



One Seed Pima County:
Tohono O'odham - U'us mu:n Cowpea

Brandon Merchant

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



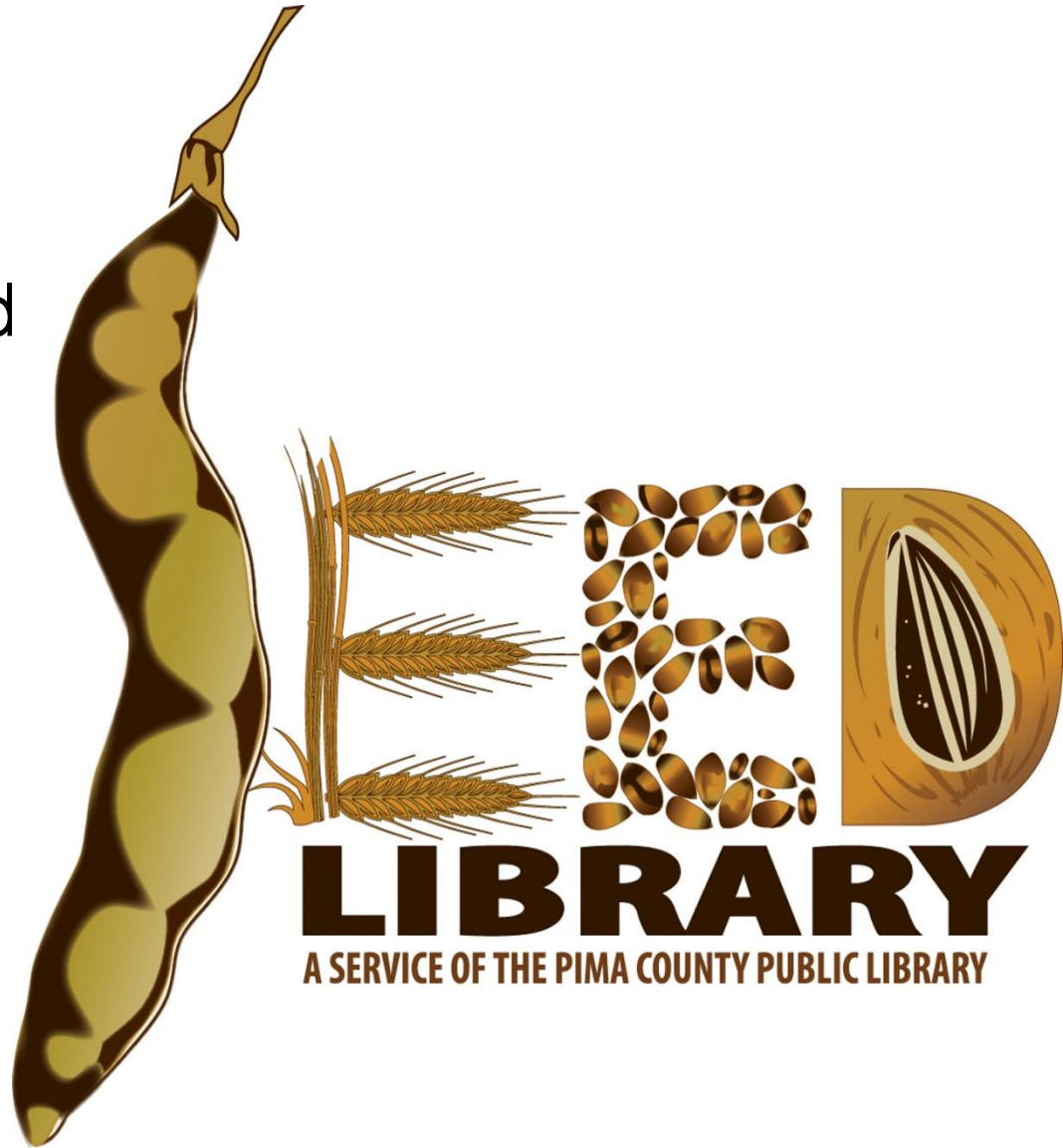
Our Philosophy

- 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

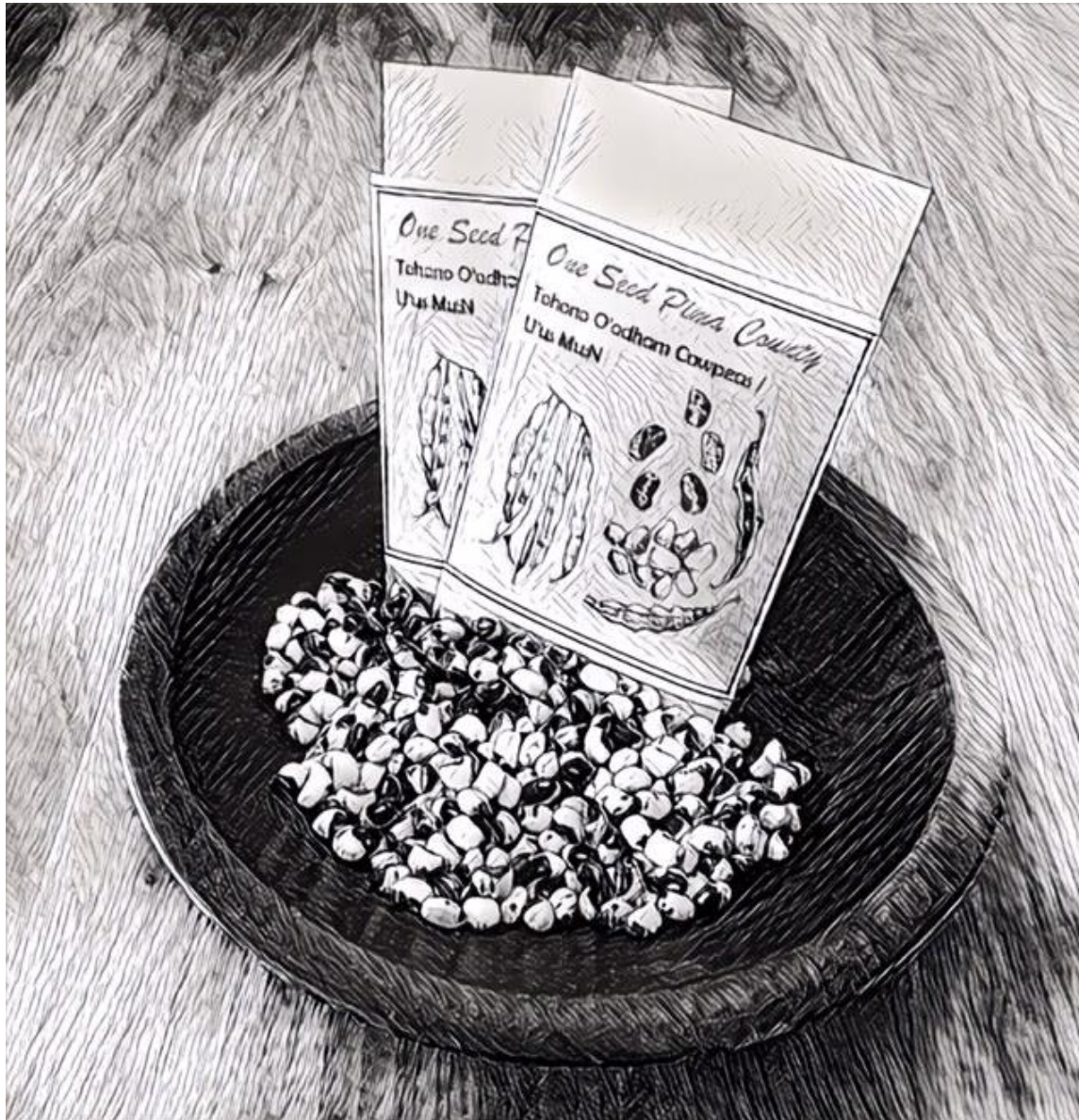


Pima County Seed Library

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



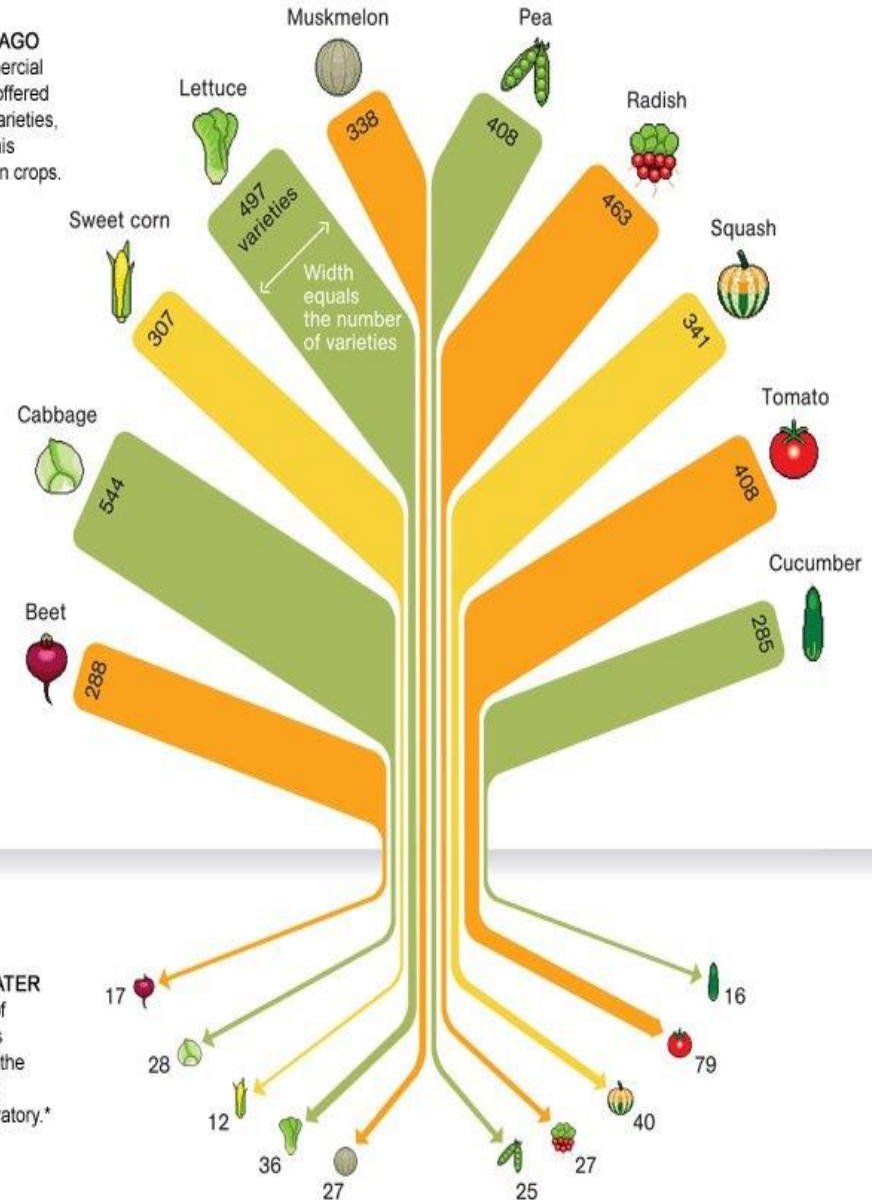
One Seed Pima County



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

Importance of Seed Saving

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

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

Our Rich Agricultural History



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

How to Save Seed

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



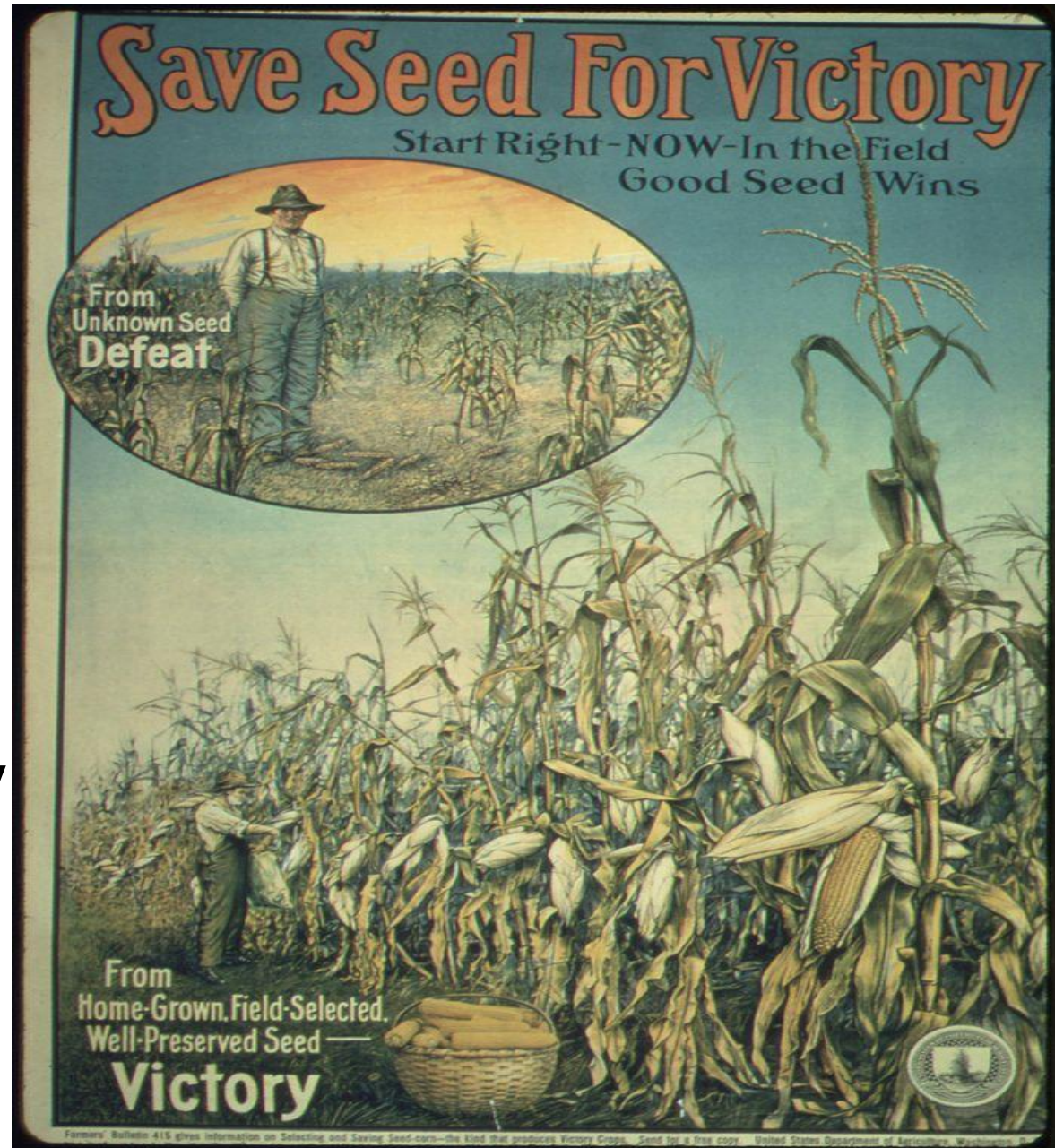
Easy to Save Crops



- Beans and Peas
- Lettuce
- Tomatoes
- Flowers

Growing crops for seed

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





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

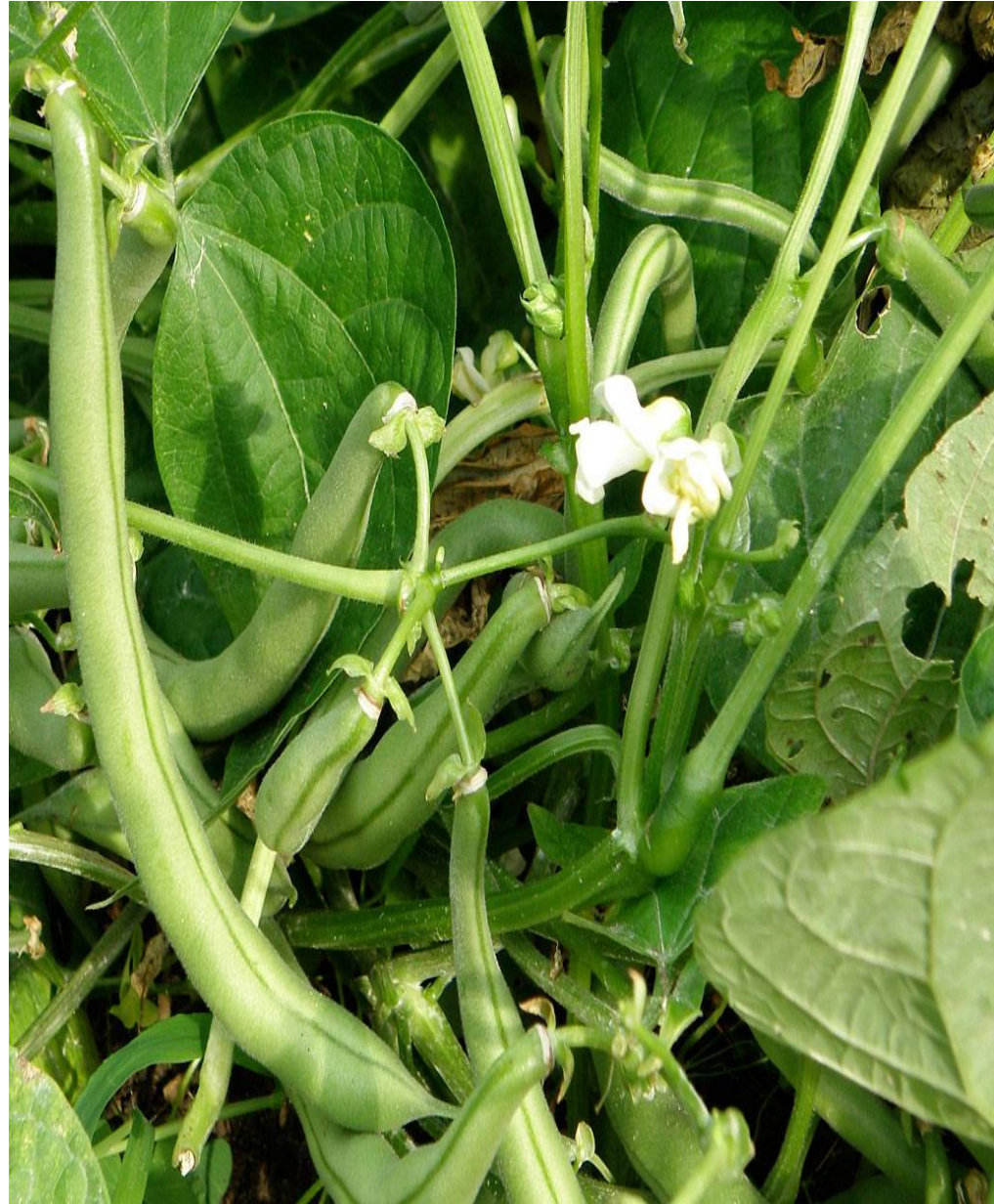
TOHONO O'ODHAM I'TTOIS MULTIPLIER ONION
July 15 – February 1

GREEN BUNCHING/SCALLION
August 15 – February 1



Growing Legumes

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



Types of Beans



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

Varieties of Cowpeas

- Tohono O'Odham
- Bisbee Black
- Texas
- Colossus
- Pima Bajo
- California Black-Eye #5



Growing Cowpeas



- Love the Heat
- Mid-May – Mid-July
- Time with Monsoon
- Use Trellis

Harvest and Saving Seed

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



Cooking with Cowpeas



- High in Protein
- Just Barely Cover
- Use Low Gentle Heat
- Add Molasses to Improve Structure
- Soak to Speed Cooking

Cool Season Legumes

- Peas
 - Sugar Snap
 - Snow Pea
 - Shelling
- Fava
- Garbanso or “Chickpea”



Other Cover Crops



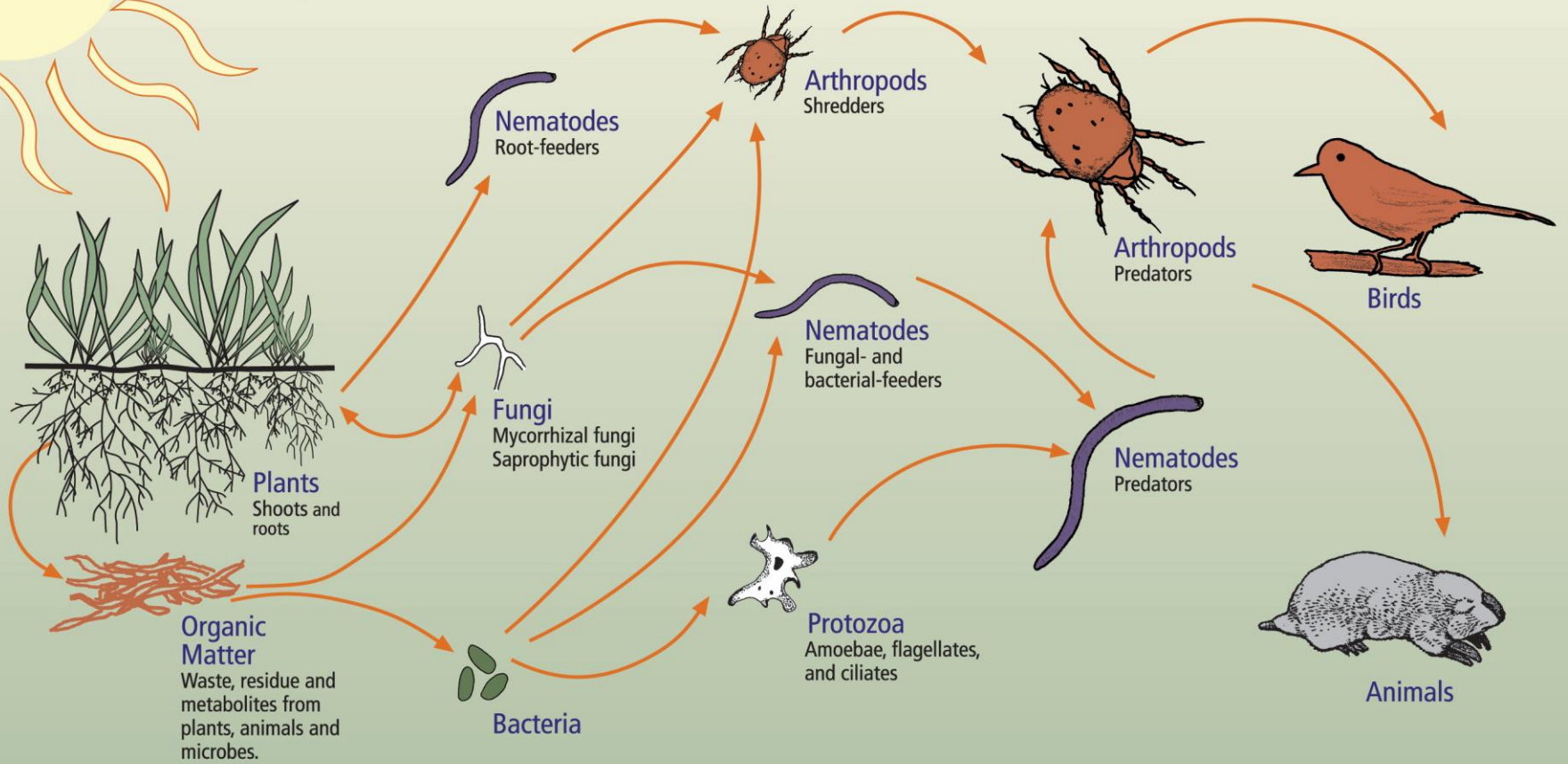
- Vetch
- Alfalfa
- Clover
- Lablab
- Sesbania

Companion Planting

- Insect Control
- Nurse Cropping
- Trap Cropping
- Fertilizers



The Soil Food Web



First trophic level:
Photosynthesizers

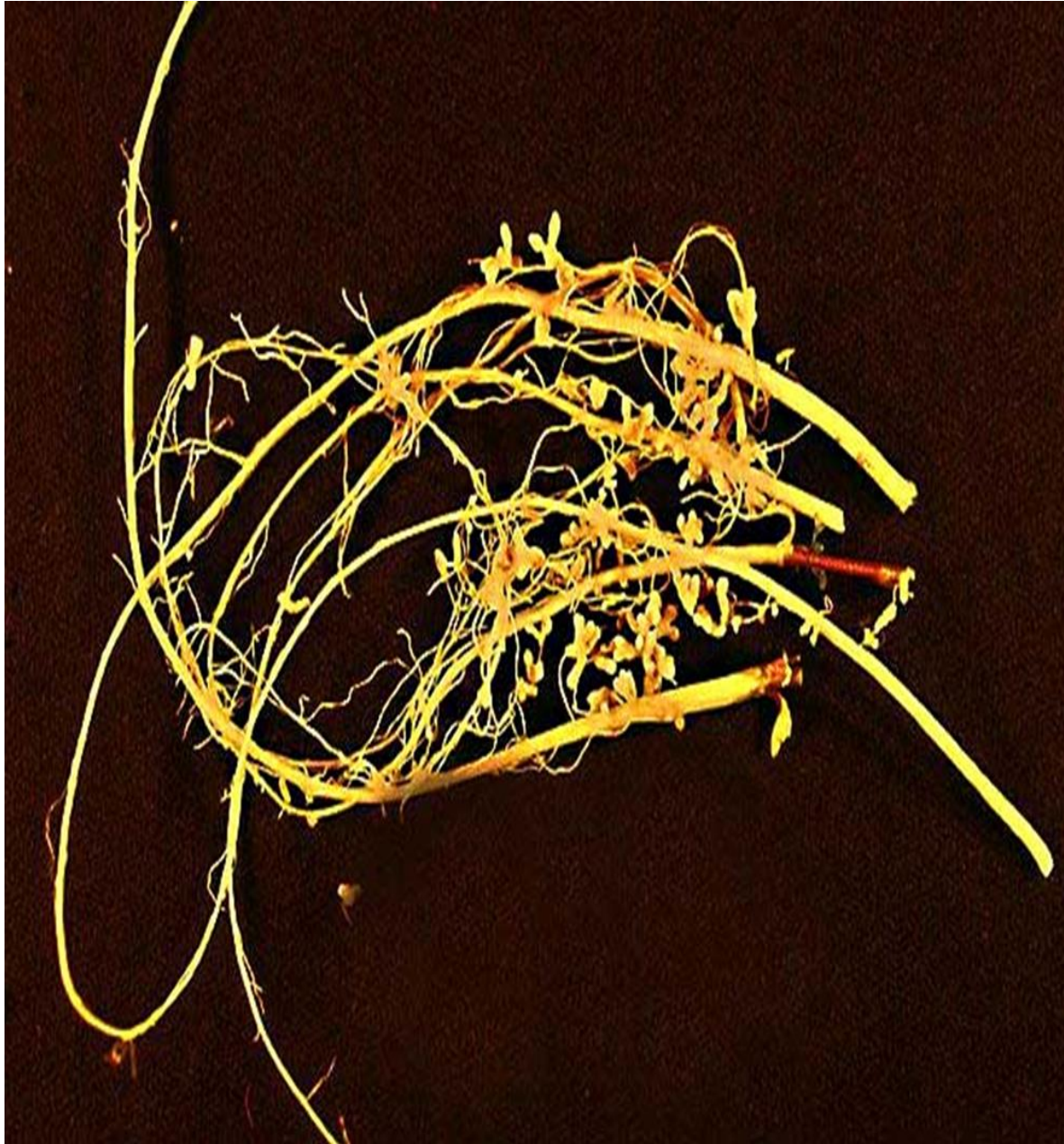
Second trophic level:
Decomposers
Mutualists
Pathogens, Parasites
Root-feeders

Third trophic level:
Shredders
Predators
Grazers

Fourth trophic level:
Higher level predators

Fifth and higher trophic levels:
Higher level predators

Importance of Legumes



- Crop Rotation
- Nitrogen Fixation
- Rhizobia

Prokaryotes in the nitrogen cycle

Atmospheric nitrogen (N_2)



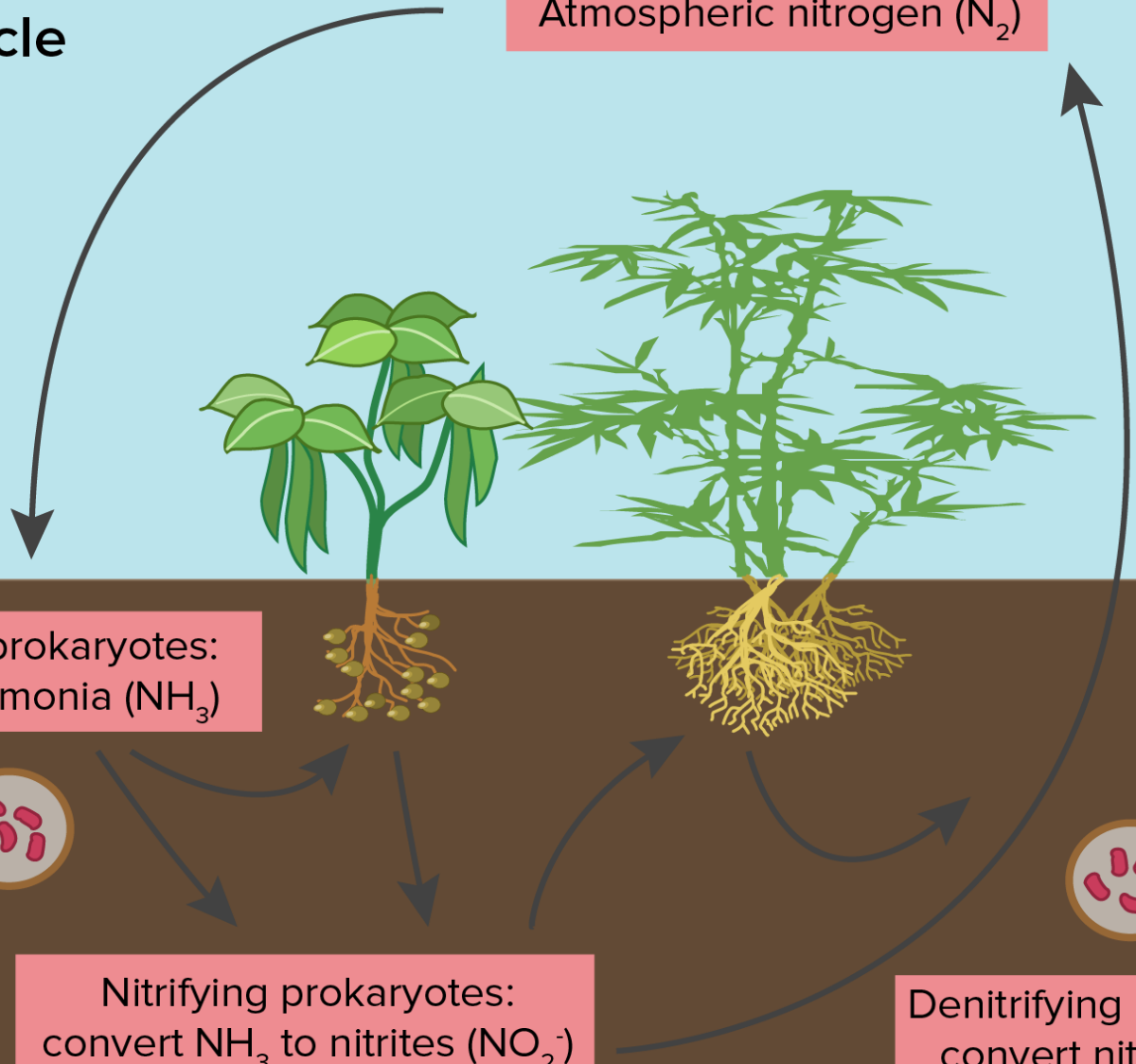
Nitrogen-fixing prokaryotes:
convert N_2 to ammonia (NH_3)



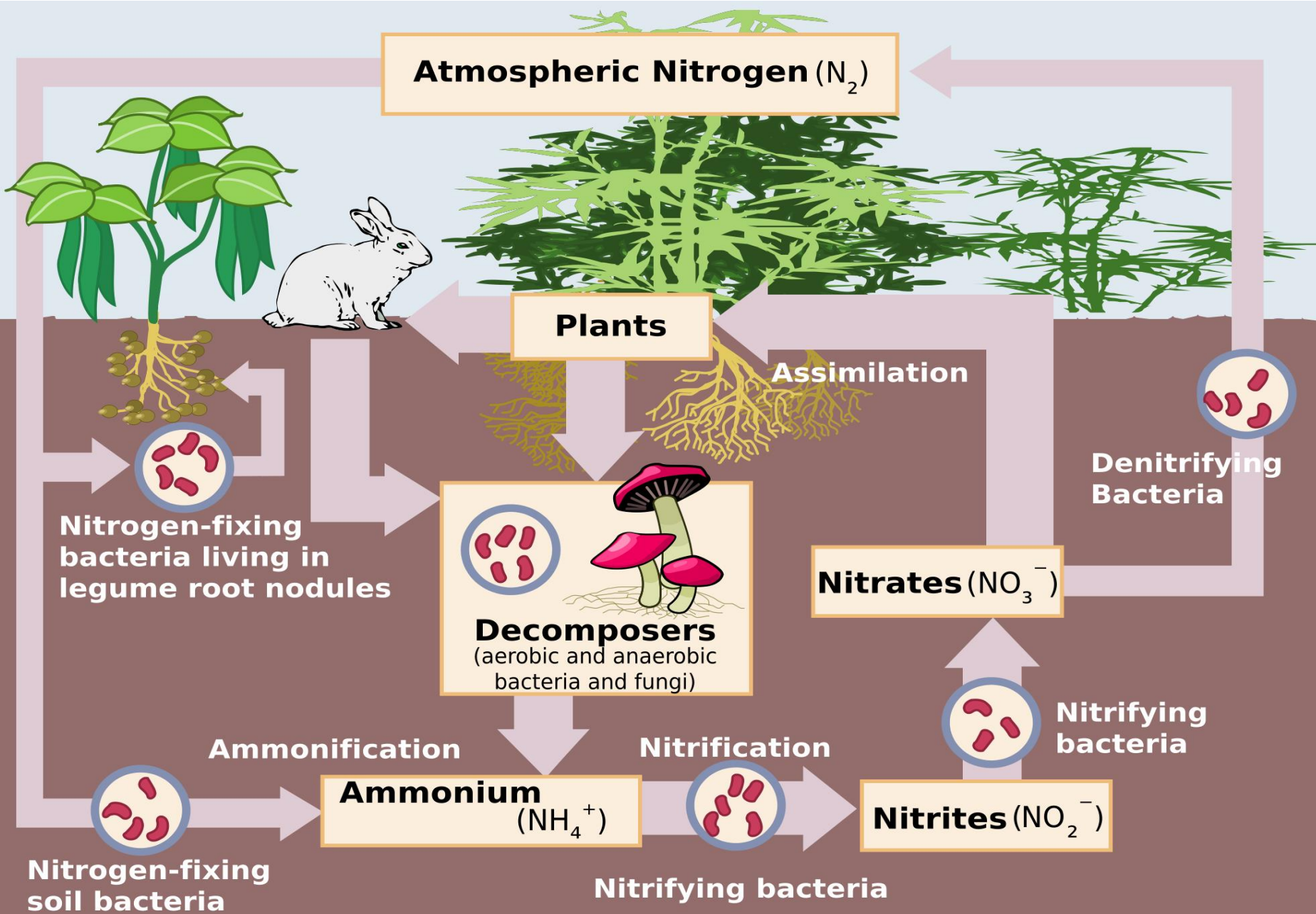
Nitrifying prokaryotes:
convert NH_3 to nitrites (NO_2^-)
and nitrates (NO_3^-)



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



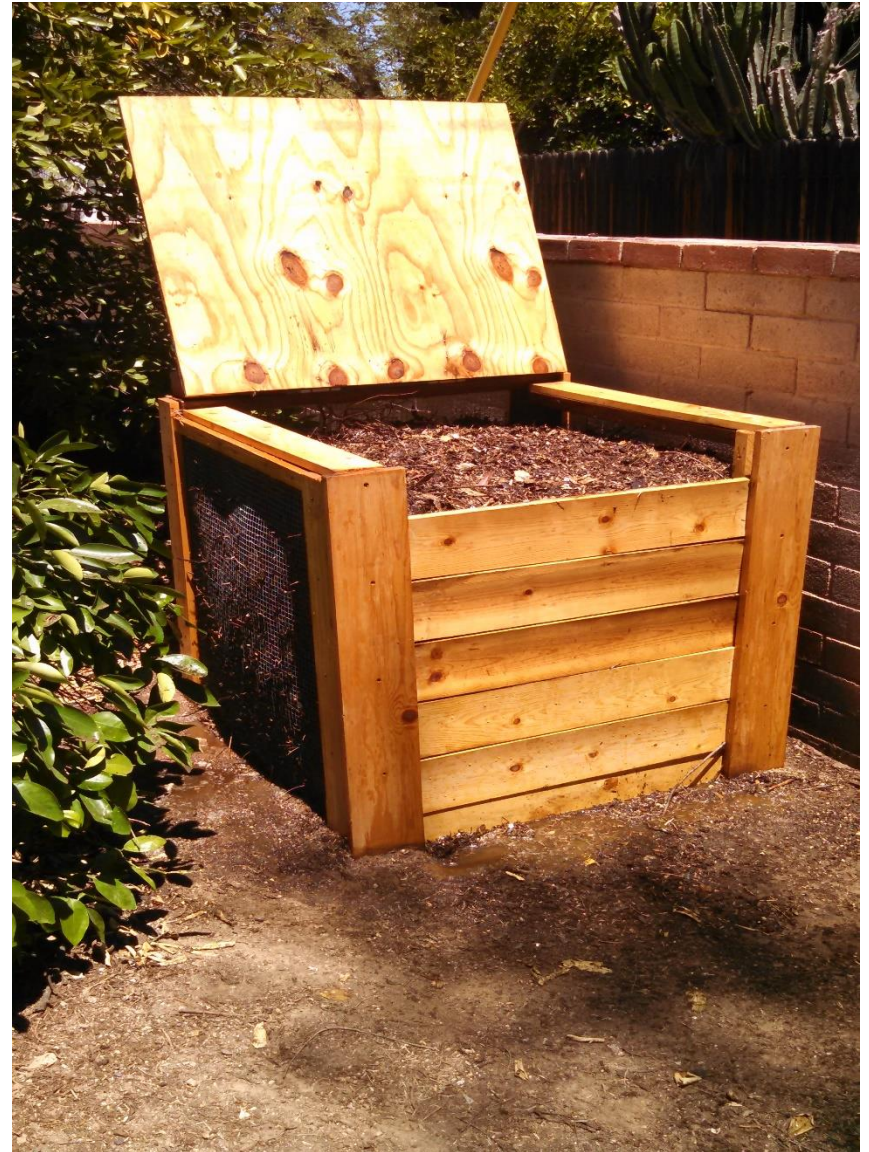
Build the Soil – Mulch and Cover Crop



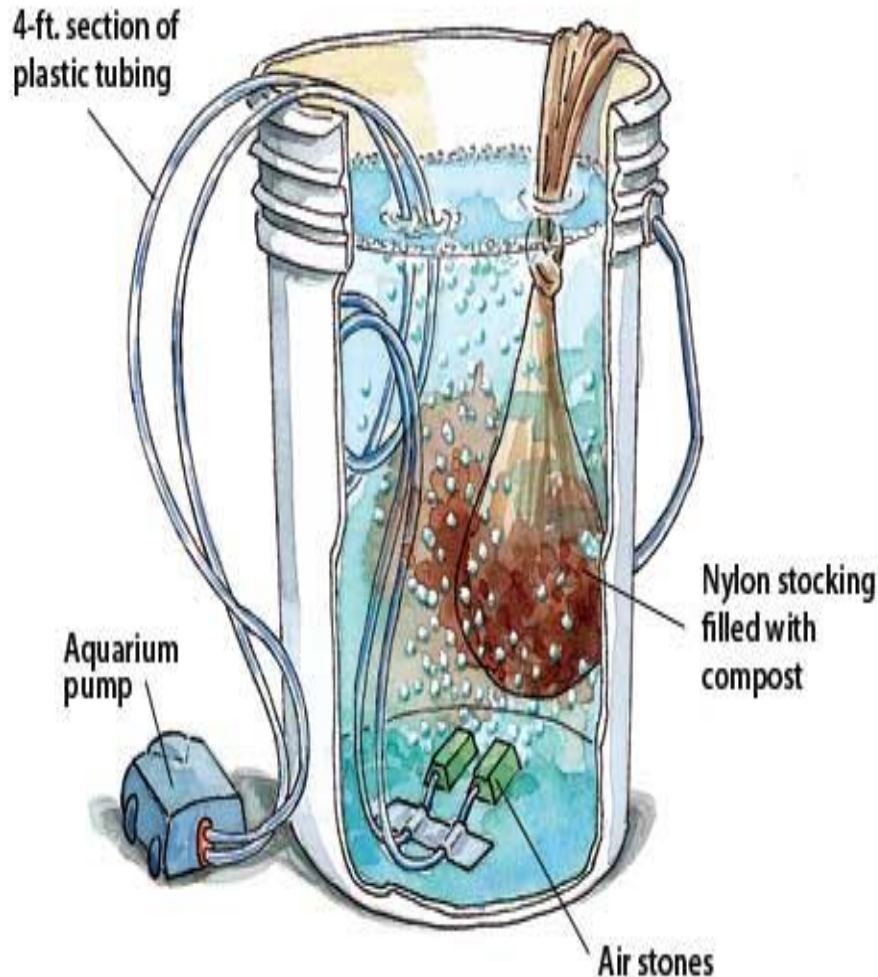
- Mulch, Mulch, Mulch
- Wood Chips for Trees and Shrubs
- Alfalfa Hay for Vegetable Gardens
- Avoid Straw
- Biologic not Geologic

Build the Soil – Compost

- Adds Soil Life
- Improves Tilth and Water Holding Capacity
- Balances Ph
- Eliminates Food Waste
- For New Gardens, Replace 50% of Native Soil with Compost.



Build the Soil – Compost Teas



Active Aerated Compost Teas (AACT)

- Soak Compost in water and use as soil amendment
- Adding Aeration and Sugars Increases effectiveness
- Add Supplemental Ingredients to Boost Micro-Biology Diversity

Resources

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





Thank you!

www.southwestvictorygardens.com

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