Hopi Agriculture-Dry Farming Techniques

Presented

By

Michael Kotutwa Johnson
“Agriculture activities serve to reinforce traditions and customs in each new generation, for as one Hopi gardener said, ‘This is not about growing vegetables; it is about growing kids.’”

Kuwanwisima, 2005
Hopi Agriculture Overview

- Historical-Cultural Relevance
- Location, Climate and Geography
- Tools and Implements
- Dry Farming Techniques
- Field Management
- Harvesting, Storage and Seed Selection
- Pictures of Hopi Corn Field
- Final Thought
Hopi Agriculture a Way of Life
Water, Planting Stick, Seed
Importance of Hopi Agriculture

- Consumption Based (Nutritional Value)
- Ceremonial Use (e.g. Hopi Baby Naming Ceremony)
- Enhancement of Hopi Social Structure (e.g. Planting Parties)
Working with the Environment
Blending In
Location
Geography/Climate

- Northeastern Part of Arizona
- Colorado Plateau
- 4500-5500 Foot Elevation
- 6-10 Inches Annual Rain Fall *
- Desert Shrubs and Grasses
- Sandy and Clay Loam Soils
Arid Climate
Modern Implements of Hopi Agriculture (Adaptation)
Traditional Planting Stick
Evolution of Traditional Tools
Location of Fields

- Alluvial Flood Plains
- Sandy Slopes
- Natural Seeps or Springs
- Washes or Channels
Alluvial Flood Plains
Sandy Slopes
Natural Seeps and Springs
Washes or Channels
Dry Farming Techniques

- Field Clearing and Soil Type
- Plant Spacing
- Planting Depths and Techniques
- Field Management
Soil Type

- Hopi corn (Sandy Loams)
- Hopi beans (Sandy Soils)
- Hopi squash and melons (Sandy Soils)
Field Clearing

- Generally in Late October or Early February
- Tractor or Hand Cleared Dependent of Size of Field
Hopi Plant Spacing
3 to 5 Paces Between Plants
Beans

1 to 2 Paces Between Plants
Melons and Squash

6-8 Paces Between Plants
Planting Depths and Techniques
Observation

- Planting Depths vary from year to year and depend on the level of soil moisture.

- Soil Moisture and Planting Depth can also be determined by the amount of vegetation available during planting season.
Planting Depths

- Corn (6-18 inches)
- Beans (3-4 inches)
- Squash and Melons (2-4 inches)
Planting Techniques

Traditional and Modern Approaches
Traditional (Corn)

- Clearing a small space with your hand and foot.
- Using Planting Instrument to dig hole to appropriate depth.
- Placing seeds into hole.
- Pushing the moist soil back into the hole with dry soil on top.
Modern (Corn)

- Use of tractor with modified planter (usually a one row planter)
Field Management - Soil, Water, Pest, Weed and Crop
Soil Management (Erosion Control)

- Field Size
- Plant Protection/Wind Breaks
- Check Dams
- Minimal Tillage
Field Size

- Small Fields usually 1-2 Acres

- Large Fields 5 Acres or usually problematic due to loss of soil erosion by wind and rain.
Plant Protection/Erosion Control
Problem Weeds
Weed Control

- A combination of tractor and hand hoeing is required to control spread of unwanted weeds (No use of Herbicides).
Pest Management
Pest Management

- Frequent Canopy Checks (Observation)
- Inventive Methods (No use of Pesticides)
Water Management

- Crops Planted on Alluvial Flood Plains, Washes or near springs.

- Check Dams Erosion Control Device

- Planting in Soils Conducive to Moisture (Clay soils problematic due to ponding after monsoon storms).
Harvesting, Storage and Seed Selection
Beans (Legumes)
Melons and Squash
Traditional Corn Storage
Modern Corn Storage
Seed Selection
Seed Selection Cont.
Some Favorite Pictures
Monsoon Storms
Rainbows
“One must first understand one's own environment before one can begin to work within that niche. I contend, that our survival like the Hopi crops, depends on the interactions of all living and nonliving things to help preserve the delicate balance we may or may not realize we are all part of.

Michael Kotutwa Johnson