertilizers, dog waste, etc.) it picks up along the way and deposits them into our streams. Impervious areas also mean that water that would have otherwise been absorbed into the ground and gradually seeped back into our streams over a period of days, now flows straight through our stream system in the course of hours, many times causing flooding. This accelerated draining process not only increases flooding but it also leaves our streams lower and drier for longer periods of time. Therefore, if we catch stormwater in a barrel and later release this water back into the ground when watering our gardens and trees, we’re both decreasing the flooding that rain events would have otherwise caused and helping to replenish the ground water and the streams during that period of dry when the streams need it most.

Why is a Rain Barrel good for your plants?
Rain is naturally soft water and devoid of minerals, chlorine, fluoride, and other chemicals. For this reason, Plants respond very well to rainwater. How much water can you collect? For every inch of rainfall that falls on a catchment area of 1,000 sq. ft. you can expect to collect approximately 600 gallons of rain water. Your roof catchment area is equal to the total square feet of your house (one story) plus the extension of your eaves. To calculate the square footage of your home’s catchment area, measure the outside walls of your home, including the overhang of any eaves. Multiply the width times the length of your home to get the total roof catchment area. Let’s say your home has a roof catchment area of 2,000 sq. feet. Since one inch of rainfall provides approximately 600 gallons of water for a 1,000 sq. ft catchment area, you could collect 1200 gallons during a 1” rain.

This information was obtained from: http://www.nashville.gov/water/education/rainbarrel.asp
Rain Gardens

... absorb water, reduce runoff, prevent flooding

2009

What are rain gardens?
Rain gardens are depressional areas landscaped with perennial flowers and native vegetation that soak up rainwater. They are strategically located to capture runoff from impervious surfaces, such as roofs and streets. Rain gardens fill with a few inches of water after a storm and then water filters into the ground, rather than running off to a storm drain.

Why are rain gardens important?
As cities and suburbs grow, increased storm water runoff from impervious surfaces becomes a problem. As more impervious surfaces are added to our communities, it is more important than ever to help rainwater infiltrate. This protects water quality and reduces storm water runoff.

Storm water runoff from developed areas increases flooding potential and carries pollutants from streets, parking lots and lawns into local streams and lakes. Rain gardens can absorb most rainfall events.

Designing and Planting
Designing and planting a rain garden is very similar to creating other perennial gardens, with a few of the following exceptions:

Location
Rain gardens must be located to intercept runoff from impervious areas. They can be placed anywhere good soils with adequate percolation rates exist. It is best to keep rain gardens away from building foundations, utilities, and septic systems.

Size
Rain gardens are typically 7 to 20 percent the size of the impervious surface generating the runoff entering the garden. Measure the square footage of the impervious area (length x width); then multiply this by 0.07 (7 percent).

Continued on back page...
Determine a length and width of the rain garden that best fits the site. For example, a 2,000 sq./ft. roof with four downspouts, when multiplied by 10 percent, would call for a rain garden 200 sq./ft. in size, or 20’ long by 10’ wide.

Garden Depth
A typical rain garden is between six and nine inches deep. It must be level side to side and end to end, and the berm must be level so storm water runoff spreads evenly.

Soil Amendments
To prepare for a rain garden, remove 12 inches of soil to create a depressional area. Add three inches of sand, two inches of compost and one inch of topsoil, and blend uniformly.

Plant Selection
While rain gardens are a highly functional way to help protect water quality, they can also be an attractive part of your yard and neighborhood. Choose plants based on site considerations for light, moisture and soil. Vary plant structure, height and flower color for seasonal appeal and butterfly habitat. Mowed grass borders or hard edging are recommended around the garden. The use of native plants is encouraged.

Young plants, or plugs, are best for rain gardens because they are easier to to establish and maintain. When laying plants out, randomly clump individual species in groups of three to five plants to provide bolder color. Be sure to repeat these individual groupings to create repetition and cohesion in a planting. It is a good idea to place plant labels next to each individual grouping. This will help identify the young plants from weeds as you maintain the garden.

It is important to water rain gardens regularly throughout the first season. Once established, they will thrive without additional watering. A two-inch layer of shredded wood mulch is an important part of a rain garden. Mulch helps retain moisture and discourages weed seeds from germinating.

Low Impact Development (LID)
A rain garden is one example of the low impact development (LID) approach to storm water management. Traditionally, storm water management has involved the rapid conveyance of water via storm sewers to surface waters. Low impact development is a different approach that retains and infiltrates rainfall on-site. The LID approach emphasizes site design and planning techniques that mimic the natural infiltration-based, groundwater-driven hydrology of our historic landscape.

A mature rain garden in the Okoboji area catches storm water runoff from the street, thanks to a curb cut in the road.

More information about rain gardens
Find additional information about rain gardens by visiting the follow Web sites:
- www.ia.nrcs.usda.gov/features/raingardens.html
- www.iowagriculture.gov/press/raingarden.asp
- www.iowasudias.org
- www.raingardens.org
- www.mninter.net/~stack/rain/
- www.stormwatercenter.net

* Editorial content courtesy of the Iowa Department of Agriculture and Land Stewardship-Division of Soil Conservation (IDALS-DSC).

USDA is an equal opportunity provider and employer.