



**ONE SEED PIMA COUNTY -  
KALA CHANA GARBANZO BEAN**

# Brandon Merchant

- Owner of Southwest Victory Gardens
- Pima County Certified Master Gardener
- SmartScape Certified
- Former President of Tucson Organic Gardeners





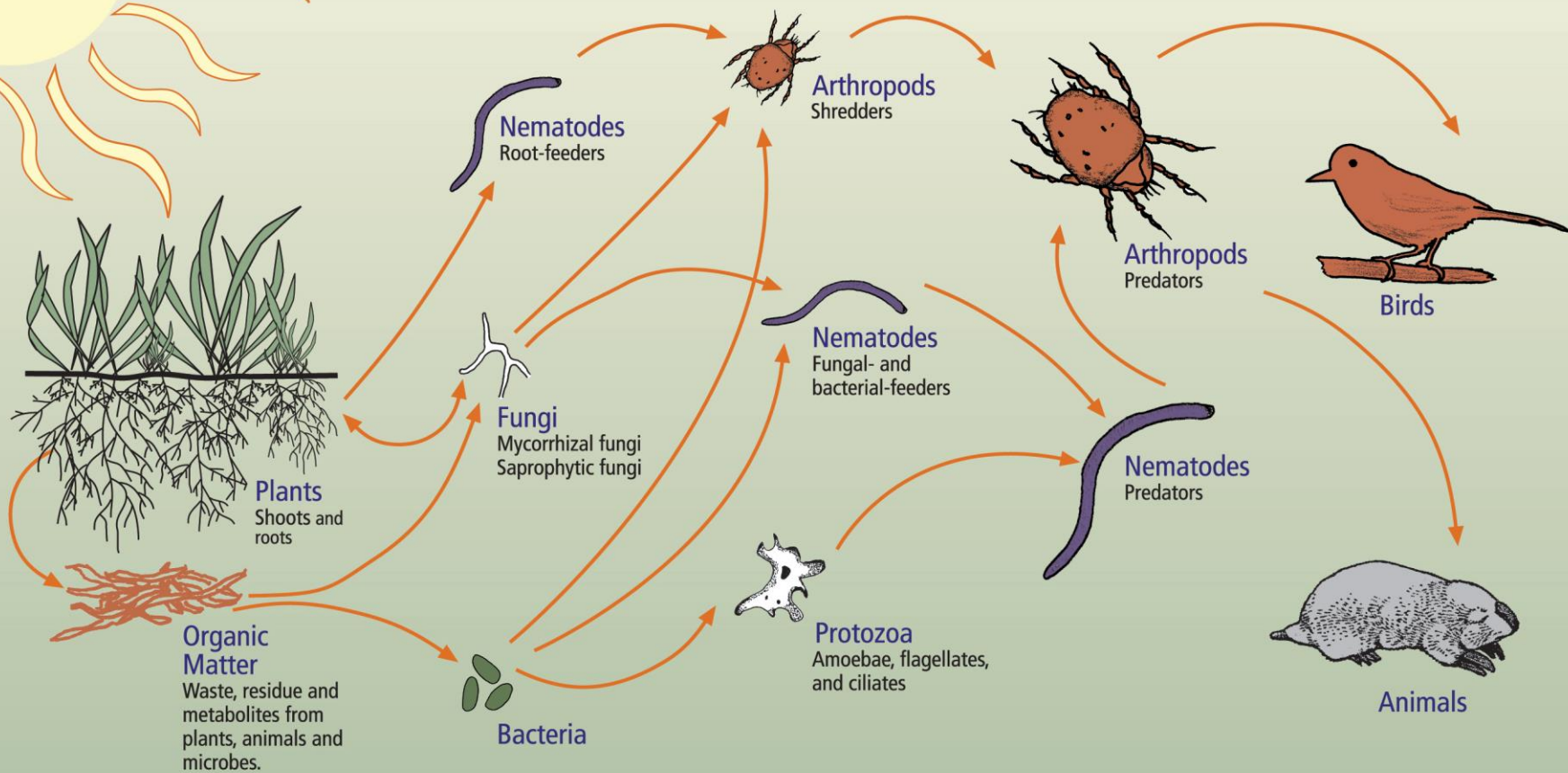
[WWW.SOUTHWESTVICTORYGARDENS.COM/DOCUMENTS](http://WWW.SOUTHWESTVICTORYGARDENS.COM/DOCUMENTS)

# Our Philosophy

- Healthy soil encourages healthy plants
- Healthy plants require fewer pesticides and fertilizers (inputs)
- Garden with our climate not against it
- Reduce water usage
- Limit external inputs
- Encourage a natural ecosystem



# The Soil Food Web



**First trophic level:**  
Photosynthesizers

**Second trophic level:**  
Decomposers  
Mutualists  
Pathogens, Parasites  
Root-feeders

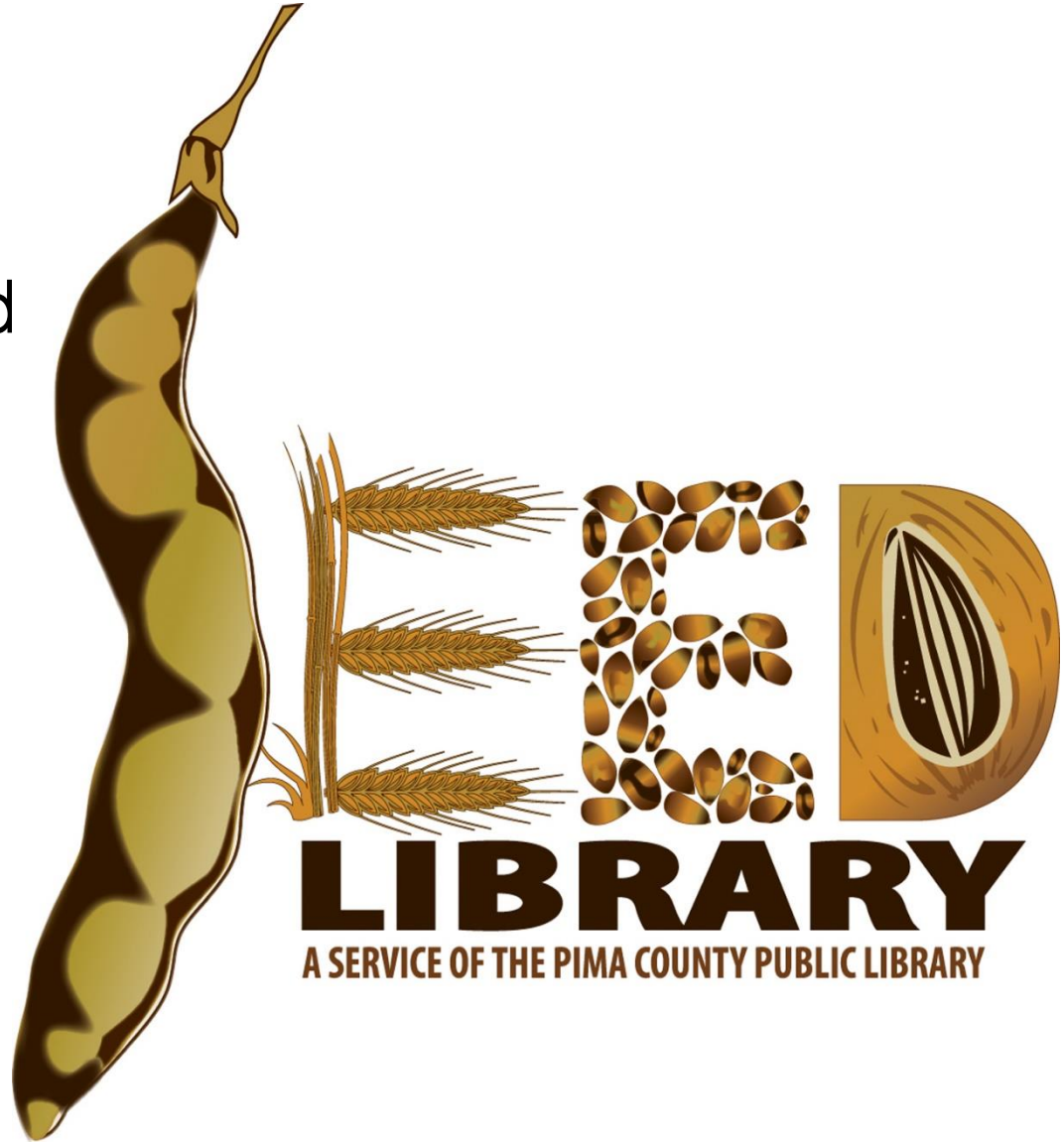
**Third trophic level:**  
Shredders  
Predators  
Grazers

**Fourth trophic level:**  
Higher level predators

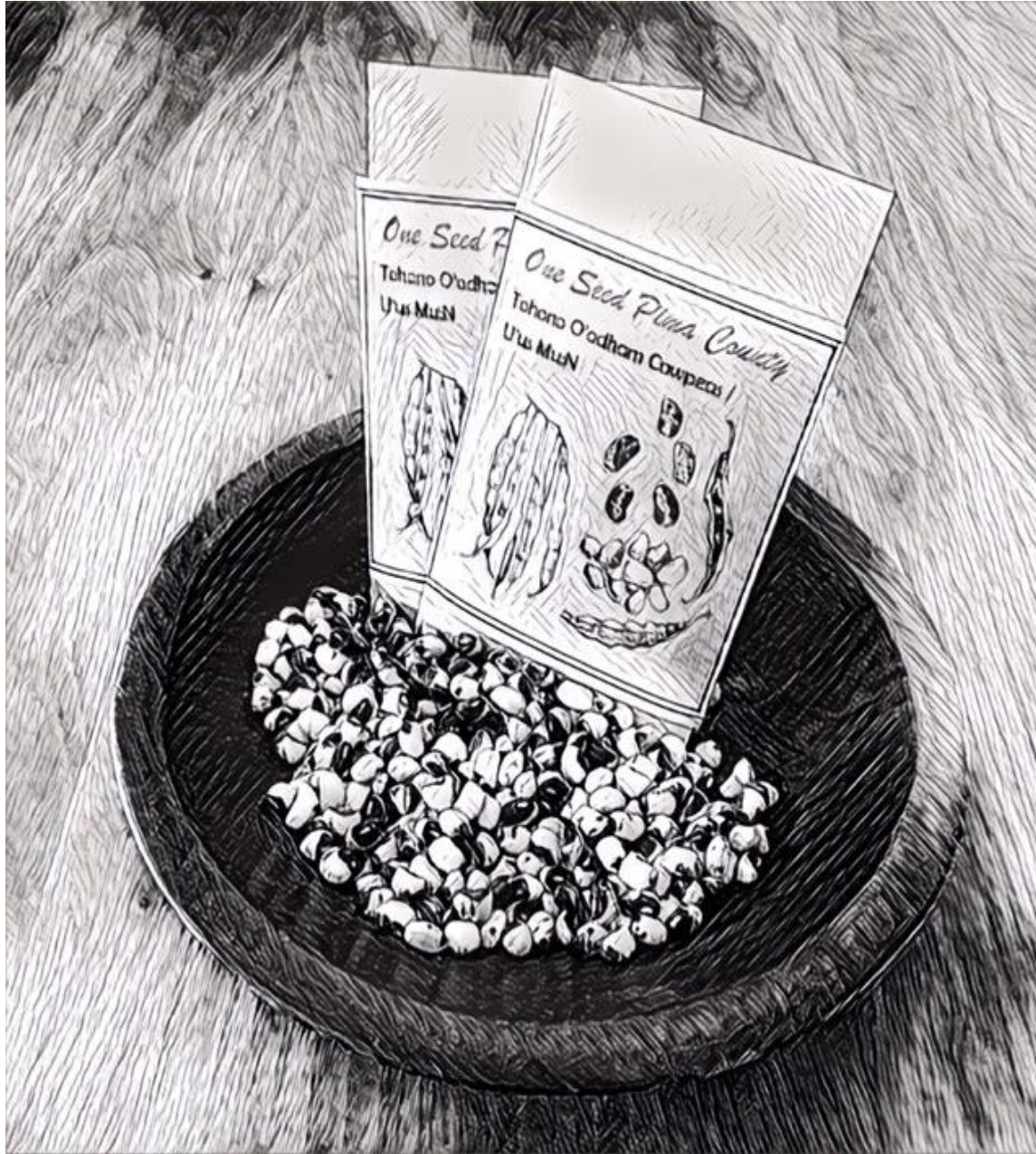
**Fifth and higher trophic levels:**  
Higher level predators

# Pima County Seed Library

- OP and Heirloom Seed Collection
- Borrow and Return Saved Seed
- Better Acclimation
- More Diversity
- Community Education



# One Seed Pima County



- County Wide Seed Saving Initiative
- Community Involvement
- Grow, Harvest, Appreciate

# Our Rich Agricultural History



- 4,000 years of Farming
- Bio-Diverse
- Indigenous Cultures
- UNESCO City of Gastronomy



# What is a “seed”?



**SAVE  
SEED  
CORN  
NOW!**

An alarming shortage exists!  
The quality is poor  
The situation is everywhere the same—  
Very little SEED can be purchased.

1. *Save every good ear.*
2. *Test each ear.*
3. *Cure in a dry place.*
4. *Plant seed grown near home.*
5. *Save your surplus.*

If you buy seed, insist on a statement showing county and state where grown, and percentage of germination

Unless small supplies can be collected from numerous farmers, many counties in the Northwest will have nothing to plant in the spring. Report any surplus to your bank, which will arrange for its sale at a good price, or write to the

**FEDERAL RESERVE BANK  
OF MINNEAPOLIS.**

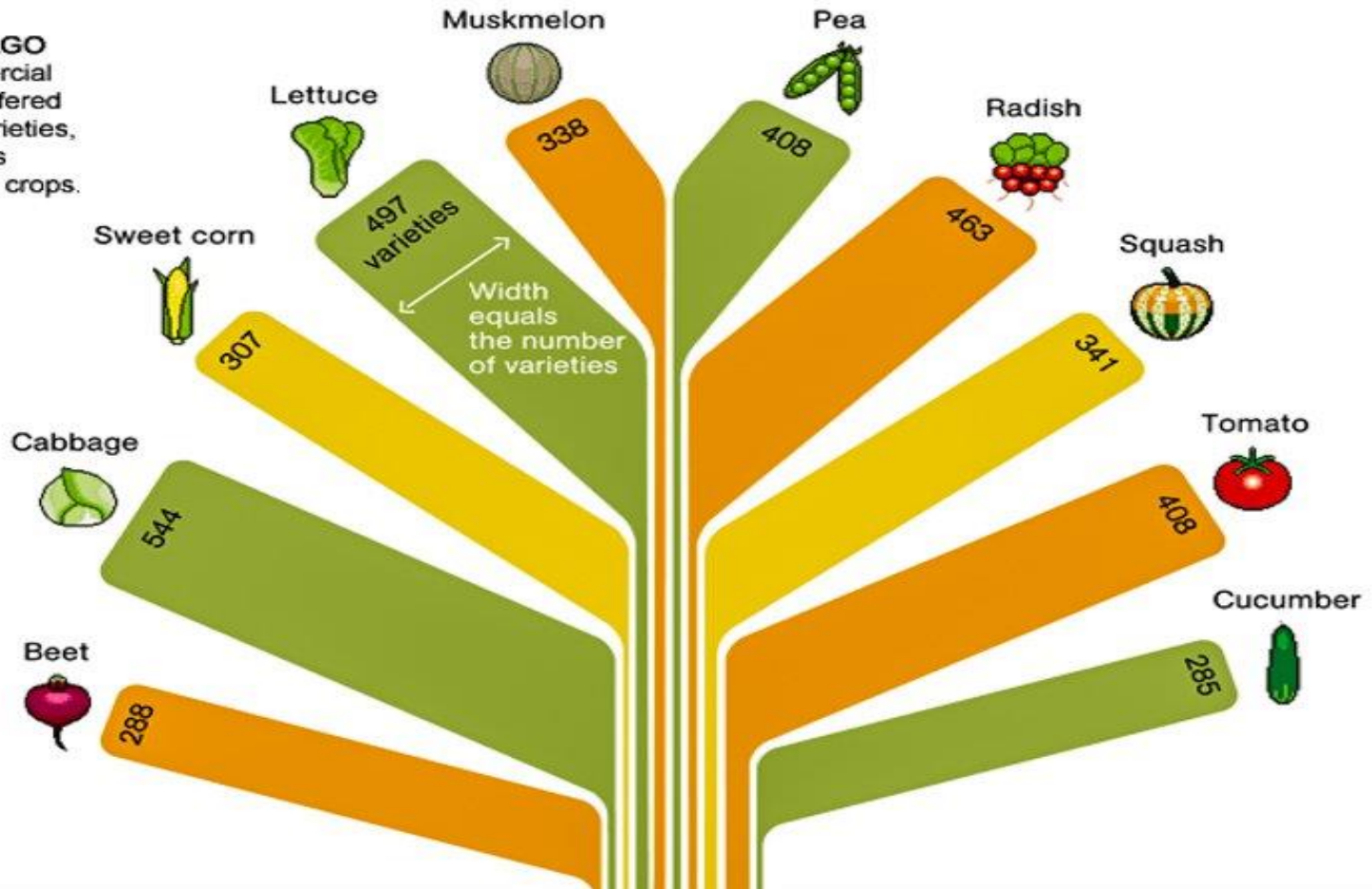
- **Seeds are hibernating embryos**
  - Seeds are baby plants.
  - It's Alive!
  - Cool, dark, dry
  - Healthy Seeds = Healthy Plants

# Why Save Seeds?

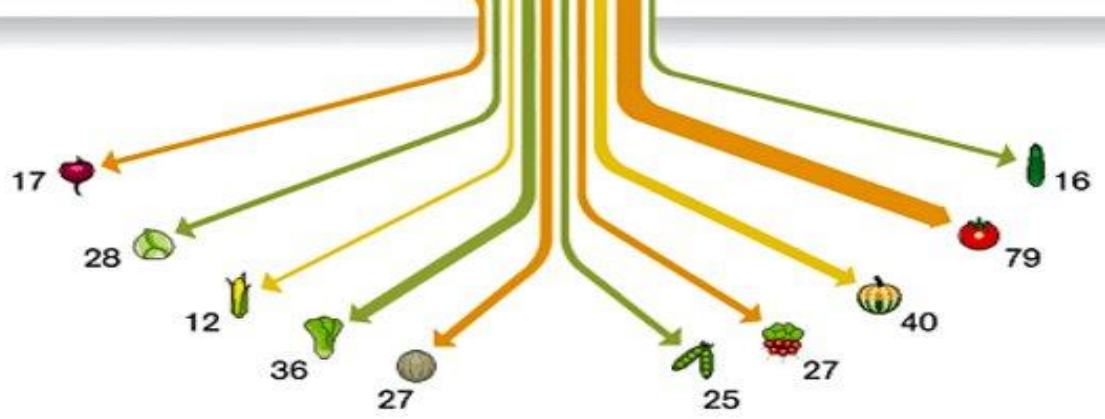
- Traits
- Diversity
- Vigorous Plants
- Save \$\$\$
- Preservation
- It's Fun!



**A CENTURY AGO**  
 In 1903 commercial seed houses offered hundreds of varieties, as shown in this sampling of ten crops.



**80 YEARS LATER**  
 By 1983 few of those varieties were found in the National Seed Storage Laboratory.\*

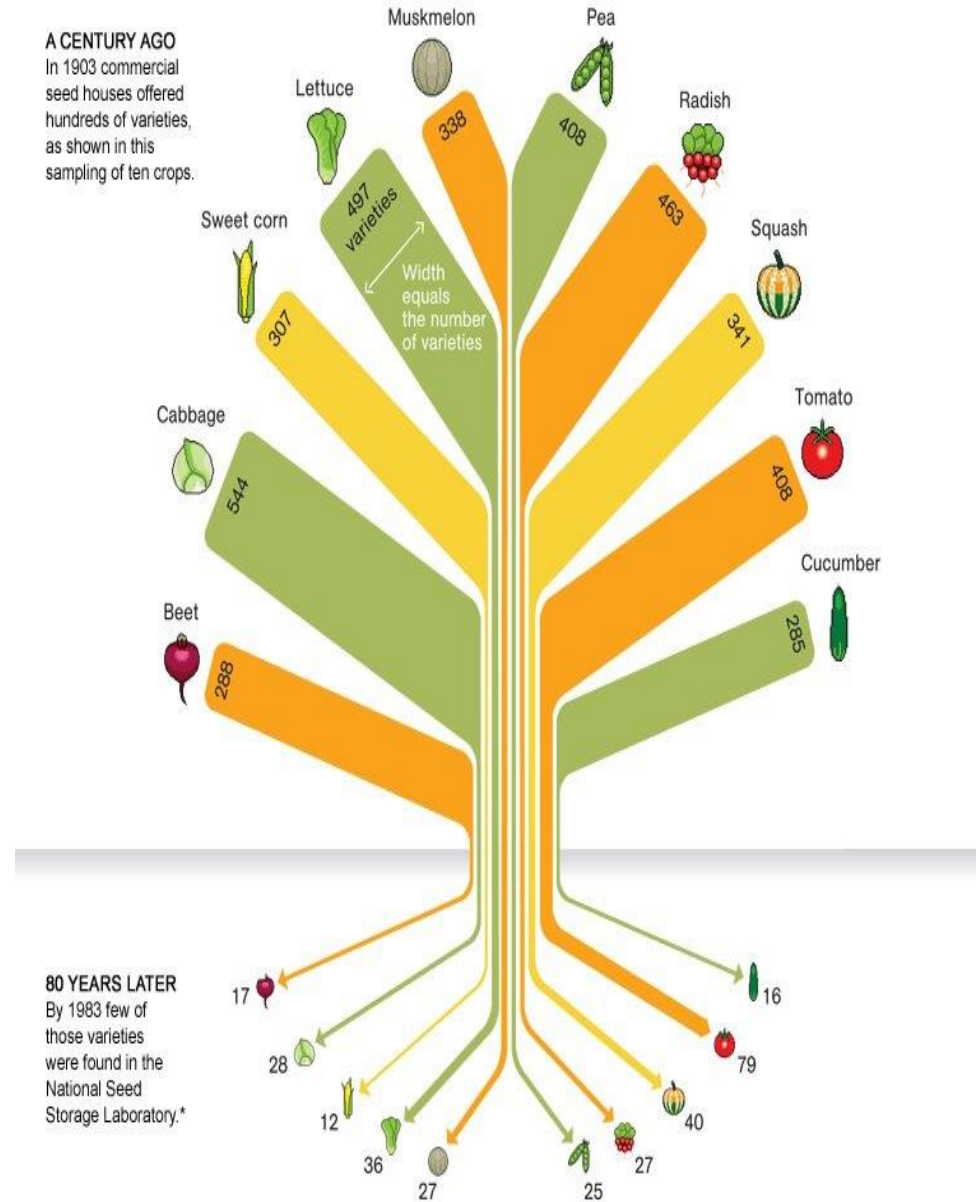


\* CHANGED ITS NAME IN 2001 TO THE NATIONAL CENTER FOR GENETIC RESOURCES PRESERVATION

JOHN TOMANIO, NGM STAFF. FOOD ICONS: QUICKHONEY SOURCE: RURAL ADVANCEMENT FOUNDATION INTERNATIONAL

# Importance of Seed Saving

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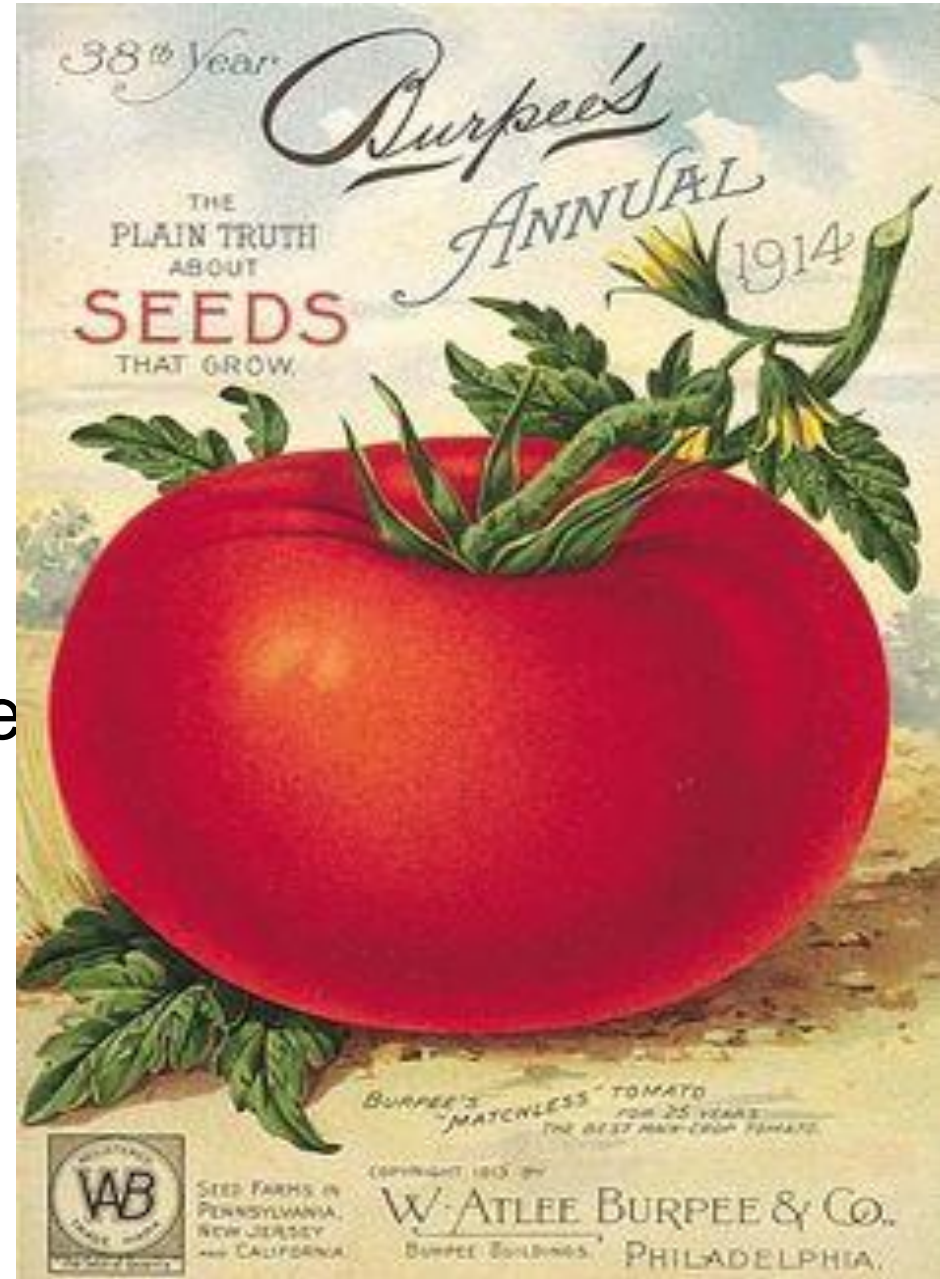
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SOURCE: RURAL ADVANCEMENT FOUNDATION INTERNATIONAL

- Specific Traits
- Diversity
- Adaptability
- Cost Savings
- Cultural Significance

# Traits to Look For

- Only the strong survive
- Desert adaptation:
  - Early maturity
  - Slow to bolt
  - Drought/Heat tolerance
- Disease resistance
- Taste
- Appearance

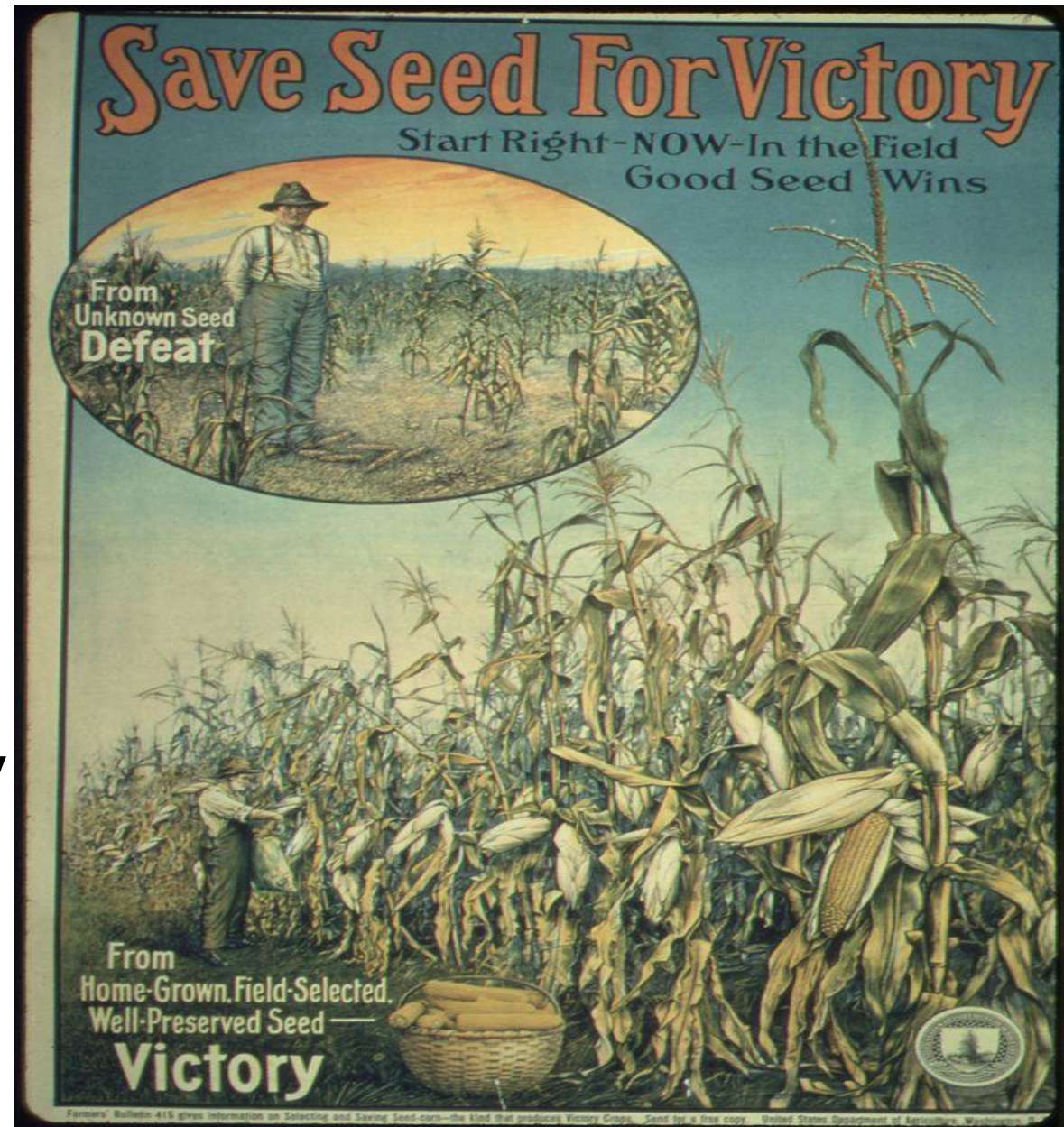


# How to Save Seed



- Attend Classes
- Read Books
- Start Simple
- Acquire Supplies

# Growing crops for seed



- What is Different?
  - Takes Longer
  - More Space
  - More Tools
  - New Terminology

# Planting for Seed Saving

## The Fruits of Victory



## Spacing is Key:

- Requires more space
- Takes longer to mature
- Multiple plants
- Be wary of inbreeding depression

Write for Free Book to  
**National War Garden Commission**  
Washington, D. C.  
Charles Lathrop Pack, President      P.S. Ridsdale, Secretary



# Avoid Unwanted Cross Pollination

- Isolation is key
  - Distance
  - Physical Barriers
  - Time
- Hand Pollinate



# Harvesting, cleaning, & storing

"We'll have lots to eat this winter, won't we Mother?"

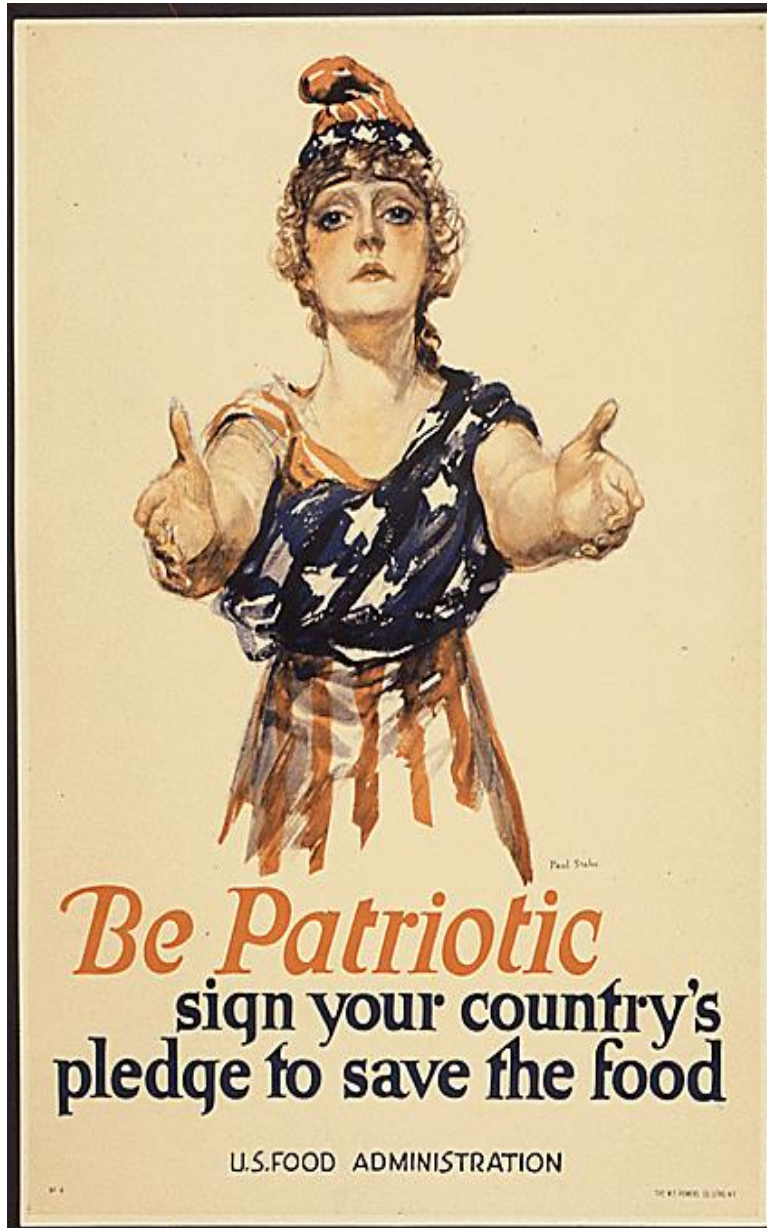


**Grow your own  
Can your own**

## Wait, Wait, Wait:

- Mature plants only
- Takes longer to mature
- New Equipment
- Save and share only the best
- Cool, Dark, and Dry

# Get Started Today!



## The Easiest “seeds” to Save:

- Annuals, perfect flowers, self pollinating:
  - Garlic, I'toi Onion, Legumes, Lettuce, Pea, Tomato, Wheat, and Wildflowers

# Get Started Today!

## A little more effort:

- Annuals, require separation
- Corn, cucumbers and melons, radish, Spinach, pumpkin and squash.



# Get Started Today!



## Most Difficult:

- Biennials and Perennials
  - Beets, cabbage family, carrot, onion, turnip, onion, Swiss chard.

# Types of Beans



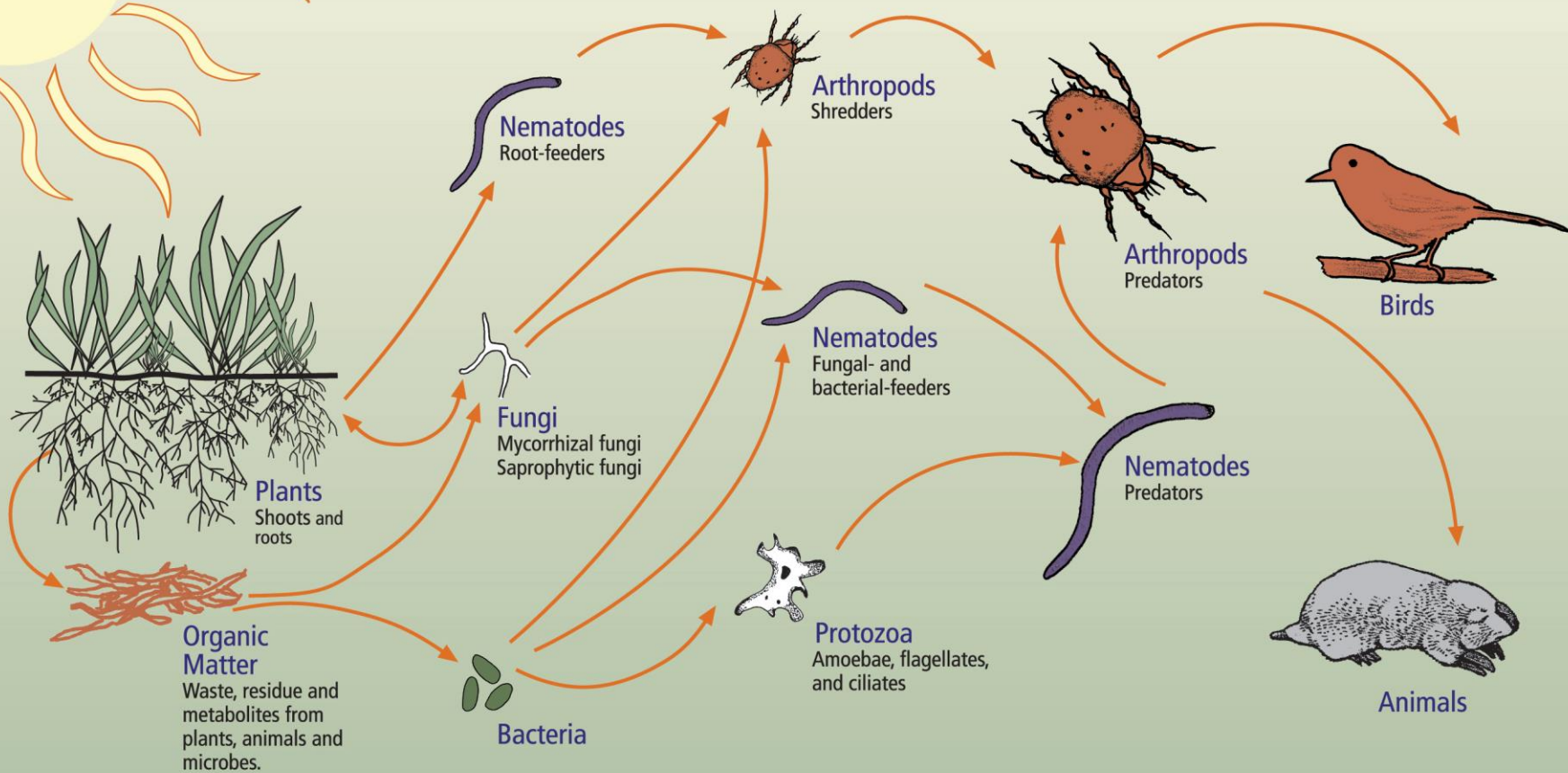
- Common
- Tepary
- Cowpea
- Runner
- Soybean
- Fava
- Lima
- Lentil
- Many More!

# Companion Planting

- Insect Control
- Nurse Cropping
- Trap Cropping
- Fertilizers



# The Soil Food Web



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Photosynthesizers

**Second trophic level:**  
Decomposers  
Mutualists  
Pathogens, Parasites  
Root-feeders

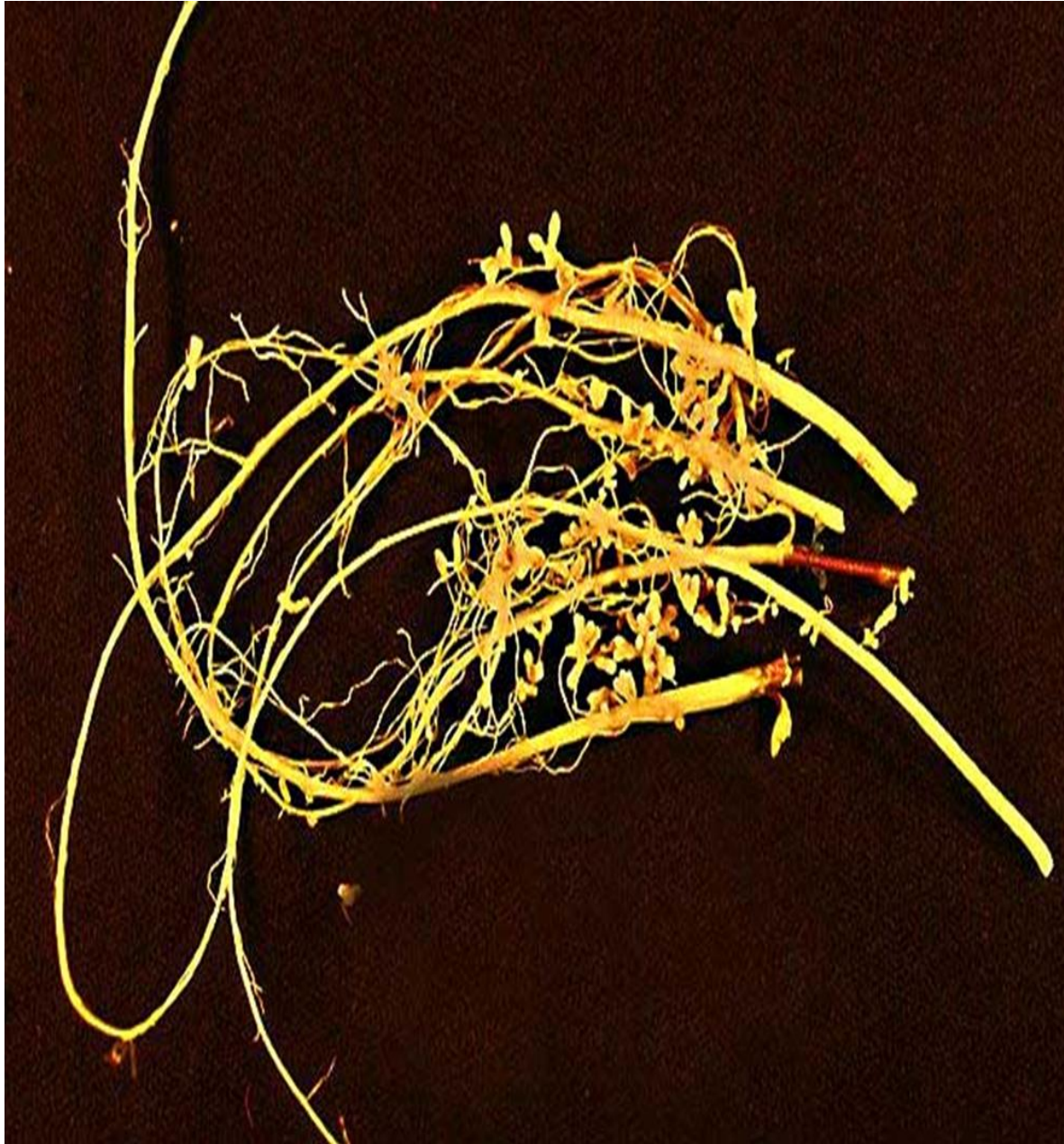
**Third trophic level:**  
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Predators  
Grazers

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**Fifth and higher trophic levels:**  
Higher level predators



# Importance of Legumes



- Crop Rotation
- Nitrogen Fixation
- Rhizobia

# Prokaryotes in the nitrogen cycle

Atmospheric nitrogen ( $N_2$ )

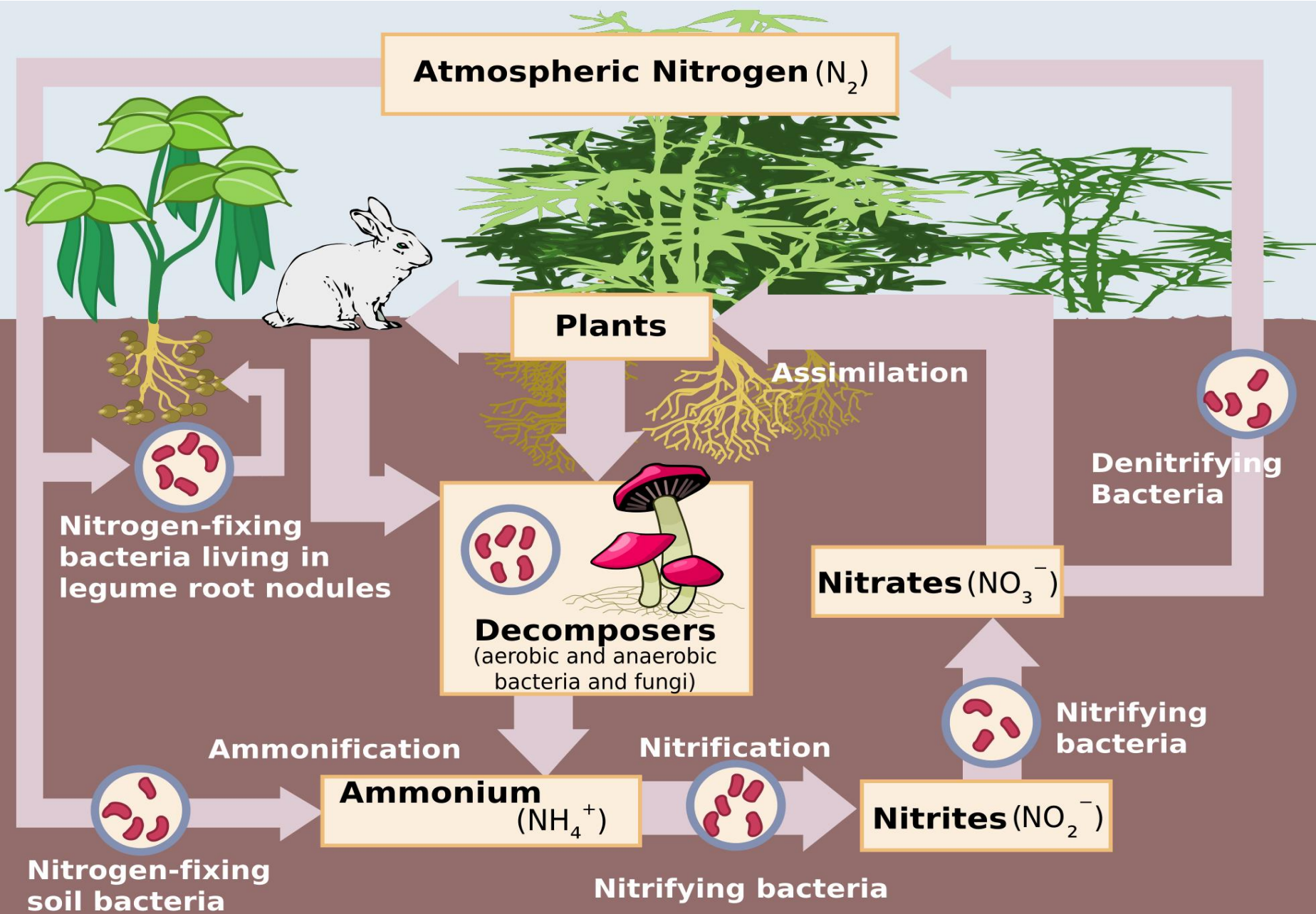
Nitrogen-fixing prokaryotes:  
convert  $N_2$  to ammonia ( $NH_3$ )

Nitrifying prokaryotes:  
convert  $NH_3$  to nitrites ( $NO_2^-$ )  
and nitrates ( $NO_3^-$ )

Denitrifying prokaryotes:  
convert nitrates to  $N_2$



# Nitrogen Cycle



# How to Build Healthy Soils

- Eliminate Synthetic Pesticides/Fertilizers
- Encourage the Soil Food Web
- Use Compost and Compost Teas
- No Till or Low Till
- Use Supplements if Needed
- Grow Roots Not Plants





Tucson  
Organic  
Gardeners

soiling our hands since 1971

# TUCSON ORGANIC GARDENERS PLANTING GUIDE

FOR TUCSON AND THE LOW DESERT

Jan 1 – Feb 15

**FROM SEED**

Arugula, Broccoli, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Collards, Dill, Fennel, Kale, Lettuce, Mustard Parsley, Bulb Onion (See Graphic), Potato

**FROM SEEDLING TRANSPLANT**

Artichoke, Broccoli, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Collards, Dill, Fennel, Kale, Lettuce, Mustard, Parsley, Spinach, Swiss Chard.

April 15 – May 31

**FROM SEED**

Amaranth, Basil, Cantaloupe, Cowpea, Cucumber, Malabar Spinach, Melon, Okra, Sorghum, Sweet Potato Slips, Summer Squash, Watermelon

**FROM SEEDLING TRANSPLANT**

Basil, Eggplant, Pepper

July 15 – August 31

**FROM SEED**

Bush Beans, Pole Beans, Corn (all types), Cowpea, Cucumber, Cantaloupe, I'tois Onion (See Graphic), Pumpkin, Sorghum Summer and Winter Squash

**FROM SEEDLING TRANSPLANT**

Tomato (July 15 - Aug 15)

Oct 15 - Nov 15

**FROM SEED**

Beets, Carrots, Garlic, Greens, Lettuce, Mustard, Pea, Radish, Turnip, Wheat (December – January)

**FROM SEEDLING TRANSPLANT**

Broccoli, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Collards, Dill, Fennel, Kale, Lettuce, Mustard Parsley, Spinach, Swiss Chard

LATE WINTER

SPRING

LATE SPRING

EARLY SUMMER

MONSOON

EARLY FALL

LATE FALL

March 1 – April 15

**FROM SEED**

Amaranth, Basil, Bush Bean, Corn (Sweet), Cucumber, Jerusalem Artichoke, Malabar Spinach, Melon, Pumpkin, Sesame, Sorghum, Summer and Winter Squash, Tobacco, Watermelon

**FROM SEEDLING TRANSPLANT**

Basil, Eggplant, Pepper, Tomato, Tomatillo

June 1 – June 15

**FROM SEED**

Pole Beans, Cantaloupe, Cowpea, Melon, Sweet Potato Slips

Sep 1 – Oct 15

**FROM SEED**

Arugula, Beet, Bok Choy, Broccoli, Brussels Sprouts, Cabbage, Carrot, Cauliflower, Celery, Chia, Chicory, Chinese Cabbage, Cilantro, Collards, Escarole, Fava, Garbanzo, Greens, Kale, Kohlrabi, Leek, Lentils, Lettuce, Mache, Mustard, Onion (See Graphic), Parsley, Parsnip, Pea, Radish, Rape, Rutabaga, Turnip, Spinach, Swiss Chard

**FROM SEEDLING TRANSPLANT**

Broccoli, Brussels Sprouts, Cabbage, Chinese Cabbage, Cauliflower, Celery, Cilantro, Dill, Fennel, Kale, Lettuce, Mustard, Parsley, Spinach, Swiss Chard

## ONIONS



**"SHORT-DAY" BULB ONION SETS**

January 1 – February 15

**TOHONO O'ODHAM I'TOIS MULTIPLIER ONION**

July 15 – February 1

**GREEN BUNCHING/SCALLION**

August 15 – February 1



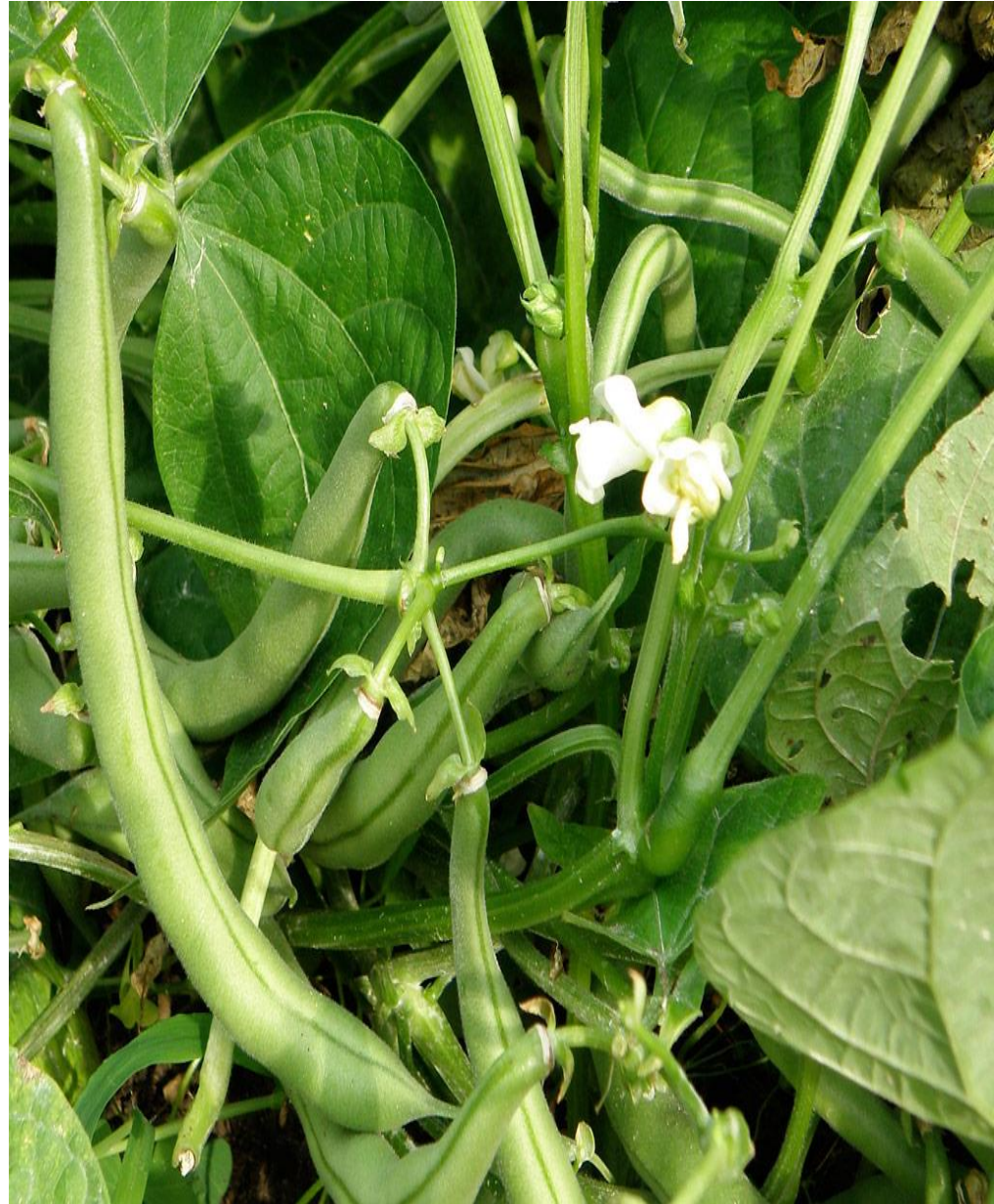
# Cool Season Legumes

- Peas
  - Sugar Snap
  - Snow Pea
  - Shelling
- Fava
- Garbanzo or Chickpea



# Growing Legumes

- Warm Season – Bush Beans, Lima
- Hot Season – Pole Beans & Tepary Cowpeas
- Cool Season – Peas, Garbanzo and Fava



# Varieties of Garbanzo

- Desi:
  - Dark
  - Small
  - Hard Coating
- Kabuli
  - Cream Colored
  - Larger
  - Soft Seed Coat





# Growing Garbanzo



- Easy to Grow
- Plant Early in Fall
- Protect From Frost
- Does Well in Containers

# Harvesting and Saving Seed

- Let Pods Dry
- Harvest before Splitting
- 6 Plants Minimum
- Save Largest Seed
- Keep 10-20%



# Cooking with Chickpeas



- Higher in Oils
- Just Barely Cover
- Add Molasses
- Use Low Gentle Heat
- Soak to Speed Cooking
- Add Baking Soda or Salt

# Awesome Humus



- 1 cup dried chickpeas**
- 2 teaspoons baking soda**
- Juice of 1 1/2 large lemons (about 1/3 cup), more to taste**
- 2 to 4 cloves garlic, grated**
- 1 3/4 teaspoons kosher salt, more to taste**
- 1 cup sesame tahini**
- 1/2 teaspoon ground cumin, more to taste**
- Paprika, for serving**
- Olive oil, for serving**
- Chopped fresh parsley, for serving**





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# RESOURCES

- Seed Libraries
- Native Seeds/Search
- Community Food Bank
- Gardening Clubs
- Local Businesses
- Friends and Family





**THANK YOU!**

**[WWW.SOUTHWESTVICTORYGARDENS.COM](http://WWW.SOUTHWESTVICTORYGARDENS.COM)**

**(520) 576-7085**