

The background image shows a lush green field of crops, including corn and beans, growing in a dry, arid landscape. In the background, there are reddish-brown hills under a clear blue sky with some light clouds. The text is overlaid on the image in a light blue, sans-serif font.

Hopi Agriculture-Dry Farming Techniques

Presented

By

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A young green plant with several long, narrow leaves is growing out of dry, sandy soil. The soil is light brown and cracked, with some small rocks and dried plant matter scattered around. The plant is in the center-left of the frame, and its shadow is cast to the right.

“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)

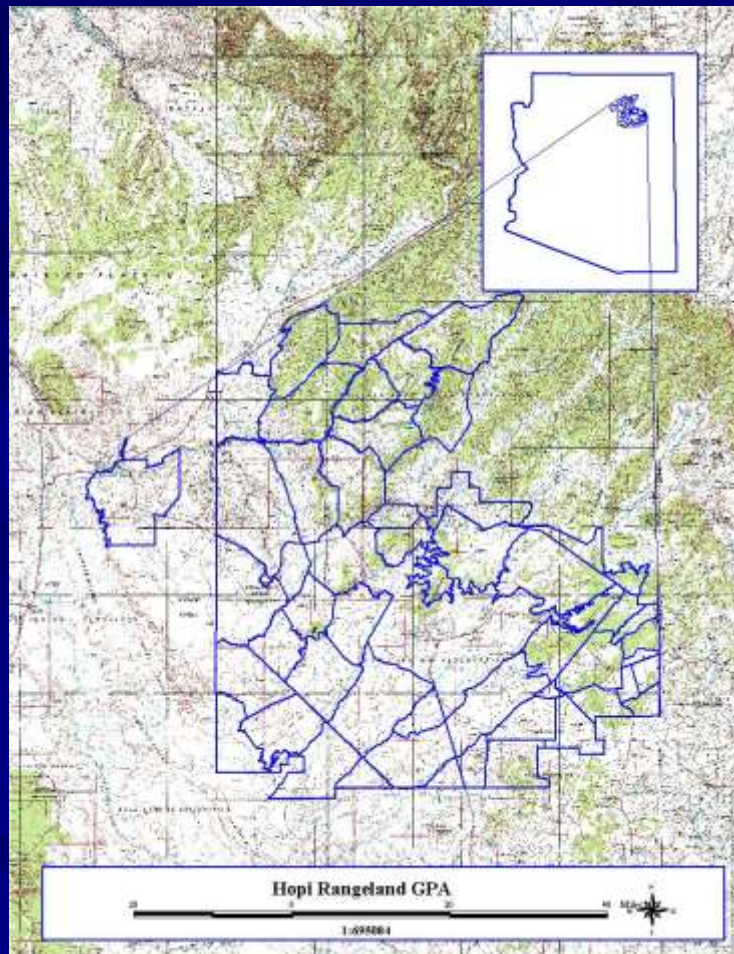
Working with the Environment



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



Corn

- 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



Weed Management



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).



Crop Management



Harvesting, Storage and Seed Selection



Beans (Legumes)



Melons and Squash



Traditional Corn Storage



Modern Corn Storage



Seed Selection



Seed Selection Cont.



A photograph of a cornfield. The corn plants are green and have long, narrow leaves. Some plants have tassels (the flowering part of the corn) that are light-colored and wispy. The plants are growing in rows, and the ground is brown soil. The sky is a clear, bright blue. The text "Some Favorite Pictures" is overlaid in the center of the image in a white, serif font.

Some Favorite Pictures



Monsoon Storms



Rainbows



Melon Patch



Corn Row

Final Thought

“One must first understand ones 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 non living things to help preserve the delicate balance we may or may not realize we are all part of.

Michael Kotutwa Johnson