

Culturing Vinegar Eels

From Ken Balfanz

When people come over to the house and are looking at the fish, often they point to a mystery jar on the top shelf way above the tanks and ask "What's in that?" What they've spotted is a plastic one gallon jar nearly full to the top of a pale yellow liquid covering a few inches of a white sludge in the bottom. I tell them its a jar full of vinegar and rotten apples. The usual response is "euwww....." The next reaction is even more fun. I'll pull the jar down and get a flashlight. When the light beam angle is just right, the fish room guest can see the top three or four inches shimmering and wiggling in the light. That usually gets their attention and they move in for a look closer look. When I tell them they are looking at millions of tiny worms swimming and reproducing in this soup of rotten fruit and vinegar, usually they jump back. Way back. Start a culture and have some fun with your guests and feed the smallest mouths in your fish room too. It couldn't be easier.

The purpose of a vinegar eel culture is to have live food for your smallest fry for the first week or so. After that they'll be able to eat baby brine shrimp. I've started barbs and rainbowfish with these little guys. I'm sure tetras would like them too. Cory's would probably eat them, but since these worms will swim all around in the water column, the catfish might have a hard time finding them. Microworms might be a better choice for the catfish since those little wigglers sink. Are you considering breeding South American Rams? Better start a vinegar eel culture.

The first step is to get a container for them. I've had good luck with a one gallon plastic wide mouth jar. You can buy a few of these in the plastic storage container isles of several discount department stores. Start with two jars, that way you'll have a spare culture when one crashes right when your favorite rainbow decides to spawn.

Pick up a gallon of apple cider vinegar at the grocery store. Buy the cheap stuff, the worms won't care. Pour half in each jar. Cut up an apple and put half in each jar. The apples decompose, feed bacteria, the eels eat the bacteria, grow, and reproduce. Next time you look at a jar of apple juice read the label and notice its been pasturized. The pasturization process prevent you and me from drinking these worms on a regular basis. Fill the rest of your gallon jars with water to nearly the top. Let it sit. A day, a week, or a month, I don't think it matters. Get a starter culture from a club member or mail order and pour it in. I used to loosely screw the lid back on but have since changed to a cheese cloth lid rubber banded in place for a lid. The fruit flies were working their way in along side of the loose lid and laying eggs in the vinegar, hatching, and then flying around the house. My family doesn't need that. The cloth lid lets the vinegar and critters breathe and still keeps out the undesirables.

The next step is waiting. It might take a few weeks or a month, but eventually the top half of the jar will be filled with your new live food. Temperature plays a part in to how fast these reproduce. A jar in my coolish basement might only be ready to harvest every other month, while another jar stored upstairs under a warm fish tank stand can be ready for harvest every week or two. Pick a warm spot out of the way for your culture grow. Just wait.

The internet is filled with information on vinegar eels. The most useful tip I picked up from the 'net' was a clean and efficient harvest method for these critters. I've shared it with several experienced club members and was surprised they hadn't heard of it. Most everyone I talked to were straining the vinegar through a coffee filter and then swishing the filter in the fry tank. That seemed like a stinky mess to me. You must come up with a method to separate the eels from the vinegar or the acid will kill your fry. The method I found will remove 100% of the eels from the vinegar, won't get you all stinky while slopping vinegar and old fruit juice through a little piece of paper, and will allow you to feed your fry with nicely rinsed eels for several days from the same batch of vinegar.

The worm/vinegar separation process starts at the liquor store. Be a nice guy. Pick out a bottle of wine to share with the special someone who puts up with you and your fish hobby. Better make it two bottles, you'll need to be extra nice to them with these new jars of vinegar and worms in the house. Pick a wine that comes in a clear glass. It's really the bottle and its shape we are interested in. The contents are a bonus.

Take an old floss filter insert, or maybe a piece of a sponge, cut a piece off and roll it into a dense cylinder about the thickness of a thumb and about an inch long. Tie a two foot long piece of fishing line with a couple of raps and a knot to the middle of your little bundle of floss. Slide the plug into the neck of the clear wine bottle. Push it all the way through the neck and into the bottle. The plug should be dense enough that you might need to use a pencil to do this. Let the string hang on the outside. We are ready to fill the bottle. The plug should be laying in the bottom of the bottle.

To start the collection process I siphon off the top layer of vinegar from my one gallon jars into the wine bottle with a piece of airline. I fill the wine bottle until the vinegar is just starting to fill the neck and then I stop. It can't be full to the tip top. When the fluid level is just right, pull on the string and gently pull your floss plug back up and into the middle of the bottle neck. After a try or two, you'll see how full the bottle has to be before you pull the plug in place. What we have made with the plug is a divider. We are going to fill the neck space above the plug with fresh water. The area below the plug should still be in the vinegar. The plug is a divider that keeps the fresh water from mixing with the vinegar. Set it on the counter and wait until morning.

Over that next twelve hours or so, the eels in the vinegar will start to run out of oxygen in the top of the skinny wine bottle neck. They'll swim to the surface of the vinegar where they'll run into the plug instead of an air space. Since they are so small, they are able to swim or wiggle right on through the floss. You'll find the fresh water on top of the plug is just loaded with your freshly rinsed eels, ripe for the picking with your turkey baster. Suck them out and just drop them in the fry tank. Couldn't be easier. Replace the water on top of the plug and wait for the next batch to swim up. This can continue for many small feedings over maybe two days when eventually you'll see that ALL of the eels have been separated from the vinegar without you touching any of it. Pretty neat!

After the wine bottle culture is exhausted, pour the vinegar from the wine bottle back into your one gallon jar. Harvest your next batch from the other culture. Let the first rebound. This separation method can be so efficient you can really decimate the culture population if you are determined.

That is why I always have at least two cultures running.

When the apples in the bottom are nothing but sludge and the culture isn't producing much, often I'll just add some more apple scraps and it'll take off again. When the sludge is really deep, I'll pour the whole culture down the garbage disposal and start over. This is maybe once a year, maybe less.

As an example of how tough these guys are to kill, once I tried apple juice instead of apple slices in an effort to keep a cleaner culture. The thought was there might be less accumulation of sludge. It turns out that apple juice has a lot of added sugar when compared to fresh apples. The culture started to ferment off of wild yeast in the air. It looked like it was on the stove at a slow simmer for all of the CO2 gassing off of it at one point. The eels survived the alcohol treatment. They've survived six months of neglect in a dark cabinet. They'll survive for you too. Get a culture started and give some of the fry with really small mouths a shot. They are easy. They are REALLY easy once you know how to easily separate them from the vinegar. The reaction from your fish room visitors is great fun too. Good luck.