



# Composting with Worms!

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## Uses for Worm Castings

- Add to potting soils
- Top dress potted plants (repeat 3 months)
- Add to seed starting media (1 part per 5-10 parts)
- Add to seed furrow or planting hole of flowers & veggies
- Work into soil around your garden veggies, perennials, etc
- Water your plants with “Worm Tea” leachate
- Component of aerated compost tea

# Why Vermicomposting?

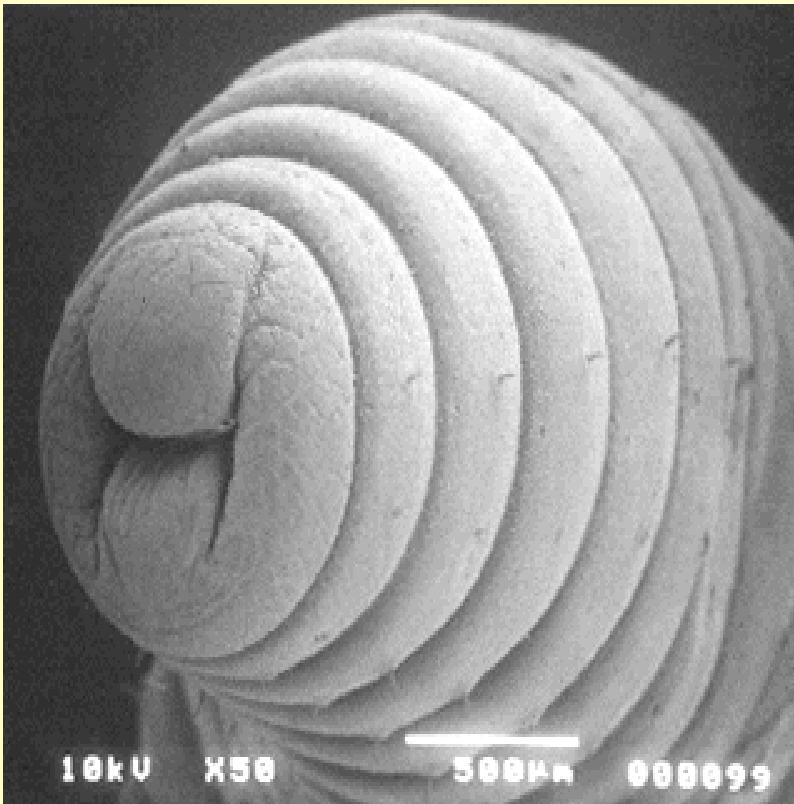
- Saves \$\$\$ - makes use of your resources
- Saves landfill space
- Rich supplement for plants
- Anyone can do this!



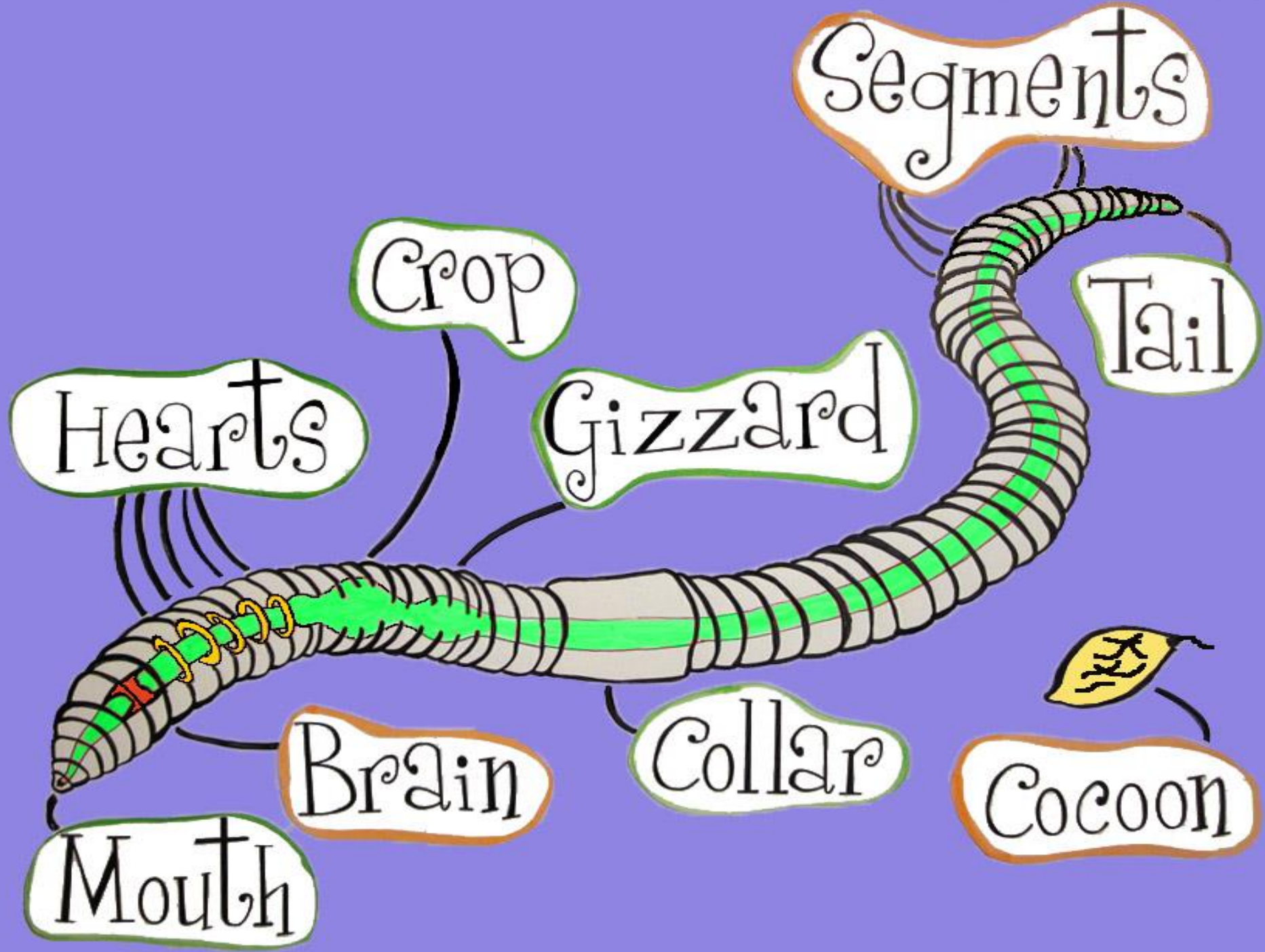
# There are some disadvantages though...

- Takes time for worms to convert bedding/food into castings
  - 3-6 months to fill a good size bin.
- Odors can develop
  - Overloading the bin with wet food
  - Too much moisture
- People Time to properly manage bin conditions
  - Have worms consumed food?
  - Moisture – too wet vs. too dry
- Pest & Pathogens
  - Introduced garden soil or fruit stuffs
- Harvesting worm castings
  - Separating adults, juveniles & egg cases

# What do worms really “EAT”?



- Worms eat the microbes that feed on the decaying food, not the food itself.
- Food won't attract them until it starts to decay.
- Consider pre-composting food



Segments

Crop

Tail

Hearts

Gizzard

Cocoon

Brain

Collar

Mouth

Not Just Any WORM will do!



“Red Wiggler”  
(*Eisenia fetida*)

Sold in  $\frac{1}{4}$ ,  $\frac{1}{2}$ , 1 lb  
containers or by  
number or worms.

Worms live 2-3 years  
on average, sometimes  
longer...





# Newly Hatched Red Wigglers...

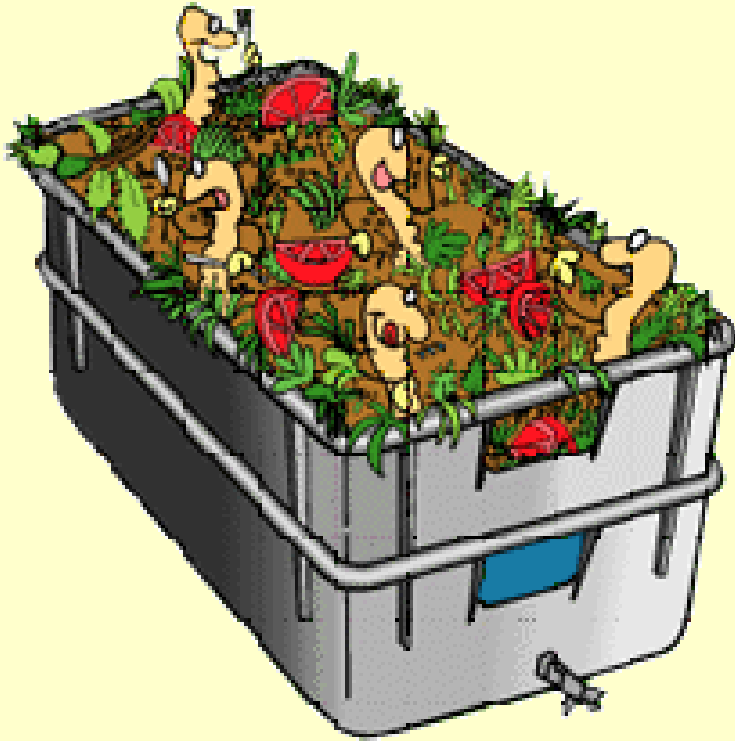
- Cocoons contain 2-5 worms
- Hatch depends on temperature
- New worms are light colored
- Size at hatch - about the thickness of a piece of sewing thread



# Worm Bin Environment

- Moisture – Keep moist about 80%
- Optimum temperature range 40F>86F
  - They can tolerate temps in the 90's if shaded
- Food – Right amount for worms to digest
- Darkness – They flee from light
- Oxygen – Holes in bin & fluffy bedding

# Composting Worms...



- Live in top 6"
- Surface area more important than depth
- Worms need time to adjust to a new home
- They may try to escape!

# Worm Bin Systems



Plastic Storage Tub



“Worm Factory 360”  
(Cut Away View)

# Weight of Worms per Bin Size



8 Gallon Bin  
1/4 LB Package  
~ 250 Worms  
1/4 LB. Food



10 Gallon Bin  
1/2 LB Package  
~ 500 Worms  
1/2 LB. Food



14+ Gallon Bin  
1 LB Package  
~ 1000+ Worms  
1 LB. Food

# Constructing a Worm Bin

- 2-18 (+) Gallon Rubber Storage Bins/Dark Color;
- Drill 10-20, 1/8 >1/4 inch holes in top bin lid;
- Drill 7 holes in each side & 2 each end of the top bin body – above bedding line;

If using 2 bin stacked system:

- Drill 8, 1/8 inch holes in top bin bottom;
- Set 2>4 “spacers” in bottom of the bottom bin; worm tea will collect in this void.



Newspaper & Cardboard



Shredded Leaves



Garden Soil



Alfalfa Hay



Egg Cartons

# WHAT TO FEED YOUR WORMS:



## ***Yummy!***



*Anything green - especially the leafy stuff!*



*Fruits*



*Vegetables*



*Coffee grounds & filters*



*Tea bags*



*Brown Paper, Black & White newspaper*



*Eggshells - crushed; adds calcium*

## ***Yucky!***

*Citrus - no orange, lemon or lime*



*Fats, Oils, Salad dressing*



*Breads & Cereals - can attract gnats*



*Salts - no seasoned food*



*Meat - creates odors*



*Sugars - no processed food*



*Garlic, Onions - creates odors*





# Worm Bin Preparation

1. 3" layer of damp shredded cardboard in bottom;
2. Thin layer of food (suggested vegetable & fruit);
3. Another layer of damp shredded cardboard;
4. Another layer of food...;
5. Thin layer of compost or garden soil;
6. Apply enough water to moisten the top layer;
7. Apply last layer of shredded dry cardboard;
8. Now close the system with bin lid and let it sit for a week before adding your worms!



# Kitchen Scraps – Feed the Worms!



Tip: Small chunks are better – break down faster!

Worms process  $\frac{1}{2}$  their weight in food per day.

# Adding Kitchen Scraps & Bedding

- Have the worms consumed existing food?
- Distribute food around the bin – the worms will find it!
- Add bedding and moisten as necessary.



# Egg Shells for Gizzard Grit!

- Rinse egg shells
- Store shells in an open container to keep them dry
- Crush into smaller bits
- Microwave 2-3 minutes
  - Kills bacteria
- Use coffee grinder to reduce to power form
- Add 1-2 tablespoons of egg shell grit to bin when feeding
- Egg shell calcium buffers acidity



# Harvesting Worm Castings



10 gallon bin can  
produce 3-5 gallons  
of worm castings  
every 3-6 months.

Harvest castings and replenish bedding often – they can't live in their own poop!

# Harvesting Worm Castings - Bin Method

- Stop feeding several days prior to harvest;
- Gently push bin contents to one side;
- Add new moist bedding & food to the exposed side;
- Wait several days – worms will move into new bedding area searching for food;
- Cover the new side, focus light of the other side;
- Harvest “Worm Castings”;
- Sift out adult worms, worm hatchlings and cocoons;
- Redistribute bedding & food in the bin!

# Dump, Pile & Sort Method...





# Screens for Separating Worms from Castings

- Purchase ready built soil screen system – fine for small bins
- Build your own screen box
  - 1/4 inch allows some worms plus juveniles and eggs to fall through
  - 1/8 inch catches more worms from falling through
  - You will be picking out worms & eggs from the final screening



# Storing Worm Castings



**NEW!**

Completely revised  
after 100,000 copies sold

How to set up and  
maintain a worm  
composting system



# WORMS

## Eat My Garbage

Second Edition

by  
Mary Appelhof

- Recycle kitchen food waste
- Save energy
- Produce fertilizer for  
house plants and garden
- Grow fishing worms
- Reduce waste disposal cost



# Where to purchase “Red Wigglers”



[texaswormfarm.com](http://texaswormfarm.com)



Our Mission  
at Texas Worm Ranch is to:

- Reduce the local waste stream. . .
- Create beautiful and safe  
landscapes and gardens. . .
- Promote the use and enjoyment  
of local, sustainable  
and organic agriculture.

**CONTACT US**



[txwormranch.com](http://txwormranch.com)

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