I live in Ka`u and have very low rainfall. I can't "waste" water to do a first-flush. Are there any other options for me?

Yes. Your rainwater catchment system supplies many needs besides drinking, cooking, and water for bathing.

According to the American Water Works Association, one of the largest water users is irrigation. **Using first-flush water in your garden is an excellent and safe way to use this water and meet your garden's needs.** Depending on your volume of first-flush water, you can always add another small tank to your system and plumb the the first-flush water to this tank for irrigation. If you add a spigot and hose and possibly a pump, you can use this water all over your garden.

Other high-use water items in your home include toilets and washing machines. Again, you can add an extra "first-flush" tank to your catchment system and some plumbing directly to your toilets and washing machine to make use of this water. While there are up-front costs to doing this, you will be using water very efficiently and meeting your household needs.

3 reasons a first-flush diverter can make a big difference in your rainwater catchment system:

1. Diverters will allow leaves, debris, and fecal matter to wash away, keeping your tank water cleaner.
2. The cleaner the water going in to your system, the better quality the water will be.
3. First-flush devices typically require no power, so they are a low-cost, low-tech way to improve water quality signifi-cantly.

For more information, contact:

University of Hawai`i, Mānoa

College of Tropical Agriculture & Human Resources

Hawai`i County

Cooperative Extension Service

808-981-5199

www.hawaiirain.org

Thanks to the County of Hawai`i for making this brochure possible through a grant.

Rainwater Catchment Solutions:

First-Flush Diverters

Courtesy photo: Jason Kerrigan Rain Harvesting Pty. Ltd.

What is a first-flush diverter and how does it work?

A first-flush diverter helps keep your system clean by enabling dust, other debris, and any fecal matter that collects on your roof and in your gutters between rainfalls to be flushed out at the very beginning of the water collection process. The cleaner your water is going into your system, the cleaner your water will be when you use it. Studies have shown a tremendous drop in fecal bacteria levels when the roof is flushed before water enters the tank. Bacteria also like to live in decaying leaves and other organic matter that collects at the bottom of the tank. A first-flush diverter "washes" the roof, so there is less rubbish on the tank's bottom.

First-flush design: Vern Wood

This design works because the bends in the pipe at the top of the diverter keep the first-flush water from flowing back into the tank. It would be better if the water did not drain from the diverter this close to the tank.

First-flush design: Bob Jordan

In this example, the downspouts come together into one pipe and then drop into the first-flush diverter. It runs downhill towards the endcap and a small hole near the end allows the water to drain out.

Where is a first-flush diverter installed?

A diverter can be installed just before your tank or near the downspouts. As it begins to rain and water comes down from the roof and gutters it flows from pipes into the diverter. The diverter fills up with the first flush of rain from the roof. Once the diverter is full, the cleaner water flows into the tank. Either bends in the diverter pipe or floating ball valves stop the diverted water from washing back out of the diverter and into the tank. A small drain hole near the end of the diverter pipe allows the diverted water to run out slowly so that the diverter is empty and ready for the next rainfall. A threaded cap is placed at the end of the diverter pipe to allow for periodic removal of leaves and other debris.

First-flush design: Milo Clark

At each downspout, water drops first into this diverter which goes from a 3" to a 4" pipe. A 3 V" ball at the bottom floats up and seals the pipe to keep the first-flush water from going into the tank when the diverter is full.

How much water do I divert?

Most literature cites 5-10 gallons of water per 1000 square feet of roof area should be diverted.

Where can I get a first-flush diverter? Can I build one myself?

Yes. There are commercial versions available from catchment suppliers and on the internet. It is also very easy to build a first-flush device from parts available at your local home improvement store.