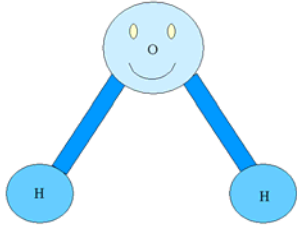


## Water Ways

Indian River County Extension Service Water Quality Program

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**Hydro the Water Molecule**

Drug Disposal Instructions	2
Pesticide Notes	3
Pond Appeal Tip	3
Hydro's Page	4
Upcoming Events	5

### JUST SAY NO TO DRUGGED FISH!!!

Fish on Prozac! It may sound ridiculous, but it is happening. Research conducted by the United States Geological Survey (USGS) in 2002 found that 80 percent of the 139 streams in 30 states contained drugs, hormones, steroids, and personal care products. When aquatic organisms are exposed to these substances, there are neurological and physiological effects. For instance, common anti-depressants such as Prozac relax fish. This effect isn't good when it comes to survival in the world of eat or be eaten (or at least hide). In addition, these drugs have been shown to cause developmental problems in fish and delay metamorphosis in frogs.

Since there aren't any underwater pharmacies, how are drugs getting in the water? We put them there by flushing drugs down the toilet. In the past, this was the recommended way to get rid of unwanted medications. However, municipal wastewater treatment plants aren't equipped to filter out most of the pharmaceutical drugs. This means the drugs get released into our water bodies and can be absorbed by aquatic wildlife.



#### HYDRO'S WATER TIP

Collect the water you use for rinsing produce and reuse it to water houseplants.



#### DID YOU KNOW...

- Over 70,000 different water contaminants have been identified.

You can help get our aquatic wildlife off drugs. Simply don't flush them down the toilet. This doesn't mean that you will have drugs piled up in your medicine cabinet because there are other ways to dispose of them that doesn't harm water bodies. First, ask your pharmacist if they will take back expired and unused medications. Some pharmacies may be willing to provide this service, but call your pharmacy before taking in any expired and unused medications.

Another way to get rid of your unused or expired medications is to throw them in the trash. The Florida Department of Environmental Protection has created a way to dispose of pharmaceuticals that will not harm the environment and minimizes the chance drugs being taken accidentally and obtained illegally. Instructions are on page 2.

It may take some time getting used to throwing drugs in the trash, but once you get into the habit, it will become second nature. All it takes is some stuff found around your home and a couple of minutes. That is a small price to pay for protecting our water.

## TRASH YOUR DRUGS INSTRUCTIONS

According to the Florida Department of Environmental Protection, these are the steps for proper drug disposal at home:

- Keep the medicines in the original container. This will help identify the contents if they are accidentally ingested.
- Mark out your name and prescription number for safety.
- Put something in with the medicine to make it undesirable
  - For pills: add some water or soda to start dissolving them
  - For liquids: add something inedible like cat litter, dirt or cayenne pepper.
- Close the lid and secure with duct or packing tape.
- Place the bottle(s) inside a non see-through container like a coffee can or plastic laundry bottle.
- Tape that container closed.
- Hide the container in the trash. Do not put in the recycle bin.



## DRUGS RECOMMENDED TO BE FLUSHED

The Federal Drug Administration recommends flushing these medications down the toilet because they have a high potential for abuse:

- Actiq (fentanyl citrate)
- Daytrana Transdermal Patch (methylphenidate)
- Duragesic Transdermal System (fentanyl)
- OxyContin Tablets (oxycodone)
- Avinza Capsules (morphine sulfate)
- Baraclude Tablets (entecavir)
- Reyataz Capsules (atazanavir sulfate)
- Tequin Tablets (gatifloxacin)
- Zerit for Oral Solution (stavudine)
- Meperidine HCl Tablets
- Percocet (Oxycodone & Acetaminophen)
- Xyrem (Sodium Oxybate)
- Fentora (fentanyl buccal tablet)

Always refer to printed material that comes with your medication for specific instructions.

## OTHER WAYS TO PROTECT OUR WATER RESOURCES

Avoid putting these materials down the storm drain.

- Motor oil
- Antifreeze
- Paint
- Yard waste
- Plastics
- Fertilizer
- Pesticides
- Grease
- Leftover household chemicals

## PESTICIDE NOTES

- Dr. Marjorie Hoy of UF/IFAS recently returned from Mauritius, where she conducted foreign exploration for predatory mites that suppress red palm mite, *Raoiella indica*, populations. Dr. Hoy returned with predatory mites (Phytoseiidae) that appear to be excellent natural enemies and hopes that colonies can be established for evaluation in quarantine. The red palm mite is an invasive pest in the Caribbean that recently colonized Puerto Rico and is expected to invade Florida soon. It is a pest of palms and, in the Caribbean, attacks bananas and plantains, as well. (UF/IFAS Entomology/Nematology Department Newsletter, October, 2007 as cited in UF/IFAS Chemically Speaking, October 2007).
- Florida citrus growers are fighting a plant disease with the potential to destroy the state's orange juice industry. Since citrus greening was found in Miami-Dade County in September 2005, it has spread to 27 of Florida's 32 citrus-producing counties, and that the latest confirmed discovery was in a grove in St. Johns County in

north Florida. Tim Gast, a horticulturist at Southern Gardens Citrus, one of Florida's largest growers, with 2.3 million trees, was quoted as saying, "It's the most serious disease in the industry," adding that the company has cut down more than 100,000 infected trees. Michael Sparks, chief executive officer of Florida Citrus Mutual, a trade group, was cited as saying the threat to Florida's industry - which saw sales of \$1.4 billion in 2006 - is enormous, adding, "The worse-case scenario is you can lose the entire industry. Let's pay attention and nip this in the bud." So far in the United States, it has shown up only in Florida, which provides 80 percent of the U.S.A.'s orange juice, according to Florida Citrus Mutual, which represents 8,000 growers. Michael Rogers, an entomologist at UF/IFAS, was cited as saying that Brazilian growers have been battling it for 10 years, and that infection rates in Brazilian groves where the insects were not controlled rose to 40 percent from two percent in three years. (*USA Today*, 10/2/07 as cited in UF/IFAS Chemically Speaking, October 2007).

## STORMWATER HOTLINE

Curiosity of the Indian River County Stormwater Division.

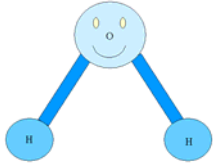


## POND APPEAL TIP

As the weather becomes a bit warmer, the algae and aquatic plants in your pond are going to grow at a faster rate.

You can help slow down the growth by decreasing their food, which is nitrogen and phosphorus in fertilizer.

- Don't over fertilize. Follow University of Florida recommendations for your particular grass species.
- When fertilizing near a pond, leave a "Ring of Responsibility" at the water's edge. This is an untreated area of at least 5 feet.
- Properly irrigate. Irrigate 2 times per week. Apply 1/2 to 3/4 inch of water.
- Make sure grass clippings do not blow or get tossed into the pond.



## HYDRO'S KIDS PAGE

### HYDRO'S WATER CYCLE JOURNEYS- BACK TO THE SKY

Speck and I had met Algae in a stormwater pond. She was a tiny plant that lived in the water.

After we floated away from Algae, Speck and I wandered around the pond. We saw plants and fish.

Speck and I have seen a lot together. We met in the sky and became rain. We then had a fun time falling through the sky and coming to the ground.

We also met a lot of new friends. They taught us a lot about **pollution** and how to keep water clean. We have a lot of smart friends!

Suddenly the light in the water got brighter. It was the sun, and I started to feel very warm. I knew what was going to happen. I was going to **evaporate**. This is when liquid water turns into a gas. The gas floats up into the sky.

Speck wasn't going to be able to come back with me to the sky. I said goodbye to him. I then rose out of the water and into the sky. I was going back into the clouds.

I was sad to leave my friend, but I had some great memories. I knew I would meet more friends in my next adventure.

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### FUN TIME

Draw a picture of me evaporating. Have fun!

-Hydro

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Visit Our Web Site  
[http://indian.ifas.ufl.edu/waterquality/water\\_quality.htm](http://indian.ifas.ufl.edu/waterquality/water_quality.htm)

## UPCOMING EVENTS

Date/Time	Event	Location
April 5	Fellsmere Day	Fellsmere, Florida
April 5 10am-4pm	Goby Fest	St. Sebastian River Preserve State Park
April 11 8:30am-12:30pm	Limited Certification Training- license renewal	IRC Extension Office <i>Pre-registration required*</i>
April 18 2:00pm-3:30pm	Rain Barrel Workshop	IRC Extension Office <i>Pre-registration required*</i>
April 19 Noon-8pm	Earth Day	Riverside Park, Vero Beach
April 25 TBA	Limited Certification Training in Spanish	St. Lucie County Extension Hurricane House <i>Pre-registration required*</i>
May 1 8:30am-12:30pm	Aquatic Pest Control Training	IRC Extension Office <i>Pre-registration required*</i>

**\*To pre-register for classes and workshops, call (772) 770-5030.**

*Other pesticide applicator training classes:*  
 Brevard County Extension (321) 633-1702 or (321) 952-4536.  
 St. Lucie County Extension (772) 462-1660.

If you have any questions about the upcoming events or anything in this newsletter, please contact Janet Bargar at the University of Florida/IFAS Indian River County Extension Service.



The enclosed material is provided as one of the many services to the educational programs offered by this agency. Our statewide network of faculty is prepared to provide current information on food, agriculture, marine, and natural resource science, energy, nutrition, family and 4-H youth, community development, and related fields. We will be happy to help you with additional information upon request.

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