

DIY

OUTDOORS



BARREL WATER COLLECTOR



Make wine into water (sort of).

By Chris Barnes and Michri Barnes

Many people let the rain that falls on their roof run away, then they use drinking water piped in from afar for washing floors and watering plants. Here's a handy, mosquito-proof rain barrel we put together that buffers 55 gallons of water and adds a handsome accent to our yard. It's especially valuable during droughts, and if you're in a rural area with wells and electric pumps, it also means being able to flush the toilet when the power goes out. The barrel and fittings are also suitable for potable water, but don't store graywater, or pathogens can grow.

Our barrel sits under an eave of our house, where even on foggy days it collects water that trickles down. You can also put it under a downspout, or anyplace else outside where it will capture water.

And if you're really ambitious, you could have a series of barrels and move the pump from one to the next, or even interconnect them.

1. Make holes in the barrel lid.

Lay out the following holes on the barrel's cover and drill them with the hole saw. You need one hole near the edge for your pump's down tube, and two more for collected water to drain through.

Use a strong drill, and draw the hole saw out to clear away sawdust every once in a while. It also helps if you remove some wood from the hole by chiseling across the grain at the edges (Figure A, opposite page).

When you smell wine, you're almost there. One of our plugs fell in, but that's no disaster; it just means there's some wine barrel in our wine barrel.

Cover the drain holes with screen to keep out mosquitoes and debris. I cut two 4" squares with a straightedge and utility knife, then folded the edges in and stapled them down (Figure B).

Photography by Michri

MATERIALS

Get the barrel and hand pump first, then determine the sizes of other parts to fit.

Barrel, covered We got ours for \$20 from a local winery, but you can also use a whiskey or pickle barrel. Or check garden supply, home improvement, or grocery stores. Barrels get leaky and eventually fall apart when they dry out, so if you don't get to your project right away, put some water in the barrel or hose it down occasionally.

Hand pump, aka pitcher pump \$40 from Northern Tool + Equipment (item #108980, northerntool.com) or check your local hardware store

Bung or expansion plug from the winery (or other barrel source) or a hardware store

PVC pipe, about 3' long Its diameter must fit the pitcher pump; ours was 1¼".

PVC foot valve to fit pipe

PVC adapters to fit pipe:

Male pipe thread (MPT) to slip

Female pipe thread (FPT) to slip

Teflon plumbing tape and TFE (teflon) pipe thread sealer paste You can use just one or the other, but my professional plumber friend uses both.

PVC purple primer

PVC cement such as Christy's Red Hot Blue Glue or Gorilla PVC

Wire screen, bronze or stainless steel, about 5"×9"

Check the scrap bin at your hardware store.

Screws to attach the pump to the barrel

Spray-can insulating foam We call it funny foam.

TOOLS

Drill

2½" hole saw

⅛" drill bit

Mallet or hammer

Chisel

Staple gun and staples or small tacks

Utility knife

Straightedge

Hacksaw or PVC saw **A PVC saw cuts straighter.**



Fig. A: It helps if you remove some wood by chiseling the hole saw cuts; be sure to cut into the grain.

Fig. B: The uncovered hole in the top accommodates the pump, while 2 screened holes let water drain in.

2. Install the pump.

Our hand pump came with a check valve, but its quality was questionable, so we installed a foot valve to keep the pump primed. (It sucks when all you want is a bucket of water, and you need a bucket of water to get it.) The valve was multi-size, so we first had to cut a section off the end so it would fit our 1¼" pipe.

First, screw the pipe adapters onto the hand pump and the foot valve. Wind teflon tape 3–5 times around the threads of both adapters, in the direction you'll be screwing. Apply TFE paste on top of the tape. Then screw the foot valve into the FPT-to-slip adapter, and screw the MPT-to-slip adapter onto the pump. Screw both as tight as you can with your hands.

If you find that you lose the prime on your pump, check and tighten these connections, but be care-

ful; overtightening PVC fittings can cause cracks.

In a well-ventilated area, liberally apply PVC primer and then PVC glue to both the PVC pipe and the slip fitting on the foot valve. Attach the two by giving the pipe a slow half twist and a quarter twist back as you push it in.

Set the pump down and measure how high its slip fitting hangs. Set the 3' pipe into its hole in the top of the barrel, mark the barrel's height, and add the slip fitting distance (Figure C). Cut the pipe to that length, and deburr the edges with a knife. Glue the pipe into the pump's slip fitting.

Set the pump in place and securely screw it down (Figure D).

3. Seal and vent.

Seal the bunghole on the barrel's side. Tap a wooden bung in with a mallet, or push an expansion plug in as far as you can, and tighten the wing nut. If the bung leaks at first, it will probably swell up and seal.

Spray insulating foam to fill the gap around the down tube. You may want to wait until you've used the barrel for a couple weeks and know that everything is working properly. Don't touch the foam while it's still wet; it makes a mess. After it dries, cut off the excess with a knife.

TIP: Once you've started using the can of foam, you have to use it all, so if you have any other holes to fill, like around your doorjamb, do it now. Or you can make a giant fake dog doo, a funny hat, or a combination of the two.

Finally, drill 8 or more $\frac{1}{8}$ " vent holes around the barrel, about 3" down from the top. These let air escape from the barrel during a heavy downpour, and prevent standing water on top when the barrel's full.

That's it! Once we finished, we couldn't wait for the rain to test the pump, so we put some water in the barrel with the garden hose.

We've been using water from the barrel ever since for our plants, pets, chickens, and ducks. It's also been nice to have around for flushing toilets when the pipes freeze.

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Fig. C: Measure the down tube to extend from the adapter under the pump valve to the barrel's bottom.
Fig. D: Wear proper attire while screwing the pump onto the barrel top; a MAKE shirt always works!

