
The Basics of Human Civilization Food, Agriculture and Humanity

Volume-I : Present Scenario

Compiled by

Dr. Prem Nath

Technical and Editorial Team

Dr. C.P.A. Iyer

Dr. O.P. Dutta

Dr. K.R.M. Swamy

Dr. B.S. Prabhakar

Mr. P.B. Gaddagimath

2013



**Dr. Prem Nath Agricultural Science
Foundation (PNASF), Bangalore, India**



New India Publishing Agency

Pitam Pura, New Delhi-110 088

2.2

The Intersection of Religion and Horticulture

Jules Janick

Department of Horticulture & Landscape Architecture,
Purdue University, West Lafayette, IN. 470 907, USA.

1. INTRODUCTION

The major religions of the world were developed by agricultural peoples in antiquity as a means of explaining the unknown and to seek answers to the problems of everyday existence in order to add solace, comfort and hope to the problems of sickness, bereavement and personal death – human conditions that are usually difficult to bear. It allows people to accommodate anxieties and deal with misfortune. Many religions have developed narratives, symbols, traditions and sacred histories that are intended to give meaning to life and attempt to explain the inexplicable: the origin of matter, the origins of life and the disturbing question of life after death. Most religions deal with the supernatural and involve supreme beings (god or gods) that somehow control the destiny of human life. These gods demand to be worshipped. Thus, all religions evolve into patterns of organized devotion of supreme beings, develop a series of emotional rituals and are based on a belief system based on faith that in the last analysis cannot be questioned by the faithful. Some religions have developed organized hierarchal organizations involving a priesthood known under various names, as well as religious communities in the form of temples, churches, or mosques. Most religions are based on seminal written documents which

are considered hallowed, sacred and divinely inspired, but are always obscure and subject to interpretation. Thus, most religions undergo a pattern of schism and splintering with opposing ideas eventually considered heretical by each side. When there is a merging of religion and the state, state-sponsored repressive actions against nonbelievers and those of different religions often follow. Thus, in most modern societies freedom of religion, i.e. freedom of thought, is considered a basic part of human rights.

Since most of our religion derived in antiquity among primitive agricultural communities there is a strong reference to agricultural and horticultural plants as well as practices such as planting, grafting, training, harvest and processing that are interspersed in religious writings (Moldenke and Moldenke, 1952). Since horticultural plants are a source of sustenance, medical cures, aroma and delight it is natural that horticulture and religion are interconnected. Thus, the shaman who prescribes cures from plants becomes very close to the priest who relies on the power of prayer. There often is an interaction of religious belief with the food we eat and their method of preparation. As a result, certain beloved horticultural plants become transformed into religious symbols.

Different patterns in the interaction of horticulture and religion will be the focus of this brief review. Interestingly, the close affinity of horticulture and religion has made some types of horticultural practice take on the sheen of religious practices themselves. Examples include the practice of planting based on the phases of the moon, the organic movement in which certain plant practices are endowed with elevated spiritual value and others are considered sinful, special diets which designate certain foods as ritually clean and others are prohibited and finally the environmental movement which has developed a natural cosmology and ethos of its own that begins to resemble religious beliefs.

2. SACRED WRITINGS AND HORTICULTURAL PLANTS

Plant lore is a key component of the sacred writings of the world's major religions: Judaism, Christianity, Islam, Hinduism and Buddhism. The first three Abrahamic religions originating in the Mideast are interrelated: Judaism evolved in the first two millennium BCE, Christianity in the end of the first century CE, as an off shoot of Judaism, and Islam, with roots to both, in the 7th century. These religious texts, the Hebrew Bible (referred to by Christians as the Old Testament), the Christian Bible (New Testament) and the Qur'an (Koran), taken together represent a broad picture of Semitic people, describing their interaction with the sweep of events of that era. The writings include the sacred

and profane, prose and poetry, history and myth, legend and fable, love songs and proverbs, parables and revelations. The basic agricultural roots of these desert people are infused in the texts. Plants, plant products and horticultural technology are referred to in hundreds of verses. Horticultural practices such as planting, grafting, training, pruning, wine making, irrigation and harvest are discussed, many in a religious context. Reference to fruits are abundant so that these sacred texts can be read almost as a pomology treatise in addition to their religious and sacred meanings that still inspire billions of people (Goor and Nurock, 1968; Janick, 2007). The major fruits of the regions including grape, olive, date, fig, pomegranate and almond are fused into the narrative of these religious texts shown in the following examples.

2.1. Grape (*Vitis orientalis*, *V. vinifera*)

The Hebrew bible is rich in allusions to viticultural practices and wine making (Walsh, 2000). The replacement of tree support with arbors or trellises is amply shown from Mesopotamian and Egyptian iconography. Protection of grapes from birds and thieves is a common feature of the early cultivation of vine and the construction of walls and towers is associated with vineyards in ancient Israel. Various techniques were developed for over-wintering, including covering sprawling vines with soil, techniques that still exist in Afghanistan. Grapes were preserved by sun drying to produce raisins, or by transforming grape juice to wine. The culture of grapes and the technology of wine making are common themes in biblical writings and become infused in Jewish and Christian religious practices and social encounter. Wine was associated with blessings and joy, although drunkenness was frowned upon. Grapes and raisins are highly prized in the Koran and although wine is prohibited in Islam, “*rivers of wine*” are promised in Paradise.

Now will I sing to my wellbeloved a song of my beloved toughing his vineyard. My well beloved had 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 in it? Wherefore, when I looked that it should bring forth grapes, brought it forth wild grapes? Isaiah 5:1-7 & 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 towards him and the roots thereof were under him: so it became a vine and brought forth branches

and shot forth springs. Ezekial 17:5-7

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. John 15:1-6.

And He it is Who produces gardens (of vine), trellised and untrellised and palms and seed-produce of which the fruits are of various sorts and olives and pomegranates, like and unlike; eat of its fruit when it bears fruit and pay the due of it on the day of its reaping and do not act extravagantly; surely He does not love the extravagant. Qu'ran. The Cattle:6.141.

2.2. Olive (*Olea europaea*)

Olive, along with grape, is the most mentioned fruit in the Hebrew bibles and its importance permeated the western world. The olive tree became a symbol of beauty, freshness, fertility, wealth, fame and peace. Its importance is reflected in its widespread use of oil for religious purposes such as consecration ceremonies (anointing) in Judaism and Christianity: the word messiah (Christ) literally means "the anointed one." Although grafting is not referred to in the Hebrew bible, grafting of olive is mentioned in the Christian bible (see *Romans 11*, below).

And thou shalt command the children of Israel that they bring thee pure oil olive beaten for the light, to cause the lamp to burn always. Exodus 27:20

The trees went forth on a time to anoint a king over them; and they said unto the olive tree, Reign thou over us. But the olive tree said unto them, Should I leave my fatness, wherewith by me they honour god and man?... Judges 9:8-9

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

And a tree that grows out of Mount Sinai which produces oil and a condiment for those who eat. Qur'an. The Believers:23.020.

2.3. Date (*Phoenix dactylifera*)

The date palm is a dioecious, long-lived, palm, indigenous from northern Africa through the Arabian peninsula to northern India esteemed for its sweet fruit and its valuable wood and leaves. It may have been the first cultivated fruit and was well established in the Middle East during the Bronze Age. The plant lacks a deep root system so that irrigation is essential. Since the date is dioecious, production of fruit by pistillate clones requires a source of pollen and artificial pollination was well illustrated in Assyrian bas reliefs where the practice became codified in the laws of Hammurabi ca. 1750 BCE and the practice became a religious practice.

And the plain of the valley of Jericho, the city of palm trees... Deuteronomy 2:8

And he shall be like a tree planted by the rivers of water, that bringeth forth his fruit in his season; his leaf also shall not wither... Psalms 1:3

The righteous shall flourish like the palm tree... Those that be planted in the house of the Lord shall flourish... They shall bring forth fruit in old age; they shall be fat and flourishing. Psalms 92:7-8

And of the fruits of the palms and the grapes – you obtain from them intoxication and goodly provision; most surely there is a sign in this for a people who ponder. Qur'an. The Bee:16.06.

2. 4. Fig (*Ficus carica*, *F. sycomorus*)

Two species of fig are mentioned in the bible: common fig (*Ficus carica*) and sycomore fig (*F. sycomorus*). The common fig is a gynodioecious species consisting of monoecious inedible wild types (caprifig) and pistillate domesticates. Borne on small trees, figs are one of the classic Mediterranean fruits. Signs of fig cultivation are found at various Neolithic and late Neolithic sites. Domestication was generally contemporary with olive and grape in the Eastern Mediterranean basin. Pollination is affected by a tiny wasp (*Blastophaga psenes*) that overwinters in the caprifig. The wasp after emergence enters the common fig which contains only long-styled pistils, not adapted to oviposition, causing the wasp to perish, but not before pollination has occurred. The Tree of Good and Evil in the Genesis story of Adam and Eve was often depicted as a fig tree. The sycomore fig originated in the savannas of eastern Central Africa and was introduced into Egypt in predynastic times. It became an important cultivated plant for its decay-resistant wood and its fruit, which although not exceptional, was widely

consumed. Because the pollinating wasp seems not to have been introduced, the fruits did not develop normally and ripening was achieved by scraping with a metal tool, an example of an innovative horticultural practice that relied on ethylene release from the wound response (Galil, 1968).

And the eyes of them both were opened and they knew that they were naked; and they sewed fig leaves together and made themselves aprons. Genesis 3:7.

And the trees said unto the fig-tree, come thou and reign over us. But the fig tree said unto them, should I forsake my sweetness and my good fruit and go to be promoted over the trees? Judges 9:10-11

I was not a prophet or a prophet's son but I was an herdsman and a piercer [mistranslated as "gatherer" in the King James Bible] of sycomore fruit. Amos 7:14

And seeing a fig tree afar off having leaves, he came, if haply he find anything thereon: And when he came to it, he found nothing but leaves; for the time of figs was not yet...and in the morning as they passed by, they saw the fig tree dried up from the roots. Mark 11: 13 &20.

A certain man had a fig tree planted in his vineyard; and he came and sought fruit thereon and found none. Then said he unto the dresser [cultivator] of his vineyard, Behold, these three years I come seeking fruit on this fig tree and find none; cut it down; why cumbereth it the ground? And he answering said unto him, Lord, let it alone this year also, till I shall dig about and dung it: And if it bear fruit, well: and if not, then after that thou shalt cut it down. Luke 13:6-9

I swear by the fig and the olive. Qur'an. The Fig-tree:95.001.

2.5. Pomegranate (*Punica granatum*)

Native to the southern Caspian belt (Iran) and northeast Turkey, the pomegranate is a Bronze Age fruit that has been cultivated for 5000 years. The fruit was once known as the apple of Carthage, hence the Latin name *Punica*. The pomegranate was introduced into Egypt from Syria about 1600 BCE and reached Egypt though the inflow of Semitic people (Hyksos). The pomegranate is widely used in Jewish iconography and coins. Based on these images, the pomegranate seems little changed from antiquity. Skin color varies from bright red to leathery brown. The pomegranate was long admired for its medicinal properties and

current interest is increasing for this reason. Although the pomegranate is not mentioned in the Christian bible, this fruit is widely used in Christian iconography of the Renaissance.

And he made the pillars and two rows round about upon the one network, to cover the chapiters [capitals] that were upon the top, with pomegranates...and the chapiters upon the two pillars had pomegranates also above, over against the belly which was by the network: and the pomegranates were two hundred in rows round about the other chapiter. I Kings 7:18 & 20.

I would cause thee to drink of spiced wine of the juice of my pomegranate. Song of Songs: 8:2.

And He it is Who sends down water from the cloud, then We bring forth with it buds of all (plants), then We bring forth from it green (foliage) from which We produce grain piled up (in the ear); and of the palm-tree, of the sheaths of it, come forth clusters (of dates) within reach and gardens of grapes and olives and pomegranates, alike and unlike; behold the fruit of it when it yields the fruit and the ripening of it; most surely there are signs in this for a people who believe. Qur'an. The Cattle:6.099.

2.6. Almond (*Prunus amygdalus*)

Almonds grow wild throughout southwest and central Asia, from Turkey and Syria into the Caucasus and into the deserts of Tian-shan and the Hindu Kush mountains. Based on biblical literature, almonds were introductions into the Holy Land as early as 2000 BCE. There are two principal types, sweet and bitter (amygdalin-containing). Domestication involves selection for non-bitterness due to a single dominant gene (Kester and Gradziel, 1996) and increased kernel size. The famous sprouting rod of Aaron, mentioned in the Book of Numbers signifying that he and his descendents could be priests, was an almond.]

Three bowls made after the fashion of almonds in one branch, a knop (calyx) and a flower; and three bowls made like unto almonds in another branch, a knop and a flower: so throughout the six branches going out of the candlestick. And in the candlestick were four bowls made like almonds, his knops and his flowers. Exodus 37:19-20.

And it came to pass, that on the morrow Moses went into the tabernacle to witness; and, behold, the rod of Aaron for the house of Levi was budded and brought forth buds and bloomed blossom and yielded almonds. Numbers 17:1-8.

3. THE ORIGINS OF AGRICULTURE

Early religious literature concerning the origins of agriculture/horticulture reflects the tension between agrarian and nomadic cultures. (Kramer 1981). Inanna, goddess of love and procreation in ancient Sumer was responsible for the fertility of the soil, the prosperity of the land and the well-being of its people. Inanna's choice of a bridegroom wavered between the shepherd Dumuzi and his rival Enkimdu, the farmer. The poet must have been nomadic for the ultimate winner of Inanna's love was the shepherd.

The bewildering theology of ancient Egypt was based on a pantheon of human gods and goddesses as well as the sun, the sky and many life forms. Osiris, god of the afterlife and son of the Earth god *Geb* and the sky goddess *Nut* was associated with the cycles of nature, particular vegetation and personified the Nile and its periodic flooding that made agriculture possible in Egypt. His loyal sister and wife, the goddess Isis, was associated with the black soil of the delta, fertilized by the touch of Osiris-Nile, making all Egypt rich with her fecundity. It was Isis who discovered wheat and barley (Durant, 1954). She was worshipped and is often shown nursing Horus, her miraculously conceived son in a stable. She was the Egyptian equivalent and precursor of Kali, Inanna, Istar, Cybele, Demeter, Cere and Mary. In the New World, agriculture is a gift of Quetzalcoatl, a god disguised as a plumed serpent.

In the Book of Genesis in the Hebrew bible, the origins of humans are mythologized as Adam (Man) and Eve who find themselves in a well-watered garden (Eden) somewhere in the headwaters of the Tigris and Euphrates River. Eve is tempted by a serpent to eat from the Tree of Knowledge although warned not to, shares the fruit with Adam and in retribution is expelled by God from the garden, punished by having to bear children in pain while Adam is relegated to hard labor in agriculture. Clearly, in nomadic societies, agricultural toil is considered a curse. The fantastic story has two famous horticultural allusions.....the tree of knowledge with its delicious but dangerous fruits and the fig whose leaves hide the nakedness of Adam and Eve who discover shame from innocence as they are expelled from the Garden of Eden.

4. PLANTS AS RELIGIOUS SYMBOLS

Many of the world's religions have associations with special horticultural plants. Thus in Judaism, plants such as palms, pomegranates, grape and citron have special relevance. In a holiday of

Tabernacles, fruits of the citron tree (*Citrus medica*) known as *etrog* are collected and prized by the faithful along with palm leaves (*lulov*). Fruit with an intact style and stigma (*pitam*) are especially revered (Nicolosii *et al.* 2005). In Christianity, symbolic horticultural plants include the palm, lily and rose. In the Sunday before Easter, known as Palm Sunday, bits of palms leaves interlaced as crosses are distributed to worshippers. A rich association of plants with symbolic tradition developed in the Middle Ages and Renaissance in Christian art. For example, many of the 15th century paintings of the Virgin Mary by Carlo Crivelli, include the phallic-shaped cucumber that is meant to convey that the mother of Jesus was conceived without sin (Impelluso, 2003). In Islamic art human images are prohibited and so floral imagery is widely used as decorative motifs along with calligraphy. Trees such as the banyan are associated with the Hinduism and many gods and goddesses are portrayed holding or sitting next to lotus flowers.

5. FOOD PREFERENCES AND PROHIBITIONS

Many religions have food prohibitions that usually involve animal products. Thus, Jews, Moslems and Hindus abhor pork, while Hindus especially refrain from the consumption of beef believing the cow to be holy. Most Buddhists, an offshoot of Hinduism, are also vegetarians based on strong prohibitions about killing animals. Christians are typically omnivorous regarding animal flesh but refrain from meat on special holy days as penance but can replace it with fish. Moslems refrain from eating during the daylight hours during the holiday of Ramadan and at night particularly consume dates. Jews fast on Yom Kippur, the Day of Atonement.

There are relatively few religious prohibitions concerning the consumption of plant products. However, in Judaism there is a prohibition (*kilayim*) of mixing species, such as in plantings of grains or vegetables, the agricultural use of animals and mixed fibers of different species in clothing. The same concept is used to forbid grafting of different species; thus the citron produced on grafted plants where a lemon is the rootstock (used to increase yields) is not considered ritually acceptable. While Moslems are fond of grapes, there is a religious prohibition against the consumption of alcohol; thus grape wine is prohibited. Very orthodox Hindus avoid onions and garlic. Mormons (Latter Day Saints) prohibit the consumption of alcohol as well as beverages such as coffee and tea that contain caffeine. In contrast, Jews and Christians, have strong associations with wine as part of their religious ritual. Christians celebrate the Eucharist consuming bread

and wine and wine is an integral part of Jewish ritual. Jews, during the weeklong celebration of Passover that celebrates the exodus from Egypt, abstain from eating leavened bread and certain communities extend this prohibition to various legumes such as beans and peas, probably to insure avoidance of any contamination with wheat that might accidentally become leavened with wild yeast when moist.

There is a wide acceptance of vegetarianism in many modern day movements on the basis of a combination of philosophical rejection of killing animals, as well as political, esthetic and economic concerns. The movement is split over the inclusion of dairy products and eggs; the extreme vegetarians or vegans prohibit them. The healthful attributes of vegetables are undeniable but so is the fact that the Inuit, peoples of Arctic regions, have thrived on an exclusive fish and animal diet.

6. THE ORGANIC AND ENVIRONMENTAL MOVEMENTS: A NEW HORTICULTURAL RELIGION?

Interestingly many horticultural production systems known generally as the organic or environmental movement have developed a spiritual ethos that are often faith based rather than science based. Thus, they promote what that consider “natural” practices and solutions notwithstanding that many natural substances such as nicotine and various plant alkaloids are quite dangerous and toxic. These movements have developed absolute prohibitions that resemble dietary laws of many religions and have organized into associations that in some ways resemble religious communities with governing boards that resemble the priesthood. Prohibitions for example exclude the use of inorganic (chemical) fertilizer, growth regulators, chemical pesticides, micro-propagation and genetic transformation. The precise reasons are often philosophical and usually appear illogical to most horticultural scientists.

The origins of these movements, as many religions, trace to charismatic personalities and are based on written texts (Janick, 2002). Thus, Bio Dynamic Farming, a precursor to the organic farming movement, developed in Germany by Rudolph Steiner in the 1920s was based on a holistic consideration of soil, plants and animals in what was meant to be a self-sustaining system. However, Biodynamic Farming also accepted astronomical influences accepting phases of the moon to be a factor in appropriate times for planting, cultivating, or harvesting. Steiner’s bizarre theories included the concepts that rotted manure inside a buried cow horn had magical properties.

The organic movement that was destined to become an important force in the 20th century was strongly influenced by a mycologist, Sir

Albert Howard (1873-1947), on the basis of his theory that unhealthy soils were a cause of plant and animal diseases. A composting system was developed in India (Indore process) in the 1960s that was widely promoted. He was a severe critic of the agricultural research establishment and his reputation was diminished by his virulent and often exaggerated attacks. He strongly influenced an unlikely prophet, J.I. Rodale (1898-1971), a promoter and journalist who was responsible for the development of the organic movement in the United States. Rodale first became a force in body building magazines and branched out to organic gardening and health via nutrition and supplements. His magazine *Organic Gardening* at one time had a circulation of 1.3 million while *Prevention* reached 2.4 million. His movements became popular in the 1960s despite some of his outrageous claims and personal vendetta against the established health establishment. Upon his death his organization was taken over by his son Robert Rodale (1930-1990) who was more moderate and established The Rodale Institute to foster organic movement and health. The organic movement was to generate powerful advocates worldwide as a result of the book *Silent Spring* by Rachel Carlson warning of the dangers of the pesticide 2, 4-D. Jeremy Rifkin prolific author and economist and a severe critic of biotechnology was in large part influential in having the organic movement include transgenesis (genetic engineering) among its prohibitions and, in turn, has been accused as being anti-science by his detractors. It should be pointed out that many of the goals of the organic movement are shared by the horticultural scientists who are sympathetic with their aim to reduce pesticides and increase organic matter in soils but do not acceptance their doctrinaire approach. Thus, in the realm of pest control an alternative methods called integrated pest management (IPM) has been developed that strives to find more environmentally sensitive approaches, but does not avoid agricultural chemicals when appropriate.

Despite the mysticism and some unscientific views of the organic movement, it had sufficient allure and appeal to make it a significant force in agriculture, building on the fear of the public for the perceived dangers of pesticides in food. The general public in developed countries, long suspicious of manures and night soil in agriculture and taught to be suspicious of food and drink in poor countries, took a 180 degree turn and became fearful of inorganic fertilizer and pesticides. In an amazing transformation, organic horticulture became main stream and inspired powerful advocates mostly on emotional grounds based on fear despite the illogic of many established practices of organic horticulture. Thus, inorganic fertilizer was eschewed despite the wide

acceptance of hydroponic vegetables in many parts of the world. Soil amendment with rock phosphate or lime was considered acceptable, whereas superphosphate fertilizer was excluded. Pyrethrums, compounds from *Chrysanthemum* species, were acceptable as insecticides but not the modified compounds called phyrethrins. Spores of *Bacillus thuringensis* were acceptable to control insects but the use of the gene encoding the toxin and introduced to the plant via transgene technology was considered anathema. Compositing was revered while micro-propagation was frowned upon as a restriction of the inherent right of plants to complete their life cycle normally. The broader movement known as the environmental movement similarly has developed an ethos of its own that its proponents accept with religious fervor, for example extolling wilderness over parks and traditional agricultural practices over scientific agriculture and development (Janick and Muresan, 2010).

The diatribe of the organic and environmental movement against genetically modified food is considered a problem by the plant improvement community in light of the fact that most present day food products contain genetically transformed corn and soybean products with no evidence of ill effects as well as the general acceptance of genetically transformed medicinal drugs. The possibility of reducing pesticides by genetically modified (GM) resistant crops would seem to be a “no brainer” because of the overuse of pesticides in many third world countries. Yet a new eggplant that contains the *BT* gene, a bacterial gene that is a built-in insecticide and approved by the scientific community of India, was finally rejected by the government on the specious argument that the genes would escape into wild species. The prohibition against transgenic crops has been accepted by the European community, but genetically transformed cotton is widely used in China. The issues and controversies regarding transgenesis is ongoing.

At the present time a serious debate is underway regarding the ability of strict organic production to produce sufficient quantities of food for a planet in which human population is expanding and expected to increase 50% by 2050. In addition, the higher prices of organic food has engendered the entry of corporate agriculture into organic farming, antithetical to the organic philosophy which has encouraged local family farm producers and is fearful of corporate farming. The controversy is ongoing.

7. CONCLUSIONS

Horticulture is so basic to human existence that it is no wonder that it has permeated religious beliefs that have developed in agrarian societies. The universal appeal of our beloved horticultural plants with their delightful and delicious flavors and beautiful appearance, their health and medicinal values, their aromas and fragrances, their beautiful appearance and importance in the environment would seem to suggest a mystical origin designed specifically by gods for the enjoyment of humans. In fact their very presence is considered a proof of the deity by many. It is personified in the biblical aphorism:

And God said, I give you every seed -bearing plant on the face of the whole earth and every tree that has fruit with seed in it. They will be yours for food. Genesis 1:29.

REFERENCES

- Durant, W. 1954. Our oriental heritage. The Story of Civilization: Part 1. Simon and Shuster, New York.
- Goor, A. and M. Nurock. 1968. The fruits of the Holy Land. Israel Univ. Press. Jerusalem
- Janick, J. (ed.). 2002. Proceedings of the workshop: History of the Organic Movement. *Hort. Technology* 2(2):262-283.
- Janick, J. 2007. Fruits of the bibles. *Hort Science* 42(5):1072-1076
- Janick, J. and C.S. Mure^oan. 2010. Demonization of science, sanctification of poverty. *Chronica Horticulture*. 40(4):24-26.
- Moldenke, H.H. and A. L. Moldenke. 1952. Plants of the bible. Chronica Botanica, Waltham, Massachusetts.
- Impelluso, L. 2003. Nature and its symbols. The J. Paul Getty Museum, Los Angeles
- Nicolosi, E., S. La Malfa, M. El-Otmani, M. Negbi and E.E. Goldschmidt. 2005. The search for the authentic citron (*Citrus medica* L.): Historic and genetic analysis. *Hort. Science* 40(5):1963-1968
- Walsh, C.E. 2000. The fruit of the vine: viticulture in ancient Israel. Eisenbrauns, Winona Lake, Indiana.