

THE AVOCADO (*PERSEA AMERICANA*, LAURACEAE) CROP IN MESOAMERICA: 10,000 YEARS OF HISTORY

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Abstract. The most ancient evidence of the existence of the avocado tree (*Persea americana*, Lauraceae) in Mesoamerica is about 10,000 years ago in Coaxcatlan, Puebla (Mexico). Since then, the history of the avocado has been preserved and recorded in Mesoamerica, the domestication center for the species, and in northern South America, where pre-Hispanic Mesoamerican cultures dispersed it. In colonial times, the Spanish valued the avocado fruit highly and documented it in numerous texts. Since then, the avocado tree has been introduced into places where the climate is appropriate for its cultivation. Avocado is now the fourth most important tropical fruit in the world, and Mexico is the main producer, with more than one million metric tons produced in 2005.

Resumen. La evidencia más antigua de la presencia del aguacate (*Persea americana*, Lauraceae) en Mesoamérica es de hace 10,000 años, en Coaxcatlán, Puebla (México). Desde entonces, la historia del aguacate ha sido documentada en Mesoamérica, su centro de domesticación, y en el norte de Sudamérica, en donde fue dispersado por las culturas que habitaron en Mesoamérica en la época pre-Hispánica. En el tiempo de la Colonia, los españoles apreciaron esta fruta y la documentaron en numerosos textos. Desde entonces el aguacate ha sido introducido en los lugares donde el clima es apropiado para su desarrollo. Actualmente el aguacate es la cuarta fruta tropical más importante en el mundo y México es el principal productor con más de un millón de toneladas métricas producidas en el año 2005.

Keywords: *Persea americana*, Lauraceae, avocado, Mesoamerican cultures, Pre-Hispanic, colonial.

The relationship between humans and trees in Mesoamerica is very ancient, with trees having played a very important role in the history of many cultures that have inhabited this area (e.g., Mayas, Toltecs, and Aztecs; Sánchez-Colín et al., 2001; Telliz, 2000). One example is the Chontales, who lived near the forests of Tabasco (Mexico). They believed that the gods lived in the forests and that they must therefore maintain and conserve them (Vázquez-Dávila, 2001).

Among the trees used by ancient Mesoamerican cultures, the avocado (*Persea americana* Mill., Lauraceae) has had an important place not only in the diet but in the mythology and culture of different groups that have lived in the area. It is possible that, even before some human groups transitioned from hunter-gatherer

life styles to agriculture, that they valued the avocado fruit as nutritious, and managed and cultivated the crop in its natural stands for a long time (Gama-Campillo and Gómez-Pompa, 1992). Seed remains found in ancient human settlements in the Tehuacan Valley suggest that the avocado could have been used as early as 8000 to 7000 BC and possibly domesticated at least since 5000 BC by Mesoamerican groups (Smith, 1966, 1969). However, the relationship between humans and the avocado has been complex, so, in order to understand its actual status it is necessary to document its history.

In this paper, the social and cultural importance of the avocado crop since prehistoric times is presented along with a paleogeographical reconstruction of avocado history in Mesoamerica. Moreover, to document the relationship of the

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avocado with the customs and habits of Mesoamerican cultures from its beginnings 10,000 years ago up to the present, and following the methodology of Messer (2003), we

examined ethnohistoric and linguistic data as well as archaeobotanical remains (Smith, 2001) that provide evidence for the antiquity of avocado tree cultivation.

HISTORICAL-GEOLOGICAL ORIGIN

The origin of the avocado, as with any other species, cannot be explained without its historical-geological background (Graham, 1995). Ancestors of the Lauraceae family originated in Gondwana (Africa) and migrated to Laurasia (Europe; Raven and Axelrod, 1974). According to Chanderbali et al. (2001), the Lauraceae originated in Laurasia, from the Gondwanan ancestors. Subsequently, one part of the family migrated to Asia, and another, including the Perseae clade, migrated to North America (Renner, 2004). Later, when Central America was formed (Miocene-Pliocene) and mountain

building occurred, new habitats emerged and speciation took place due to geographical isolation (Scora and Bergh, 1992). Archaeological evidence shows that when the climatic conditions changed during the Paleocene glaciations, avocado ancestors migrated from North America to the south and became established in the more hospitable habitats of Mesoamerica (Schroeder, 1968; Storey et al., 1986; Scora and Bergh, 1992; Bergh, 1995). Evidence suggests that the complex geological history of Mexico has been the main evolutive factor for the avocado (Ramamoorthy et al., 1993).

THE PRE-HISPANIC PERIOD

The avocado has been consumed in Mesoamerica by human groups since prehistoric times (Mac Neish, 1964). Buckler et al. (1998) documented that from 16,000 to 8,000 BC the weather in this region was appropriate for avocado development. It is therefore possible that avocado cultivation began at this early time and continued to be used by different cultures that inhabited the Americas (Galindo et al., in press). Examples of these cultures and their use of the avocado are explained in more detail below.

Caral, Peru

In Peru, the Supe Valley was inhabited by the Caral civilization, the oldest known culture in the Americas (Solis et al., 2001). Ethnobotanical remains found here suggest a system of agriculture that depended on irrigation (Solis et al., 2001). Furthermore, recent findings indicate that the Supe Valley comprises a cultural complex going back as far as 3100 BC; and domesticated avocado botanical remains indicate that avocado was grown there at least since 1200 BC (Skidmore, 2005). Moreover, because there is no evidence of maize or any other grain (Skidmore, 2005), it is possible that avocado was an important staple for these people before other crops were grown there. In addition to the Caral civilization, there is also archaeological evidence that the avocado was a part of the diet of groups inhabiting the Moche Valley in northern Peru in 2500–1800 BC (Pozorski, 1979), and on the Peruvian coast in 1500 BC (Heiser, 1979).

Mokaya, Mesoamerica

In Mesoamerica, one of the first known cultures is the Mokaya (1800 BC). The Mokaya inhabited the Soconusco area during the Formative period (1500 BC–300 AD), and although the Mokaya name means maize, there is evidence that this was not their primary food source (Taube, 2004). As the Mokayas were a sedentary group engaged in food acquisition, with an incipient agriculture, it is possible that they used common fruits in the area, especially those as nutritive as the avocado, as a source of food. In addition, as the Mokayas were the forerunners of the Olmec and Maya cultures (Taube, 2004), they may have passed on to them their knowledge of the use and cultivation of trees, including the avocado.

Maya, Mesoamerica

Like the Chontales, the Mayas also had a special appreciation for trees. In the Popol Vuh, a Mayan holy book written in Mayan hieroglyphic script around 1550, there is a part that refers to the Creation Myth. In this part of the book there is an interesting reference to a place with many trees (“the delightful place”): “There, the creators found the yellow and the white maize as the appropriate food for men and from them they made the flesh when man was formed. In this beautiful place full of delights there were many trees of pataxte (*Theobroma bicolor* Bonpl.) and cacao (*Theobroma cacao* L.), and innumerable zapotes (*Pouteria sapota*

(Jacq.) H.E. Moore & Stearn), anonas (*Annona muricata* L.), jocotes (*Spondias purpurea* L.), nantzes (*Byrsonima crassifolia* (L.) Kunth.), and matasanos (*Casimiroa edulis* La Llave & Lex.)” (Anonymous, 2002).

There are paleoethnobotanical accounts suggesting the Maya used the coyol tree (*Acrocomia aculeata* (Jacq.) Lodd. ex. C. Mart.) as a source of food, oil, and/or wine (Lentz, 1991). It is also known that other fruit trees, such as ciruela (*Spondias* sp.), nance (*Brysonimia crassifolia* (L.) Kunth), avocado (*Persea americana*), and possibly zapote (*Pouteria* sp.), were common in the Copan Valley (Guatemala) from 900 BC to 900 AD, indicating a reliance on arboriculture as part of the subsistence strategy for the Mayas (Lentz, 1991). With regard to the avocado, Colunga-García and Zizumbo-Villareal (2004) have suggested that domesticated avocados from other cultural areas were introduced to the Maya lowlands by at least 3400 BC. The Mayas, however, had used avocado since ancient times (Fedick, 1995), and they were among several of the Mesoamerican cultures that domesticated this fruit (Gama-Campillo and Gómez-Pompa, 1992).

Iconographic Data

Since many documents that could have shed light on pre-Hispanic avocado history were destroyed by the Spanish in their effort to Christianize the cultures that inhabited Mesoamerica (Ossenbach, 2005), the iconographic data reveal important information about the relationship between the avocado and some Mesoamerican cultures. One example is the Maya civil calendar (Haab calendar) developed between 800 and 300 BC. In this calendar the name of each month is based on seasonal and agricultural events, and the 14th month is represented by a glyph representing the avocado. The Mayas called this glyph *Uniw* or *Uniiw* in their classic language and *K'ank'in* in the Yucatec of the 16th century (Landa, [1560] 1978; Kettunen and Helmke, 2005). Another example is in the Pacal tomb inscriptions in Palenque, Chiapas, Mexico. This tomb was built in 650 AD, and on the sides of the sarcophagus are 10 figures representing Pacal's ancestors, 9 of them men and 1 a woman (Schele, 1974). Every figure emerges from the earth, and behind each of them there is a tree with fruits that include the cacao, avocado, soursop (*Annona muricata* L.), and chicozapote

(*Manilkara zapota* (L.) P. Royen) (Schele, 1974). These figures represent a forest growing around the king's sarcophagus and also represent the main fruit trees the Mayas cultivated around their homes, as it was thought that their ancestors were reborn as the trees (Schele, 1974, 1998).

Other interesting iconographic data that support the importance of the avocado in Mesoamerica is found in “El Codice Mendoza,” a manuscript painted by an Aztec *tlacuilo* (“artist”) at the time Don Antonio de Mendoza was viceroy of New Spain (“Nueva España”; Mendoza, 1989). In this manuscript there is a glyph representing Ahuacatlan, whose name means a place where avocado is abundant. This town was identified by a tree with a tooth in the trunk (*ahuacacahuitl*) and a *calli*, meaning place or town (Telliz, 2000). Castillo (1978) has placed this town in the state of Jalisco (Mexico), because the other towns mentioned in the same plate belong to this area. In addition to the iconographic data, there is also an Aztec legend that describes the way Yaotl was transformed into an avocado grasshopper (*ahuacachapulín*) as punishment when he disobeyed the gods (Robelo, 1951).

Linguistic Data

In addition to the iconographic references, linguistic data show the ways different human groups used plant and animal names to record their experiences and secure the survival of their history. However, according to Navarrijo (1995), the presence of a plant or animal in nature alone is not enough for it to be named. It is necessary for the society or human group to acknowledge the importance of the species before naming it (Navarrijo, 1995). Understanding the naming and significance of avocado is the first step in understanding the cultural perceptions that various groups had of avocado; and two or more names for a single species represented a greater cultural significance (Bye, 1993). For avocado, the fact that many cultures recognized it with a name demonstrates that it was an important tree. For example: some Maya groups, such as the Pokomchi, Pokoman, Cakchiquel, Quiche, and Uspanteca, named the avocado *oj* (Gama-Campillo, 1992; Schieber and Zentmyer, 1992); the Chucutamanes, Tzental, Tzontzil, and Chnabal, *on* (Gama-Campillo, 1992; Schieber and Zentmyer, 1992; Landa, [1560] 1978); the Kekehi, *oh* (Popenoe et al.,

1997); the Chicomulcelteca, *ou* (Popenoe et al., 1997); the Choi, *um* (Popenoe et al., 1997); the Chorti and Chontal, *un* (Popenoe et al., 1997); the Otomi, *ntzani* (Popenoe et al., 1997); the Zapotec, *yaus*, *yashu*, *ishu*, or *isu* (Popenoe et al., 1997); the Mixe, *cuchpa* (Popenoe et al., 1997); the Chibcha, *cura* (Popenoe et al., 1997); the Tarascos, *cupanda* (Popenoe, 1963);

the Quekchi, *o* (Gama-Campillo, 1992); and in totonaco, *cucata* (Cortés, [1522] 1970). But the name in contemporary Spanish—*aguacate*—comes from the Aztec word *ahuacaquahuitl*, which means “testicle.” In South America, the Incas gave the name *palta* to the avocado, because it was brought from a place named Palta (Vega, [1605] 1995).

EARLY DISPERSION AND COMMERCE

In Mesoamerica, many cultures shared religious beliefs, art, architecture, science, and technology for thousands of years (Wolf, 1967). In addition, since early times, a wide network for commercial exchange existed, and the different cultures inhabiting the area shared many traits (Ortiz and Rodríguez, 2000). Because of this, it seems reasonable to think that the avocado was an important exchange product. For instance, by 1600 to 500 BC, the Olmec was a complex society with a wide distribution in Mesoamerica and an extensive network of commerce routes (Love, 2005). Based on evidence that suggests that the Olmec had contact with the Papayecas (Honduras) in 1200–1000 BC (Healy, 1978), and because this time coincides with the avocado remains found in this area (Healy, 1978), it is probable that the Olmecs brought the avocado as a commerce product.

Wolters (1999) proposed that the avocado and other crops were brought from Mexico to Ecuador and to northern Peru in pre-Columbian

times by the Valdivia culture (western Ecuador) and their successors. He proposed that in their travels by boat from west Ecuador to Peru and Middle America (since 2200 BC) and to southern Mexico (since 1450 BC), the Valdivias dispersed several plants, among them the avocado.

In addition, in “Los Comentarios Reales de los Incas,” Garcilazo de la Vega ([1605] 1995) writes about the way the avocado was brought to the Inca valleys. He describes the origin, kings, religion, laws, and government of the Incas and relates that when the king Tupac Inca Yupanqui conquered Palta (now Ecuador), he brought the avocado to Cuzco and to the Incas’ warm valleys (Vega, [1605] 1995). It is known that Yupanqui conquered Cuzco in 1450–1475 A.C. It is therefore not surprising that by the time the Spanish arrived in the Americas, the avocado was consumed from Mesoamerica to Peru (Webber, 1936; McPherson, 1955; Popenoe, 1963; Takashi, 1968), an area settled by agricultural people by that time.

COLONIAL TIMES

When the Spanish arrived in the Americas, the New World flora and fauna attracted the attention and curiosity of many chroniclers who were interested in the description and identification of new species, mainly with medicinal rather than botanical purposes. These chroniclers recorded many descriptions of the cultivation and use of native plants, thus providing important ethnohistoric information on the cultures inhabiting the Americas at that time (Ossenbach, 2005).

The first written description of the avocado was made by Martín Fernández de Enciso in “La Suma de Geografía,” published in Sevilla, Spain, in 1519. He found the avocado in Yaharo (now Colombia) and described it as “an orange, and when it is ready for eating it turns yellowish; that which it contains is like butter and is of marvelous flavor, so good and pleasing to the palate that it is a marvelous thing.” In addition

to Fernández de Enciso, other chroniclers have also written about the avocado: Fernández de Oviedo, in “Sumario de la Natural Historia de las Indias” ([1526] 1996), described it as being like a pear but better; Cervantes de Salazar, in “Crónica de la Nueva España” ([1594] 1985), described it as being like a fig but bigger; Landa, in “Relación de las Cosas de Yucatán” ([1560] 1978), described it as a big and fresh tree with fruits like a courgette; Vega, in “Los Comentarios Reales de los Incas” ([1605] 1995), referred to the avocado as a tasty and healthy fruit for sick people, which, when eaten with sugar, is like a preserve; Ximénez, in “Libros de la Naturaleza y Virtudes de las Plantas y Animales, de Uso Medicinal en la Nueva España” ([1615] 2001), described the *ahuacaquahuitl* tree as being like an oak with orange leaves, small flowers, and fruits like figs.

At the end of the 16th century, the king of Spain and the Indies, Felipe II, asked Francisco Hernández for a description of the plants, animals, and minerals from New Spain, with a particular focus on the virtues and uses of them. In his book, "Historia de las Plantas de la Nueva España," he described the *ahoa-caquahuil* as a tree like an oak, with hanging black fruits like figs and with anise-scented leaves, and he added that this tree grows everywhere in New Spain (Hernández, [1605] 1942). Likewise, during the same period, Antonio de Ciudad Real ([1590] 1993) wrote "Tratado Curioso y Docto de las Grandezas de la Nueva España." In his books, he described the avocado in Mexico as a fruit the size and color of an early fig, with a big seed and little flesh but tasty and healthy even though in other places they were bigger; and he documented the presence of avocado in the town and monastery of Cuauhacachulan (Tlaxcalla episcopate), in Tehuacan (Puebla), in Iztapa and Comitán (Chiapas) in Tlaxcala, in Michoacán, and in Yucatán. Also, in his trip to Guatemala he described avocados in the town of Apenega and in the margins of the Atitlán Lake (Ciudad Real, [1590] 1993).

Moreover, there are at least three interesting mentions of the avocado used as a tribute. Friar Diego Durán ([1867] 1967) wrote in the mid-16th century about the tributes and riches that the people governed by the Aztecs gave to them. Among them were the fruits, especially the ones from the warm lands, like the avocado (Durán, [1867] 1967). In "El Códice Mendoza" (Mendoza, 1989) there is a glyph for the avocado tree (*ahuacacahuil* in the Nahuatl language) representing the merchandise the town of Ahuacatlan gave as a tribute to the Aztecs. In "Suma de la Visita de los Pueblos," an inventory of goods obtained between 1531 and 1544 from 907 towns in Central Mexico, Aculma is reported as a town that gave in tribute, among other merchandise, 10 avocados (Paso y Troncoso, 1905). In addition, it has been documented that the avocado was sold, among other fruits, in the Tlatelolco *tianguis* (open-air market) in Tenochtitlán (Cervantes de Salazar, [1594] 1985) and consumed by the Aztec nobility (Sahagún, [1570] 2002).

In South America, the avocado has been described by several chroniclers. Among them, Pedro de Cieza de León, in "La Crónica del Perú," described his experiences from 1532 to

1550, and according to him there were avocados all over the valleys of the plains in the provinces from Tamboblanco to San Miguel city on the Peruvian coast and in the Cali region of Colombia. He also mentioned having seen many avocados in Puerto Viejo province (Costa Rica) and in the equinoctial line (Cieza de León, [1553] 1962). Friar Gaspar de Carvajal ([1542] 1999), in his book "Relación del Nuevo Descubrimiento del Famoso Río Grande de las Amazonas," referred to Omagua, a town located in northeastern Peru in the Amazon rain forests, as a place where avocados and other fruits were abundant. Later Don Jorge Juan and Don Antonio de Ulloa ([1748] 1970), in their book "Del Viaje a la América Meridional," described the avocado as a common fruit in the lands around Quito (Ecuador).

Avocado, besides being consumed by people, was used to feed domestic animals. For example, pigs would eat the ripe fruit falling from the trees (Labat, [1694] 1964). In his book "Nouveau Voyage Aux Isles de L'Amérique," Labat mentioned that the meat of these animals had an excellent flavor when they were fed with avocados. According to Benavente ([1536] 2003), dogs and cats would also eat all the avocado types; after a good meal of hen they ate avocados, as a satiated man after eating meat has an olive.

Of course we cannot ignore the medicinal uses of avocado. When Garcilazo de la Vega described the avocado, he wrote that the fruit is delicious and very healthy for sick people (Vega, [1605] 1995). Friar Francisco Ximénez in 1615 described the avocado leaves as dry and warm, and for this reason they were commonly used in lavatories (Ximénez, [1615] 2001). The avocado seed rubbed on a swollen instep healed it and eliminated bruises, and because of certain astringent characteristics, avocado healed the blood chamber and prevented the splitting of the hair tips; and if you made any mark on the seed with a pin or any other object, the stain on a cloth would never disappear (Ximénez, [1615] 2001).

The Spanish liked the avocado so much that they distributed it to their other colonies in the Americas, in the eastern hemisphere, and to Europe (Knight, 2002). In Europe, the first introduced avocado was the West Indian type (Williams, 1977). Avocado was introduced to Indonesia by 1750, to the Philippines in 1890, and to Brazil in 1809 (Knight, 2002).

AVOCADO DIVERSITY

In Mesoamerica, differentiation of many taxa, including *Persea*, has occurred (Ramamoorthy et al., 1993). When the first human groups arrived in Mesoamerica, it is possible that, among other species, they started to consume and select avocado ancestral varieties (Mac Neish, 1964; Smith, 1969), thus initiating selection and domestication of the avocado. As a result, there are at least three varieties of avocado with differences related to the ecological preferences of the tree and fruit characteristics (Ashworth and Clegg, 2003): (1) *Persea americana* var. *drymifolia* (Schlecht. et al. Cham. Blake) (Mexican) is characterized by a relatively good cold tolerance and small fruits covered by a thin, purplish-black skin; (2) *P. americana* var. *guatemalensis* L. Wms. (Guatemalan) is somewhat cold tolerant, and the fruit has a thick, tough skin, which remains green until maturity; (3) *P. americana* var. *americana* (West Indian) is adapted to humid tropical conditions, and the fruit has a smooth, easy-to-peel skin and a flesh with an almost sweet taste not found in the other two varieties (Williams, 1976; Bergh and Ellstrand, 1986). In addition, Ben-Ya'acov et al. (2003) proposed *P. americana* var. *costarisensis* (Costa Rican) as another horticultural variety, but Van der Werff (2002) considers that much of the avocado variation can be attributed to the cultivation process and prefers to ignore the cultivated varieties.

In addition, the diversity of the avocado has been known since pre-Hispanic times. Benavente, in his "Historia de los Indios de la Nueva España" ([1536] 2003), made a distinction among different avocado types: "the ones common in all this land and all the year, are like early figs. Other avocados are as big as large pears, and are so good like the best fruit in the New Spain. There are others as big as a small pumpkin; ones with a big seed and little flesh and others with more flesh." Sahagún ([1570] 2002) also described three different types of avocado: the *ahuacatl* or *ahuacacahuatl* has dark green leaves, and the fruit is black in the outside and white and green in the inside; the *tlacazolahuacatl* is like the former but bigger; and the *quihahuacatl* is green in the outside and very good to eat.

Other chroniclers not only described the different avocado types but situated them geographically. Friar José Acosta, in 1590, in his "Historia Natural y Moral de las Indias" differentiated between the Mexican avocado and the

one from Peru. He described the avocados from Peru as big fruits with a hard shell that peels easily, and the ones from Mexico as mostly small with a thin shell that peels like an apple (Acosta, [1590] 1985). These descriptions coincide, respectively, with the West Indian and Mexican avocados described by Bergh and Ellstrand (1986).

It is also interesting the way Friar Bernabé de Cobo, in his book "Historia del Nuevo Mundo" ([1653] 1956), described three different avocado types: "The Palta in Yucatan is a tree of very attractive appearance, of the size of a large fig tree; its leaf is similar to that of the mulberry and its fruit is one of the finest in the Indies; in some regions it becomes as big as a small squash or large citron. The Palta has a thin skin, more tender and flexible than that of a Ceuta lemon, green externally, and when the fruit is quite ripe, peeling readily. It has the largest seed that I have ever seen in any fruit, either in the Indies or Europe; it is as large as a hen's egg, and spindle shaped; it is of a reddish white substance, tender like the meat of a chestnut, and covered with a grayish parchment. It has the flavor of bitter almonds, and when pressed it yields an oil like that of the almond. Between the seed and the outer skin is the meat, slightly thicker than one's finger except at the neck where it is very thick. It is of whitish green color, tender, buttery, and very soft. Some people eat it with sugar or salt, others just as it comes from the tree, it being of such good flavor that it requires no seasoning. But, although it is very pleasant to the taste, it should be eaten in moderation because it is considered to be heavy and indigestible. The best Paltas come from hot, dry regions; in Peru they grow in the Valley of Lea. A second kind of Paltas is a large, round one which is produced in the province of Guatemala, and which does not have as smooth skin as the first. The third is a small Palta found in Mexico, which in size, color, and form resembles a breva fig; some are round and others elongated, and the skin is as thin and smooth as that of a plum. In some regions they cut the immature Palta in small bits and put it in brine, to take the place of olives. The tree wood is useful in building, and for fuel." These avocado descriptions also resemble the ones made by Bergh and Ellstrand in 1986: the palta in Yucatan would be the West Indian avocado; the second kind of palta the Guatemalan type; and the third the Mexican type.

THE AVOCADO IN MODERN TIMES

Today the avocado is cultivated all over the world. In 1856 avocados were brought to California by Nicaraguan settlers. In Israel, the first avocado was introduced in 1908. From 1933 to 1998 avocado selections were introduced in Central America, the Caribbean, North and South America, Africa, Asia, Oceania, and Europe (Knight, 2002). In recent years, the avocado has become the fourth most important tropical fruit in the world, and it continues to increase in importance in many places (Bergh, 1992). China, for example, produced 45,000 tons in 1996, whereas in 1991 there was no avocado production reported (Knight, 2002). At present, Mexico is the main producer (Foreign Agricultural Service, USDA, 2006) with 1,021,515 tons in 2005 (SIAP, 2007). However, in Mesoamerica avocado trees are still cultivated in traditional orchards, backyard gardens, and as living fences and they are consumed and sold on a regional scale. Traditional orchards have not been intensively managed and they therefore preserve populations that still resemble their wild relatives thus providing opportunities for a better understanding of avocado domestication (Miller and Schaal, 2005).

Current varieties and rootstocks for avocado cultivation in the world are the products of various breeding programs based on exploration, collections, conservation, and evaluation trials throughout their regions of origin and dispersion (Mijares and López, 1998). Indeed, many modern commercial plantings are new varieties and cultivars, obtained by hybridization of various materials collected in Mexico and Central

America (Lemus et al., 2005), or they have arisen as chance seedlings (Bergh, 1992), probably due to the still existing genetic variability of the avocado.

At present there is a great need for the introduction of cultivars to improve quantity, quality, uniformity, and seasonal distribution; and biotechnology techniques promise new tools for expediting these breeding programs and making avocado breeding much more efficient (Bergh, 1992; Clegg et al., 1999). In fact, research in this area has already resulted in cultivars with improved disease tolerance and resistance (Nakasone, 1976).

Since ancient times, the avocado has played an important role in the diet of the native cultures of Mesoamerica. Archaeological and paleogeographical data provide an interesting look at the history of the avocado and its introduction to northern South America before the arrival of the Spanish. Archaeological data provide evidence of the origin and early relationship of the avocado with pre-historic human groups. The existence of local names for the avocado used by native groups also serves as evidence of the importance and use of the plant. Reports by Spanish chroniclers provide a fascinating look at the use of the avocado in the Americas at the time they arrived. Moreover, the ethnohistoric data have been important in documenting the management, uses, diversity, and geographic distribution of avocado in colonial times. Comparison of ancient, colonial, and modern references has provided useful data for clarifying the origin, dispersion, and domestication of the species.

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