

Lectures 10 and 11

Source: Moldenke, H.N. and A.C. Moldenke. 1952. *Plants of the Bible*. Chronica Botanica Co., Waltham, MA.

Biblical and Koranic References to Agricultural Technology

The collection of sacred writings known as the Hebrew Bible, the Christian Bible, and the Koran are the basis of Judaism, Christianity, and Islam, the religions of over half of the world's population. They are basically variations of a single monotheistic religion developed by Semitic people known as Hebrews about 3500 years ago that worshipped a single god called Yaweh (Jehovah), and, remarkably, still exist as a distinct people. (Monotheism as a concept can also be found in ancient Egypt where the pharaoh Ikhnaton (d. 1371 BCE, over 200 years before Moses) developed a similar concept based on the sun god. The sacred writings of these three religions have been compiled into the Hebrew Bible (referred to by Christians as the Old Testament), Christian Bible (New Testament), and the Koran.

The Old Testament has been described as the literary expression of the religious life of ancient Israel. More than a thousand years separate the earliest and latest books. Written down from an oral tradition by scribes, it is a broad picture of a people who lived in the Mid-East and describes their interaction with the sweep of events of that era. The canvas stretches from the Nile to the Tigris Euphrates and the action covers about 2000 years. The writings include both the sacred and profane, prose and poetry, history and myth, legend and fable, love song and proverbs, parables and revelations. In only one book, written about 180 BCE, *Ecclesiasticus*, or the Wisdom of Jesus the son of Sirah, is the author (Joshua ben Sira) known.

The Christian Bible is a series of writings and letters from a break-away sect of Judaism (all the participants were Jews), written in the first century by distinct personalities. It is based on the premise that Jesus of Nazareth, the son of God, was born of a virgin, and came to fulfill the prophecies of the Hebrew Bible, was crucified, and was resurrected from the dead. The Koran is a work of Mohammed (?570–632) and accepts the writings of the Hebrew and Christian Bibles.

The basic agricultural roots of these "desert" people are well represented. Plants, plant products, and agricultural technology are referred to in hundreds of verses. The problem of the analysis of this information is covered in the introduction to the great work of the Moldenkes' (husband and wife) in the 1952 book *Plants of the Bible*. (Refer **Reading 10-1** which serves as an introduction to this work.)

In this lecture we will explore references to horticulture by reading some passages in reverse: i.e. not to necessarily receive the sacred meanings, but rather to understand their agricultural underpinnings.

Selections from the Bible that Refer to Crops and Agricultural Technology

Culture

ISAIAH 5:1–7 & 10. Now will I sing to my well beloved a song of my beloved touching his vineyard. My wellbeloved hath a vineyard in a very fruitful hill. And he fenced it, and gathered out the stones thereof, and planted it with the choicest vine, and built a tower in the midst of it, and also made a winepress therein: and he looked that it should bring forth grapes, and it brought forth wild grapes. And now... judge... betwixt me and my vineyard. What could have been done more to my vineyard, that I have not done it.

Wherefore, when I looked that it should bring forth grapes, brought it forth wild grapes? And now go to; I will tell you what I will do to my vineyard: I will take away the hedge thereof, and it shall be eaten up; and break down the wall thereof and it shall be trodden down: And I will lay it waste: it shall not be pruned, nor digged; but there shall come up briars and thorns... For the vineyard of the Lord of hosts is the house of Israel... Yea, ten acres of vineyard shall yield one bath...

Fruitfulness and Productivity

PSALMS 128:3. Thy wife shall be as a fruitful vine by the sides of thine house; thy children like olive plants round about thy table.

EZEKIAL 19: 10–11. Thy mother is like a vine in thy blood, planted by the waters: she was fruitful and full of branches by reason of many waters. And she had strong rods... and her stature was exalted among the thick branches, and she appeared in her height with the multitude of her branches.

EZEKIAL 17:5–10. He took also of the seed of the land, and planted it in a fruitful field; he placed it by great waters, and set it as a willow tree. And it grew, and became a spreading vine of low stature, whose branches turned toward him, and the roots thereof were under him: so it became a vine, and brought forth branches, and shot forth sprigs. There was also another great eagle with great wings and many feathers: and, behold, this vine did bend her roots toward him, and shot forth her branches toward him, that he might water it by the furrows of her plantation. It was planted in a good soil by great waters, that it might bring forth branches, and that it might bear fruit, that it might be a goodly vine. Say thou, Thus saith the Lord God; Shall it prosper? shall he not pull up the roots thereof, and cut off the fruit thereof, that it wither? It shall wither in all the leaves of her spring, even without great power or many people to pluck it up by the roots thereof. Yea, behold, being planted, shall it prosper? shall it not utterly wither, when the east wind toucheth it? It shall wither in the furrows where it grew.

Genetics–Breeding–Rootstocks

JEREMIAH 2:21. Yet I had planted thee a noble vine, wholly a right seed: how then art thou turned into the degenerate plant of a strange vine unto me?

Harvesting

EXODUS 22:5. If a man shall cause a field or vineyard to be eaten, and shall put in his beast, and shall feed in another man's field; of the best of his own field, and of the best of his own vineyard, shall he make restitution.

Pests

SONG 2:13 & 15. The fig tree putteth forth her green figs, and the vines with the tender grapes give a good smell... Take us the foxes, the little foxes, that spoil the vines: for our vines have tender grapes.

Pruning

JOHN 15:1–6. I am the true vine, and my Father is the husbandman. Every branch in me that beareth not fruit he taketh away: and every branch that beareth fruit, he purgeth it, that it may bring forth more fruit... As the branch cannot bear fruit in itself, except it abide in the vine; no more can ye, except ye abide in me. I am the vine, ye are the branches: He that abideth in me and I in him, the same bringeth forth much fruit: for without me ye can do nothing. If a man abide not in me, he is cast forth as a branch, and is withered; and men gather them and cast them into the fire, and they are burned.

Raisins

I SAMUEL 25:18. Then Abigail made haste, and took... two skins of wine... an hundred clusters of raisins...

Vinegar

RUTH 2:14. At meal time come thou hither, and eat of the bread, and dip thy morsel in the vinegar...

Wine

GENESIS 9:20–21 & 24. And Noah began to be an husbandman, and he planted a vineyard: and he drank of the wine, and was drunken... And Noah awoke from his wine...

JUDGES 9:12–13 & 27. Then said the trees unto the vine, Come thou, and reign over us. And the vine

said unto them, Should I leave my wine, which cheereth God and man, and go to be promoted over the trees? ...And they went out into the fields, and gathered their vineyards, and trode the grapes, and made merry...

Grafting

ROMANS 11: 17 & 24. And if some of the branches be broken off, and thou, being a wild olive tree, were grafted in among them, and, with them partakest of the root and fatness of the olive tree... For if you were cut out of the olive tree which is wild by nature, and were grafted contrary to nature into a good olive tree: how much more shall these, which be the natural branches, be grafted into their own olive tree?

Note: The olive requires grafting. Ungrafted suckers produce a small worthless fruit. This explains the power allegory of Paul in Romans 11:17-24. (Refer Readings (Moldenke and Moldenke 1952))

Gleaning

DEUTERONOMY 25:16. When you are harvesting in your field and you overlook a sheaf, do not go back to get it. Leave it for the alien, the fatherless and the widow, so that the Lord your God may bless you in all the work of your hands. When you beat the olives from your trees, do not go over the branches a second time. Leave what remains for the alien, the fatherless and the widow. When you harvest the grapes in your vineyard, do not go over the vines again. Leave what remains for the alien, the fatherless and the widow. Remember that you were slaves in Egypt. That is why I command you to do this.

Artificial Ripening and The Riddle of Amos' Occupation

AMOS 7, 14. I was no prophet, neither was I a prophet's son, but I was a herdsman and a gatherer of sycamore fruit.

The English phrase "gatherer of sycamore fruits" is an "odd" translation of the Hebrew *Boless shikmim*

Shikmim = *sycamores* = wild figs

Boless = *obscure*, mentioned only once in the Bible

The Problem

The Hebrew word for **gatherer** is *Ossef*

The Hebrew word for **gash** is *boless*

Thus, *boless* probably means **gash, pierce, or wound**

In the *Septuaginta* (Greek translation of Bible in 200 BCE in Alexandria, the term is translated as a "piercer of sycamore", "*Knizon Sycamina.*"

The word, wounder or piercer, makes sense when the biology and horticulture of sycamore is studied (See **Reading 10-2**).

The fruit depends on pollination by a wasp (*Ceratosolin arabicus*). When sycamores were introduced to Egypt, apparently the wasp was not introduced and seeds were not produced. The tree is used in Egypt for wood and fruit and the tree is held sacred. Used as funeral offerings.

To ripen the fruit without pollination, the ancient system was to "scrape" the fruit (Theophrastus): "*It cannot ripen unless it is scraped but they scrape it with iron claws, the fruit thus scraped ripens in 4 days.*" The practice is still carried out in Egypt and Cyprus.

The wounding acts to increase ethylene which induces ripening.

Ethylene is the most recent addition to the list of plant hormones; 2-(chloroethyl) phosphoric acid (ethephon)—an ethylene generating material, is now commercially used to induce ripening as well as for other uses (latex flow in rubber).

Selections from the Koran that Refer to Crops

Selections from the Koran (written in the early 6th century) concerning crops, emphasize the typical Mediterranean and Desert fruit crops (grapes, olives, date palm, pomegranates). The reference to corn refers to grains, undoubtedly wheat. Note the concern over water which is scarce in desert climates, and references to gardens and trellises, knowledge of genetic diversity, and differences in quality.

The Bee—XVI Part 14 261

10. He is He who sends down rain from the sky, from it ye drink, and out of it (grows) the vegetation on which ye feed your cattle

11. With it He produces for you corn, olives, date-palms, grapes, and every kind of fruit; verily in this is a Sign for those who give thought.

He Frowned—LXXX Part 30 58

24. then let man look at his Food, (and how we provide it):

25. For that we pour forth water in abundance,

26. And we split the earth in fragments,

27. And produce therein grain,

28. And Grapes and the fresh vegetation,

29. And Olives and Dates,

30. And enclosed Gardens, dense with lofty trees,

31. And Fruits and Fodder,

32. A provision for you and your cattle.

Cattle—VI Part 7 142

99. It is He who sendeth down rain from the skies: with it we produce vegetation of all kinds: from some we produce green (crops), out of which we produce close-compounded grain. Out of the date-palm and its sheaths (or spathes) (come) clusters of dates hanging low and new: and (then there are) gardens of grapes, and olives, and pomegranates, each similar (in kind) yet different (in variety): when they begin to bear fruit, feast your eyes with the fruit and the ripeness thereof. Behold! In these things there are signs for people who believe.

141. It is He who produceth a garden, with trellises and without, and dates, and tilth with produce of all kinds, and olives and pomegranates, similar (in kind) and different (in variety): eat of their fruit in their season, but render the dues that are proper on the day that the harvest is gathered. But waste not by excess: for Allah loveth not the wasters.

Al-Ra'd or The Thunder—XIII 242

4. And in the earth are tracts (diverse though) neighboring, and gardens of vines and fields sown with corn, and palm trees—growing out of single roots or otherwise: watered with the same water, yet some of them we make more excellent than others to eat. Behold verily in these things there are signs for those who understand!

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18. And we send down water from the sky according to (due) measure, and we cause it to soak in the soil; and we certainly are able to drain it off (with ease).

19. With it we grow for you gardens of date-palms and vines: in them have ye abundant fruits: and of them ye eat (and have enjoyment),

20. Also a tree springing out of Mount Sinai, which produces oil, and relish for those who use it for food.

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