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3/13/04 Terri Compost

Seed Saving Outline

- Pass around seed basket..What do seeds mean to you?
- Why save seed? cost, diversity, heirlooms, adapted to your garden, self dependence, care/involvement
- Seed Companies being rapidly bought by Biotech/"life sciences" multi-nationals who want to control the world food supply. 10 companies now own 90% of seed companies in the world. They drop local crop varieties and varieties that aren't beneficial to big business.
 - Agri-business prefers crops that all ripen at the same time for mechanical harvesting, that ship well (thick skins), that have long shelf lives and that grow well in many regions. They also have incentive to limit market availability to genetically engineered varieties (witness the soybean seed market)
 - Home gardeners prefer varieties that ripen over time, taste good, are nutritious and are adapted to their region
- Loss of crop varieties. (80% of the vegetable varieties that were available in the US in 1902 have disappeared.)
- Hybrid vs. open-pollinated
- Heirloom varieties
- Gardeners as stewards
- Pollination and Flower Structure
 - flower parts: male-stamen/anthers/pollen female: stigma, style, ovary, ovules
 - Perfect (male and female parts are on the same flower)
 - Imperfect Flowers:
 - Monoecious, "one house", male and female flowers on same plant
 - Dioecious, "two houses", male and female flowers on different plants
 - methods of pollination: self, wind, insects (honeybees, other bees, moths & butterflies, wasps, flies)
- Selfers and Crossers
 - Selfers: beans, peas, lettuce, tomatos, potatos, wheat, rice (all grains but rye) some percent of "outcrossing" (5% for tomatoes)
 - Crossers: corn, brassicas, cucurbits, carrots, beets, sunflowers, amaranth, onions
- botanical classification/species barrier
- Maintaining varietal purity
 - Isolation distances, time isolation, mechanical isolation (bagging & hand pollination, caging, alternate day caging)
- Population size /Inbreeding depression
- Annuals (beans, broccoli, cukes, eggplant, lettuce, pepper, tomato)
Bi-annuals (chard, beets, carrots, cabbage, onion, celery, parsley) &
Perennials (asparagus, rhubarb)
 - Overwintering bi-annuals
- Plant Selection- select in environment for intended use
 - Select for the whole plant, not just the edible part
 - Save seed of the first fruits to breed early maturation
- Select for: trueness to type, yield, early maturation, disease resistance, flavor, color, shape, vigor, storage capabilities, drought tolerance, frost tolerance, beauty

- Roguing
- Horizontal vs. vertical resistance
- Harvesting Seeds --When are they mature?
- Label, label, label! Keep good records. Descriptor lists, data
- Processing seeds
 - Dry Processing-(legumes, lettuce, brassicas) harvest on a dry day when brown and dry. Often whole plants are pulled to allow drying and further maturation while drying under cover.
 - Threshing and Winnowing
 - Wet Processing (tomatos, cukes, pumpkins)
 - fermentation cukes & tomatos (ferment several days — seeds should no longer be slimy), rinse, pour off floaters and debris, dry fairly quickly on screen, plate, wood board
 - hot water treatment
- Seed Storage COOL AND DRY
 - dry seed sufficiently 8% (snaps instead of bends), silica gel desiccants
 - airtight containers (jars with lids that seal) (peas and beans better in bags)
 - freezing (always let jar warm to room temporary before opening)
 - temperature and humidity (% humidity + degrees F = less than 100)
 - Years of seed viability
- germination testing.
- Garden Stewards vs. Seed Banks
- Farmers Cooperative Genome Project
- Seed Savers Exchange, Rt. 3 Box 239, Decorah, IA 52101
- Resources
- Books
- Seed Saving Supplies
- BASIL (www.ecologycenter.org/basil/)

Genetic Erosion Facts

- India once grew an estimated 30,000 varieties of rice. It is predicted this will be reduced to no more than 50 varieties by 2005.
- More than 70% of wheat diversity in parts of the Middle East (the original center of wheat diversity) has been replaced by a handful of "green revolution" varieties.
- Of approximately 7,000 named apple varieties formerly growing in U.S., 4,000 are now lost.
- In U.S. 2 varieties of peas account for 96% of acreage in production.
- 6 varieties of corn for 71% of US acreage.
- 4 varieties of potatoes for 72% of US acreage.
- 2 varieties of dry beans for 60% of US acreage.
- In North America, 5% of all open-pollinated vegetable varieties are "lost" each year.
- Open-pollinated varieties are a low priority among most large modern seed companies, many being dropped or deteriorated in quality.