

US00PP10275P

United States Patent [19]  
Nevo

[11] Patent Number: Plant 10,275  
[45] Date of Patent: Mar. 10, 1998

[54] 'SHUFRA' PISTACHIO TREE  
[76] Inventor: Amram Nevo, Post Office Box 500,  
Omer, 84965, Israel  
[21] Appl. No.: 739,494  
[22] Filed: Oct. 28, 1996  
[51] Int. Cl.<sup>6</sup> ..... A01H 5/00  
[52] U.S. Cl. .... Plt./30.1  
[58] Field of Search ..... Plt./30.1

[56] References Cited  
U.S. PATENT DOCUMENTS  
P.P. 4,953 11/1982 Anderson et al. .... Plt./30.1  
P.P. 4,994 3/1983 Anderson et al. .... Plt./30.1  
P.P. 5,837 12/1986 Anderson et al. .... Plt./30.1

OTHER PUBLICATIONS  
UPOVROM Disk 1997/03 UPOVROM Citation for 'Shu-  
fra' IL PBR 01653, accepted Jan. 13, 1991, 1997.

Primary Examiner—James R. Feyrer  
Assistant Examiner—Kent L. Bell  
Attorney, Agent, or Firm—Worrel & Worrel

[57] ABSTRACT

A new and distinct variety of pistachio tree which is some-  
what remotely similar to the 'Kerman' pistachio tree, but  
from which it is distinguished in a number of respects  
including by producing its crop with many fewer hours of  
winter chilling, by having more compact configurations  
permitting the trees of the new variety to be planted in  
patterns of greater density, by producing a crop which is  
mature for harvesting and shipment in Omer, Israel approxi-  
mately eight days prior to the crop of the 'Kerman' pistachio  
tree, and by producing a crop which equals or exceeds the  
quality of that of the 'Kerman' pistachio tree in nearly all  
respects.

2 Drawing Sheets

1

BACKGROUND OF THE NEW VARIETY

The present invention relates to a new and distinct variety  
of pistachio tree, *Pistacia vera* which will hereinafter be  
denominated varietally as the 'Shufra' pistachio tree, and,  
more particularly, to a pistachio tree which produces a crop  
of exceptional quality, which is mature for commercial  
harvesting and shipment approximately August 16 to Sep-  
tember 14 in Omer, Israel.

The discovery and development of new commercial vari-  
eties of pistachio trees presents particular difficulties. Fre-  
quently such varieties are discovered in countries of the  
Middle East which may make their introduction into the  
United States difficult. More significantly, many varieties of  
pistachio trees, grown principally for their commercial crop,  
do not produce such crops in sufficient volume, quality, or  
regularity of bearing to be commercially viable. Many such  
varieties produce nuts in which the shell does not split, or  
does not split sufficiently, in a high enough percentage of  
cases to have commercial appeal. Other chronic deficiencies  
include too high a percentage of nuts in which there is no  
kernel within the shell or where the nuts are otherwise  
defective. Finally, in many varieties of pistachio trees the  
flavor of the kernels is bland or otherwise lacks appeal and  
is therefore unacceptable for most usages.

The pistachio tree of the instant variety, by contrast,  
appears to excel in many of the attributes in which other  
known varieties are lacking.

ORIGIN AND ASEXUAL REPRODUCTION OF  
THE NEW VARIETY

The present variety of pistachio tree hereof was discov-  
ered by the inventor in 1982 as a newly found seedling in his  
orchard which was a designed plot of pistachio seedlings  
located in Omer, Israel. The parentage of the newly found  
seedling was an undefined, open pollinated female tree. The  
new variety was first asexually reproduced by the inventor  
in the orchard of origin in Omer, Israel in 1984. Such asexual  
reproduction was achieved by budding on young rootstocks

2

of the *Pistachia atlantica* variety and by top working some  
mature trees. The inventor has continuously observed the  
asexually reproduced trees and confirmed that they are in all  
respects identical to the parent tree.

SUMMARY OF THE NEW VARIETY

The 'Shufra' pistachio tree is characterized by producing  
an excellent quality nut with an orange hull coloration, a  
vivid dark red pellicle and a deep green kernel and which is  
ripe for commercial harvesting and shipment approximately  
August 16 to September 14 in Omer, Israel. The new variety  
is somewhat remotely similar to the 'Kerman' pistachio tree,  
but is distinguishable therefrom in numerous respects  
including by the aforementioned ripening date which is  
about eight days earlier than the 'Kerman' pistachio tree in  
Israel.

BRIEF DESCRIPTION OF THE DRAWING

The drawing consists of three photographs of the new  
variety of the present invention including a first photograph,  
designated "FIG. 1," showing mature fruit of the new variety  
growing on a branch thereof in a typical pattern; a second  
photograph, designated "FIG. 2," showing foliage of the  
subject variety growing in a manner representative thereof;  
and a third photograph, designated "FIG. 3," showing  
mature fruit of the new variety including a first in its natural  
outer hull, a second with the outer hull removed with the  
kernel left in place in the shell, a third wherein the kernel is  
whole and fully exposed having had the hull, shell and  
pellicle removed, a fourth in which the fully exposed kernel  
has been separated along the suture thereof and laid open to  
expose the interior thereof, and a fifth in which the kernel  
with its pellicle in place has been sectioned along a plane  
substantially right-angularly related to the suture plane  
thereof.

DETAILED DESCRIPTION

Referring more specifically to the botanical details of this  
new and distinct variety of pistachio tree, the following has



been observed under the ecological conditions prevailing at the orchid of origin which is located in Omer, Israel. All major color code designations are by reference to the *Nickerson Color Fan* produced by the Munsell Color Company Incorporated. Common color names are also occasionally employed.

## TREE

## Generally:

The tree as described herein is twelve (12) years of age. It is budded on *Pistachia atlantica* rootstock.

**Size—height.**—2.75 m (9.1 feet). The tree is compact permitting planting of an increased number of trees per unit of land. As compared with the 'Kerman' pistachio tree, ten percent (10%) to twenty percent (20%) more trees can be grown per unit of land. Thus, there is a comparative increase in crop yield per unit of land.

**Size—diameter.**—2.5 m (8.3 feet).

**Vigor.**—High.

**Chilling requirements.**—The new variety produces top quality nuts under climatic conditions in which other known varieties of pistachio trees of the same category cannot produce such a crop. For example, the 'Kerman' pistachio tree requires at least 800 hours of winter chilling (up to 7° C.). Preferably, the 'Kerman' variety has 1000 to 1200 hours of winter chilling in a season. The instant variety, by contrast, produces well at 500 hours of winter chilling. If a dormancy breaking treatment is applied, the instant variety can produce well under conditions as low as 440 hours of winter chilling. As a consequence, extensive new geographical areas will be available for pistachio nut production. Similarly, the production of this variety in geographical areas with over 500 hours of chilling will be substantially enhanced.

**Figure.**—The trees were trained and shaped for harvesting by hand; that is, on a low trunk of about 40 cm (1.3 ft.) high.

**Productivity.**—The parent tree, in twelve (12) consecutive years from the age of six (6) years until the age of seventeen (17), has yielded a total of 67.0 kilograms of dry in shell nuts. In the sixth year, the yield was 0.4 kilogram. In the seventeenth year, the yield was 9.7 kilograms. There is a clear pattern for alternate bearing. Some of the asexually reproduced trees of the new variety were grafted on *Pistachia atlantica* rootstock and some on *Pistachia vera* rootstock. As the trees have developed, there is no difference in shape or yield between the two. However, those grafted on *Pistachia atlantica* rootstock are slightly larger.

**Density.**—Good.

**Regularity of bearing.**—Alternate.

## Trunk:

**Size.**—Height—40 cm (1.6 feet).

**Characteristics.**—At 30 cm (1 foot) above ground.

**Diameter.**—11.5 cm (4.6 inches).

**Surface texture.**—Rather rough.

**Color.**—5 YR (6/1).

**Lenticels—number.**—Numerous.

**Lenticels—size.**—1.8 mm (0.072 inches).

## Branches:

**Size.**—Main Scaffold—26 mm (1.06 inches) to 40 mm (1.6 inches).

**Surface texture—mature.**—Rough.

**Color—one year or older wood.**—5 YR (7/2).

**Surface texture—immature growth.**—Smooth.

**Color—Immature branches.**—10 YR (4/4).

**Lenticels—numbers.**—Quite few.

**Lenticels—size.**—0.8 mm (0.032 inches) to 1.8 mm (0.072 inches).

## LEAVES

## Size:

**Generally.**—Compound. Mostly trifoliate, but there are also leaves of 1, 2 and 4 leaflets.

**Foliage.**—Abundant.

**Leaflets.**—Average length—Of the central leaflet—8 cm (3.2 inches) to 13 cm (5.2 inches). Of the side leaflets—5 cm (2 inches) to 8 cm (3.2 inches). Average Width—Of the central leaflet—4 cm (1.6 inches) to 8 cm (3.2 inches). Of the side leaflets—2.5 cm (1 inch) to 5.5 cm (2.2 inches).

**Shape:** Elliptic. Rather flat. Minutely cuspidate.

**Thickness:** 0.2 mm (0.008 inches) to 0.4 mm (0.016 inches).

## Color:

**Upwardly disposed surface.**—2.5 GY (5/5).

**Downwardly disposed surface.**—2.5 GY (4/3).

## Marginal Form:

**Generally.**—Entire.

**Leaf vein—thickness:** Midrib, 1.8 mm (0.072 inches) to 0.2 mm (0.008 inches). Laterals, 0.4 mm (0.016 inches) to 0.1 mm (0.004 inches).

**Color—leaf vein:** 2.5 GY (9/8).

**Leaf glands:** Practically none.

## Petiole:

**Length.**—3 cm (1.2 inches) to 5.5 cm (2.2 inches).

**Thickness.**—1.5 mm (0.06 inches) to 3 mm (0.12 inches).

**Color.**—2.5 GY (8/9).

**Petiolar sinus:** 120° to 140°.

**Stipules:** None.

## FLOWERS

**Date of bloom:** First receptive stigmas the first week of April. More and more are coming on for ten to twelve days.

**Bloom amount:** In accordance with alternate bearing, abundant on "on" years and less on "off" years.

## Size:

**Flowers—generally.**—Each single flower 2 mm (0.08 inches) to 3 mm (0.12 inches) in diameter.

**Blossom.**—Medium producing 30 to 60 nuts per cluster. The actual total number of flowers in each blossom is much higher, but a large portion thereof never set fruit.

## Petals:

**Color.**—Whole blossom green.

**Stigmas.**—Cream.

## FRUIT

**Maturity when described:** Selective hand harvesting August 16 to September 14. Mechanical harvesting about September 5 in Omer, Israel. The optimal set day for mechanical harvesting appears to be eight (8) days earlier than the 'Kerman' pistachio tree.

**Productivity:** Very good. The new trees of the instant variety start bearing a crop one year earlier than the new trees of the 'Kerman' pistachio variety.

**Distribution of nuts on tree:** Fairly well.



Tenacity: Good.

Hull:

*Texture*.—Smooth, strong and juicy when young.

Wrinkled, soft and tattered towards ripening.

*Pits*.—Rare.

*Form*.—The shape of the nut.

*Thickness*.—Around 1 mm (0.04 inches).

*Suture*.—Hardly a distinct suture.

*Color*.—In May, half green (2.5 GY 9/8) and half red (2.5 R 4/10) with many white dots. In August, orange. At ripening, fading orange.

*Dehiscence*.—At ripening, cracks in irregular lines.

*Tendency to Crack*.—No actual splitting by itself, but does crack or split according to the splitting endocarp.

Nut:

*Generally*.—Dry in shell. Quality of the nuts is excellent. Equals or above that of the 'Kerman' pistachio tree in almost all respects.

*Average weight*.—Dry in shell is 1.54 gr. 'Kerman' pistachio tree is 1.51 gr.

*Size—length*.—22 mm (0.88 inches).

*Size—width*.—14.3 mm (0.58 inches).

*Size—thickness*.—13.7 mm (0.56 inches).

*Form*.—Oblong, round.

*Color*.—Ivory.

*Pits*.—Rare.

*Base*.—Rough.

*Stem scar*.—Rough.

*Apex*.—Fully open (split).

*Inner surface*.—Smooth.

*Split*.—Over ninety percent (90%), by number, of the filled nuts are very well split. Almost ten percent (10%), by number, are closed.

*Percent by weight to kernel*.—53.3%.

*Percent by weight to shell*.—46.7%.

Kernel:

*Generally*.—From dry, in shell nuts.

*Size—Length*.—19.6 mm (0.08 inches).

*Size—Width*.—11.5 mm (0.47 inches).

*Size—Thickness*.—11 mm (0.45 inches).

*Form*.—Oblong.

*Thickness*.—11 mm (0.45 inches).

*Stem scar*.—Smooth.

*Apex*.—Roundish.

*Surface texture*.—Smooth.

*Kernel color*.—Green (5 GY 6/8).

*Numbers of doubles produced*.—Very rare.

*Flavor*.—Excellent. The natural flavor is much better than that of the 'Kerman' pistachio nuts.

*Eating quality*.—Excellent.

*Pellicle—color*.—Dark red.

*Pellicle—thickness*.—0.1 mm (0.004 inches).

*Pubescence*.—None.

Use: All uses and forms. From fresh to bakery and industrial food products, but mainly as a snack where salted and roasted.

Keeping quality: Very good.

Resistance to disease: Similar to the 'Kerman' pistachio tree and all other varieties.

Harvesting: Hand harvesting on small family plots.

Mechanical harvesting in large scale farming operations.

Shipping and handling qualities: Very good.

Although the new variety of pistachio tree possesses the described characteristics noted above as a result of the growing conditions prevailing in Omer, Israel, it is to be understood that variations of the usual magnitude and characteristics incident to changes in growing conditions, irrigation, fertilization, pruning, pest control, climatic variation and the like are to be expected.

Having thus described and illustrated my new variety of pistachio tree, what I claim as new and desire to be secured by Plant Letters Patent is:

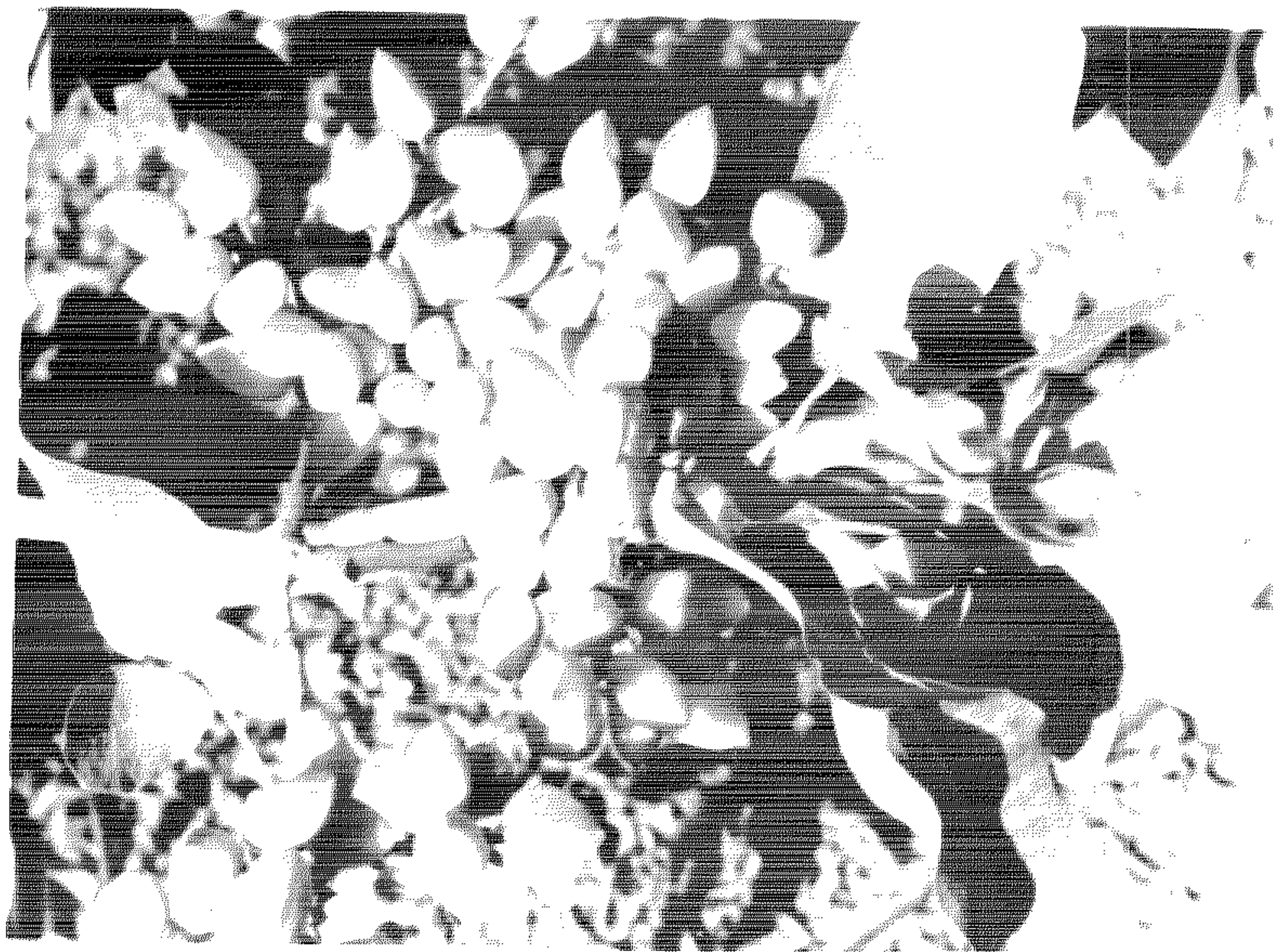
1. A new and distinct variety of pistachio tree substantially as illustrated and described which is somewhat remotely similar to the 'Kerman' pistachio tree, but from which it is distinguished in a number of respects including that the trees are capable of producing a high quality crop with many fewer hours of winter chilling; the trees are compact and thus can be planted in patterns of greater density; and by producing its crop which is mature for commercial harvesting and shipment approximately September 5, or about eight days earlier than the 'Kerman' pistachio tree in Omer, Israel.

\* \* \* \* \*



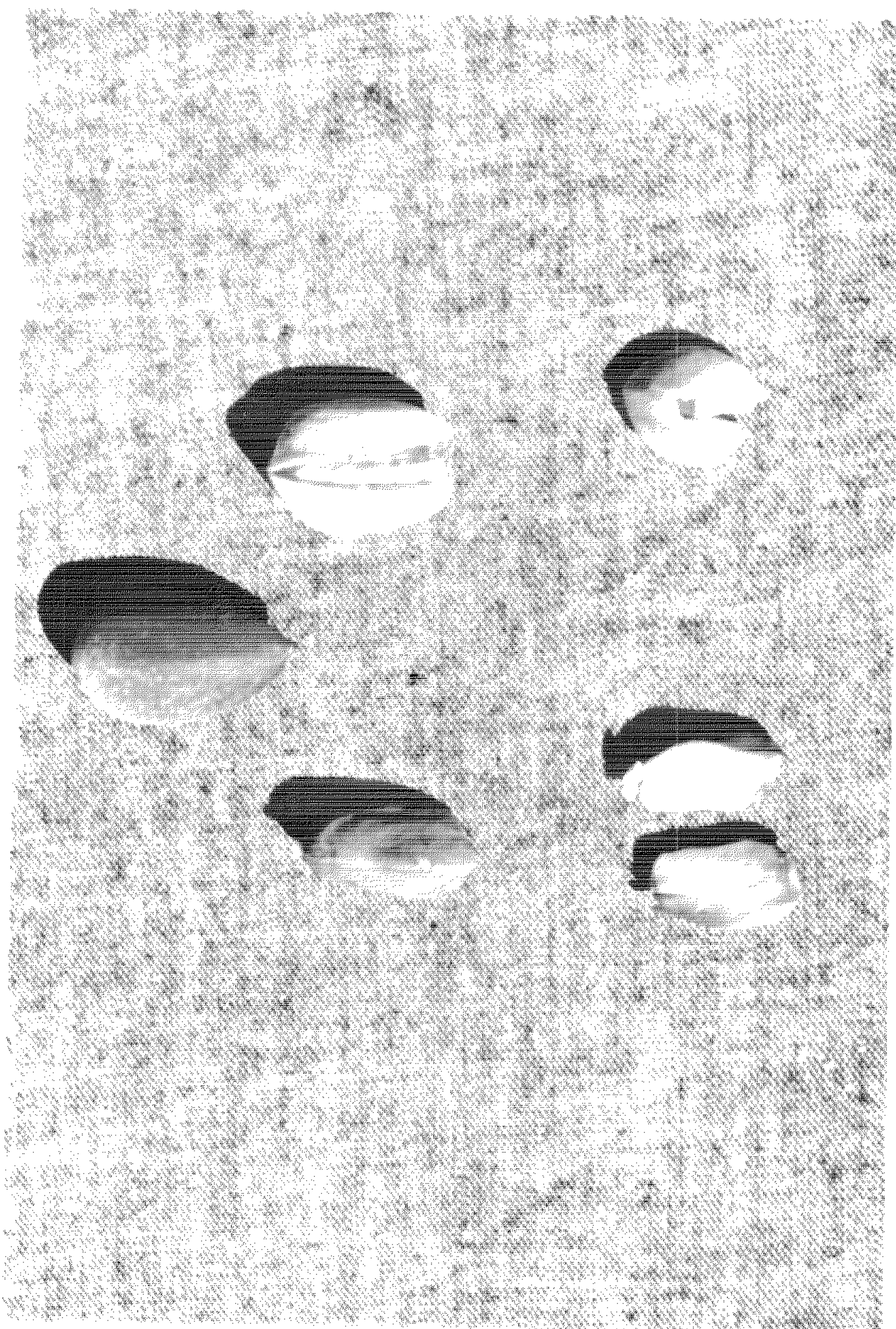


*Fig. 2*



*Fig. 1*





*Fig. 3*



UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

PATENT NO. : PP 10,275

DATED : March 10, 1998

INVENTOR(S) : Amram Nevo

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Column 4, line 66, delete "beating" and substitute  
---bearing---.

Column 5, line 11, delete "ripening" and substitute  
---ripening---.

Signed and Sealed this  
Second Day of June, 1998

*Attest:*



BRUCE LEHMAN

*Attesting Officer*

*Commissioner of Patents and Trademarks*