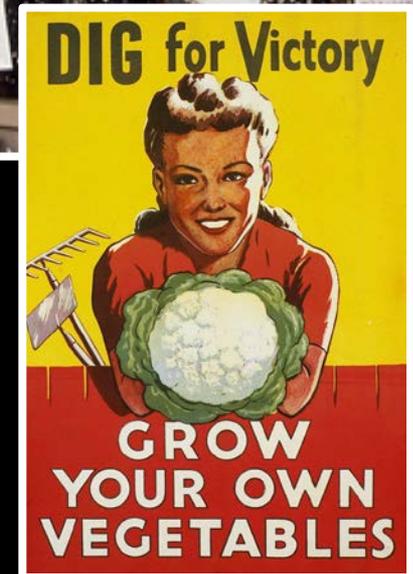


Seed Savers Unite!

Amy Dismukes
UT/TSU Extension
Williamson Co.
Horticulture Agent



WILLIAMSON COUNTY
UT EXTENSION
INSTITUTE OF AGRICULTURE
THE UNIVERSITY OF TENNESSEE
 **TENNESSEE**
STATE UNIVERSITY
Cooperative Extension



Seed Saving aka brown-bagging

In agriculture and gardening, it's the practice of saving seeds or other reproductive material (e.g. tubers) from vegetables, grain, herbs and flowers, for use from year to year

It's how traditional farms and gardens were maintained

Home gardeners are responsible for most of the grassroots seed saving activity today we see today

“Doomsday”

Svalbard Global Seed Vault



Why Collect Seed?

It's insanely economical
collecting & saving seeds cost almost nothing

It's good for the plant
More genetic variation often
means offspring are tougher
and more resilient than the
parent plant

It's good for the earth
growing plants from collected seed preserves genetic diversity

*asexual reproduction guarantees offspring are genetic clones of parent --- in nature, most
flowering plants require open pollination by insects to set seed and cross-pollination can
occur === more genetic variation*



**most of the great heirlooms are the result of
open-pollination**

**plants that reproduce naturally tend to adapt to
local conditions and evolve as reliable performers**

**1000s of varieties have disappeared due to
commercial hybrid seed**

**overuse of hybrids and asexual reproduction has
eroded the gene pool**

saving seeds creates stronger and healthier plants

What is open-pollination?

pollination that occurs by insect, bird, wind, humans or other natural mechanisms



What is an heirloom?

plant variety that has a history of being passed down within a family or community, similar to the generational sharing of jewelry or furniture



All heirlooms are open-pollinated, but not all open-pollinated plants are heirlooms



Why does it matter?



only seed from open-pollinated plants produce identical offspring

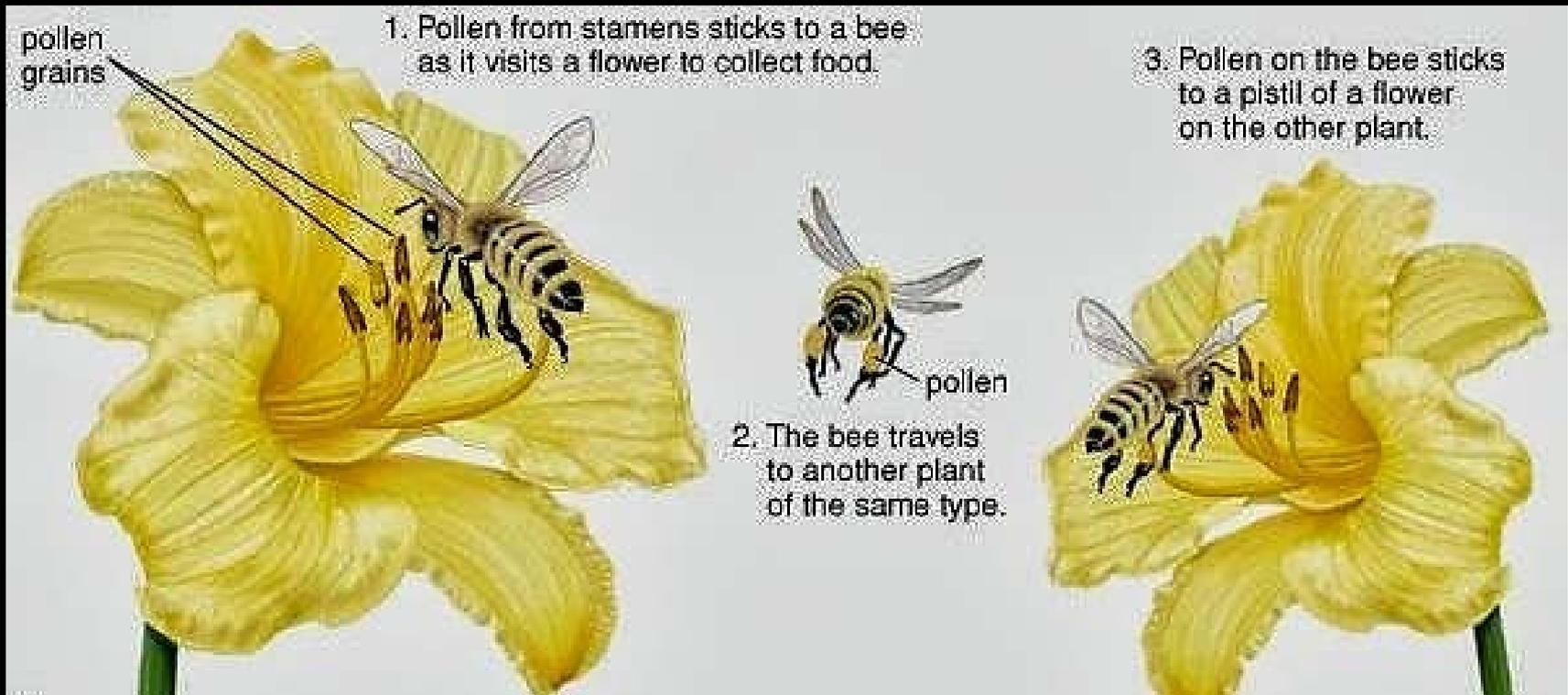
more genetic diversity

- no restrictions on pollen flow -

seed remains true-to-type



Warning: cross-pollination via insect can occur if several varieties of open-pollinated, same species plants, are grown in the same area

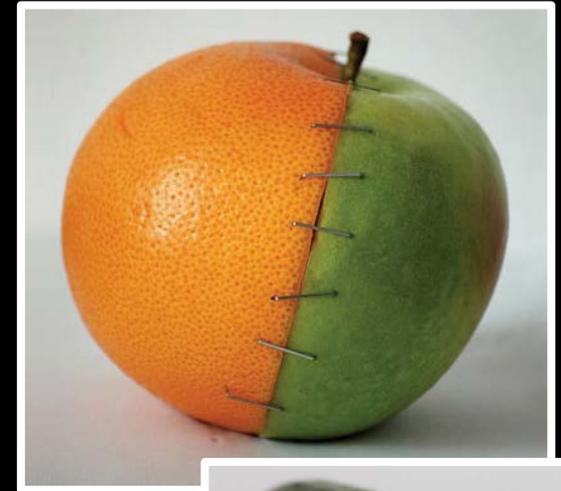


Hybridization

- pollen of 2 different species or varieties are crossed by human intervention
- can occur naturally through random crosses
- commercial hybridized seed (F1) is intentionally crossed to breed desired traits

- *hybrid vigor*

- F1s grow better with higher yields than parent
- seed unstable and can't be saved
 - offspring not true-to-type
 - less vigorous
 - gardeners must purchase new seed yearly
- hybrid seeds can be stabilized by growing, selecting and saving the seed over many years



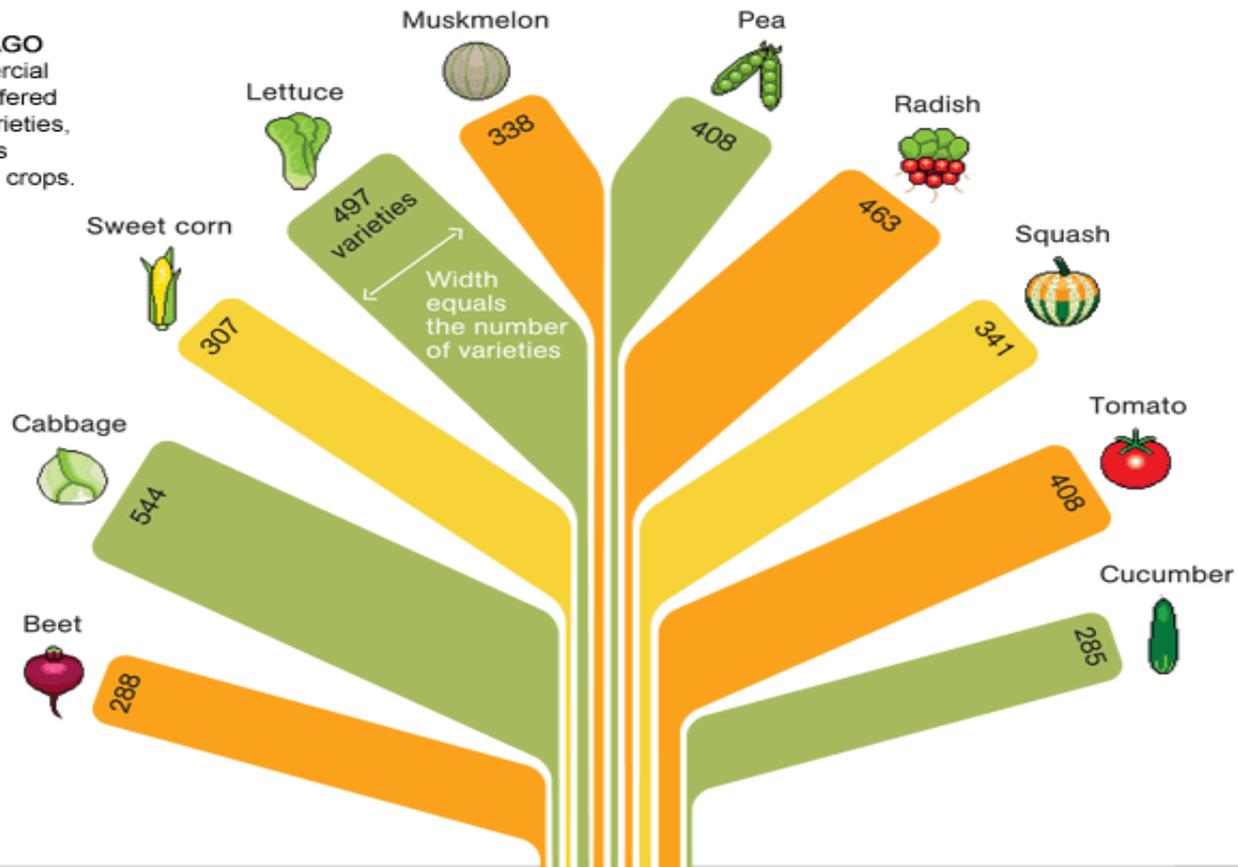


gardeners must decide between open-pollinated, hybrid and heirloom seed varieties

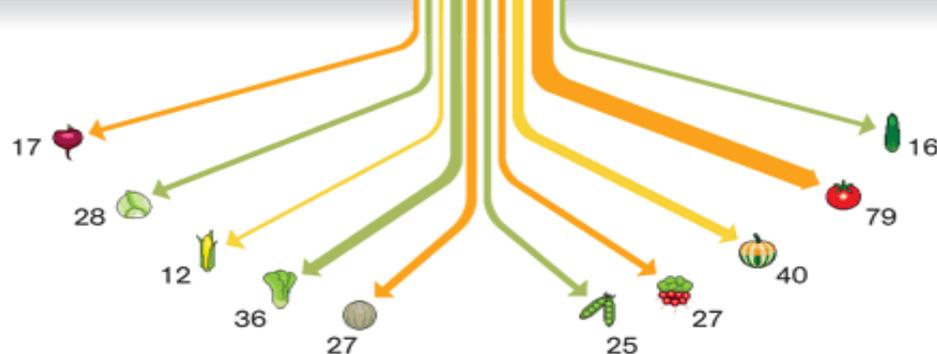
each seed type has something to offer, depending on the gardener's needs and interests

for seed-saving purposes, you can save true-to-type seed from open-pollinated and heirloom varieties, but not hybrids

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

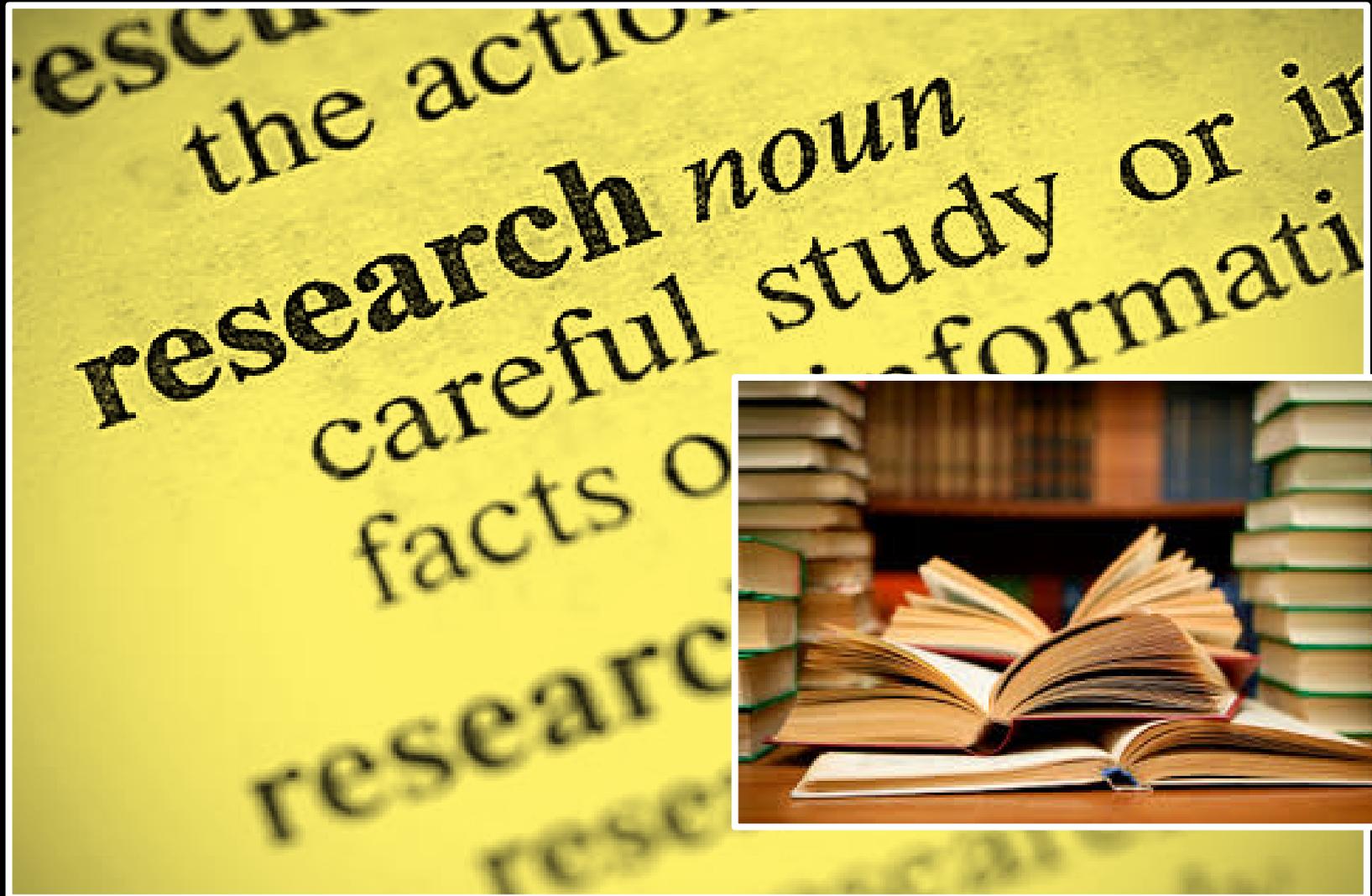
When's the best time to collect?





some seed saving tips ...

understand the plant's anatomy



plants originating from a nursery may
produce sterile seeds

corporations are producing cultivars
that can't be reproduced to protect
patent & profits

many popular cultivars can only be
reproduced asexually,
by graft, propagation or
tissue culture

find out if
your plant
sterile



ensure seeds are ready to harvest



if flower or fruit of the plant is still green or wet, it's too early to harvest

after flowers fade and brown, it's time to cut and dry the seeds

2+ weeks of drying before the seed is ready to store

WARNING: wet seeds can create mold & other problems

drying seeds ...



dry the seeds in a dark, well-ventilated area

bright sunlight can kill a seed

heat can reduce germination %

excess moisture invites pathogens and insects

Tools: paper plates, coat hangers, string, etc.

seeds can be spread out & dry faster

reusable

recyclable

prepare to package for storage once seeds are dry

steps to store ...

sift seeds through a sieve or colander
separates plant fragments from seed

use paper envelopes, not plastic – or glass
paper allows for transpiration, whereas plastic holds
moisture

ensure seeds completely dry if using glass

label your packet/vessel
name of the plant
location of collection
date collected





store packaged, dried seeds in a cool,
dark and dry place

cool basement or refrigerator



don't store in a humid
place where temperatures fluctuate

kitchen, garage or bathroom

flowers that
share ...



Basil, Oregano, Parsley, Dill, Fennel and

- cut flower stalks when brown & crisp
 - seeds fully formed & ready to harvest
- hang stalks upside down in a room temp, dry place
- attach a paper bag (to catch the seeds as they fall)
- shake stalks to encourage seeds to loosen and separate



Cosmos



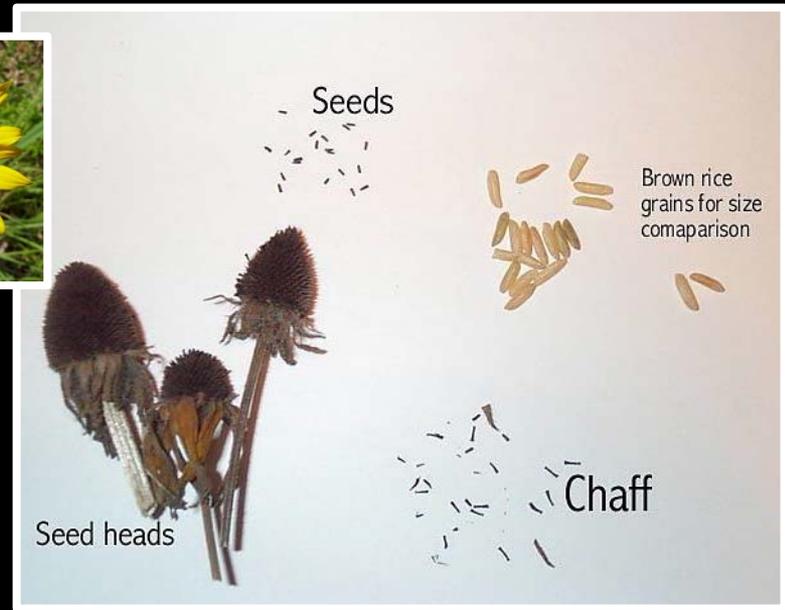
allow cosmos to finish blooming

- when petals have fallen away from seed head -
- seed head should be dark brown or black -

pull head from stem (over container) & collect seed as it drops

- allow seeds to dry and then store

Black-eyed Susan



cut spent flowers when they drop their petals and form seed pods
- pods should be brown, dry & crunchy to ensure maturity and viability –

crush domed seed head between your hands over newspaper
- seeds will fall along with seed pod material (chaff) –

hold newspaper firmly & take to outdoor area ... gently blow
- chaff will blow away bc it's lighter than seeds -

Cockscomb



cockscombs produce seed below the crested flower, instead of in a pod

- seed heads open & reveal shiny, black seeds, when mature -
- presence of finches = seeds mature -

to harvest, run fingers along seed heads, letting seeds fall into your palm

- allows for seed to be harvested before flower fades -

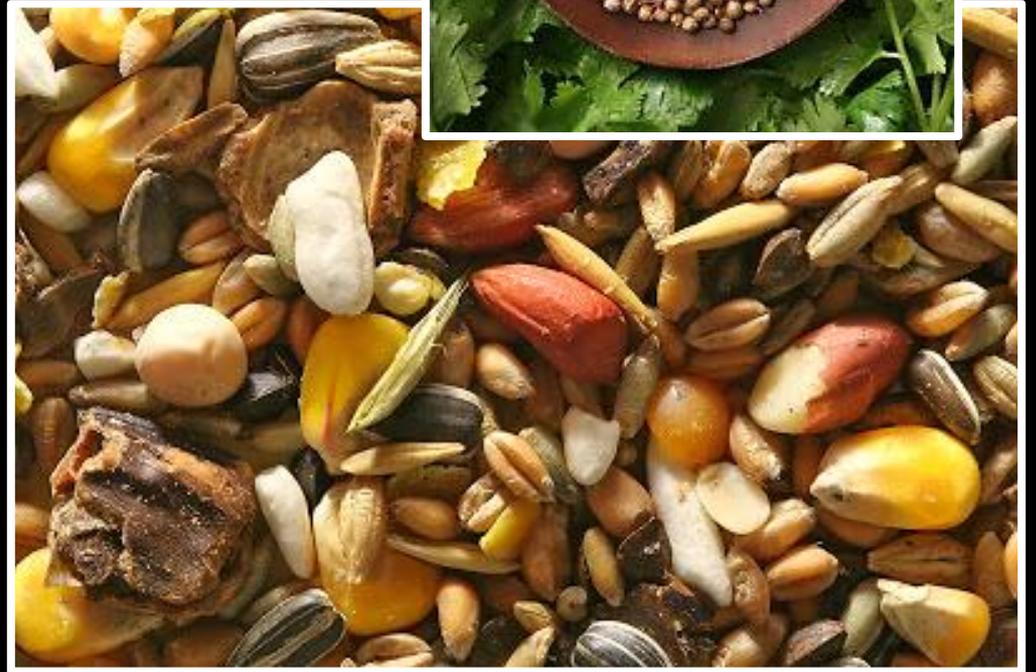
separate chaff by placing mix into a bowl & blowing chaff to the side

Zinnias & Marigolds

- locate a spent or dead flower
- if not completely dry, allow to dry by hanging
- split open
- remove seeds



Gimme
those
seeds!



tomatoes, peppers and eggplant

tomatoes are self-pollinating

avoid hybrid varieties & you can grow the same tomato from seeds



peppers & eggplants need insect pollination

flowers can cross-pollinate

different varieties must be separated by 500' for pure seed



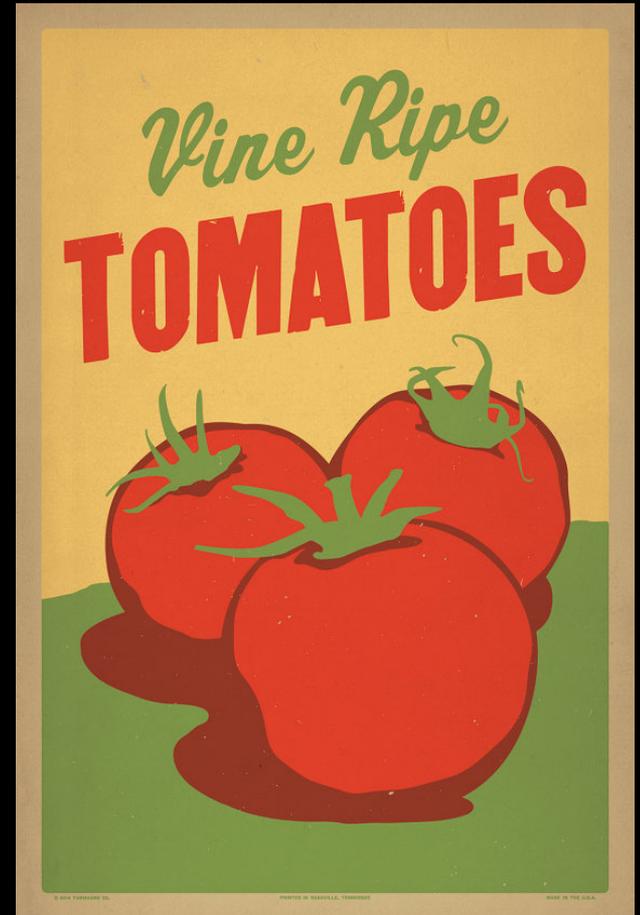
Tomatoes

harvest ripe tomatoes from different vines of
same plant

cut across the middle - squeeze juice & seeds
into a bowl

each tomato seed is encased in a coating
(prevents the seed from sprouting inside
tomato)

remove coating by fermenting it
(mimics natural rotting of fruit)
(added bonus of killing any seed-borne
diseases)





fermenting tomato seeds

estimate volume of mix and add same amount of water to bowl

stir the mixture twice a day for 3 days

watch mixture bc fermentation happens more quickly at high
temperatures

as the mixture ferments, surface will become covered with white or
gray mold

WARNING: don't ferment in kitchen, anywhere it can be tipped
over or where you'd be able to smell it ... *stinky*

fermentation continued ...



fermentation is complete when bubbles rise to top of mass or
when a thick coat of mold forms

stop the fermentation by adding enough water to double the
mix & stir vigorously

clean, good seeds will settle to bottom of bowl

pour off mold, debris and any seeds that float
(floating seeds are hollow)

add more water & repeat process until only clean seeds remain



to capture seeds, pour liquid through a strainer and wipe bottom of strainer to remove moisture

dump seeds onto a glass or ceramic plate to dry

stir twice a day to ensure even drying and to prevent the seeds from clumping together

Warning: tomato seeds will germinate unless dried quickly so to speed drying, use a fan ... don't dry in sunlight or in an oven

Peppers



seeds are mature after the peppers have changed color
(indicates final ripeness)

- cut peppers open & scrape seeds onto a plate
- Spread seeds over non-stick surface and allow to dry -
- test occasionally until they break rather than bend -

wait until fruits far past stage to pick for
eating

eggplants ready for seed saving will be dull,
off-colored, hard and sometimes shriveled

table-ready eggplants are immature
= seeds won't be viable

when left on the plant ...

purple varieties will ripen to dull brown color

green varieties to a yellowish green

white varieties to golden

Eggplant



Eggplant



cut ripe eggplants in half and pull flesh
away from seeded areas

process in blender/food processor
(without peeling)

put the pulp in a bowl

add water - letting good seeds settle - then
pour off water and debris - repeat until
only clean seeds remain

add more water and pour the mix through
fine mesh strainer

dry the bottom of the strainer with a towel
to absorb excess moisture and dump the
seeds out onto a plate to dry

Cucurbits



squash, cucumbers, gourds and melons need even more personal space

require pollinated by insects

- close relatives of the same species must be separated by a $\frac{1}{2}$ mile or more or you'll get a surprise -



Cucumber

cucs change color and become soft soon after ripening
vines stop producing new fruit if you stop harvesting

- pick fruit for seed saving toward end of season –

cut ripe cucumber in $\frac{1}{2}$ and scrape seeds into a bowl

remove the seeds' coating by rub seeds inside a sieve while rinsing

OR soak in water for 2 days

rinse and dry

Summer Squash

allow summer squash to ripen
past tender stage

when you can't dent squash
with a fingernail, fruit is at the
right stage

pick, cut open and scrape seeds
into a bowl

wash, drain and dry



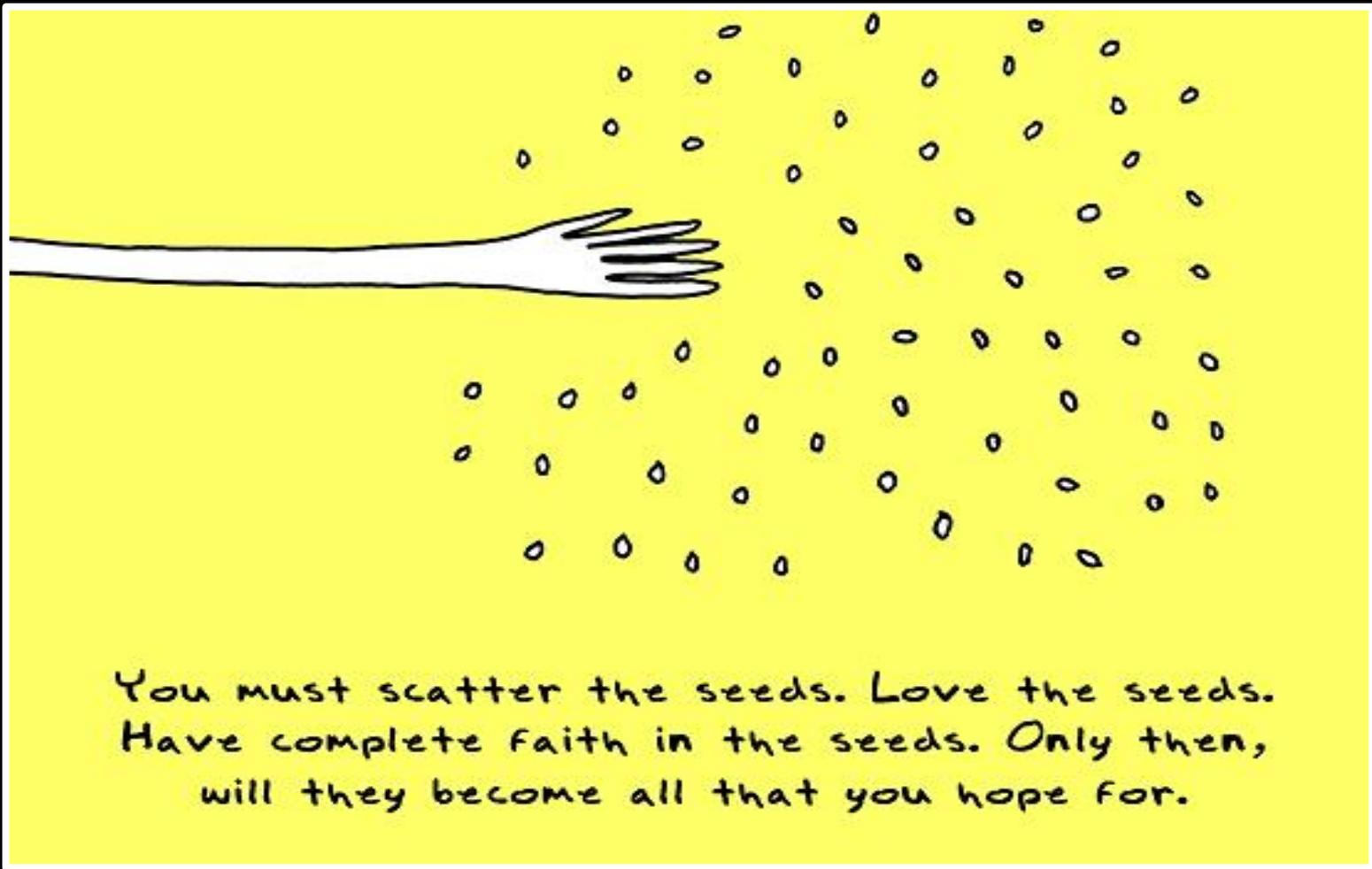
Melons & Winter Squash

Muskmelon: scoop seeds into strainer – rinse - set to dry

Watermelon: put the seeds in a strainer - add a dash of dishwashing liquid to remove excess sugar - rinse and dry

Winter Squash: cut to expose seed cavity (not through center or you'll cut through seeds) - pull seeds from the fibers - rinse and dry





You must scatter the seeds. Love the seeds.
Have complete faith in the seeds. Only then,
will they become all that you hope for.

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Amy Dismukes
Horticulture Extension Agent
Williamson County
adismuke@utk.edu or 615-790-5721