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(12) **United States Plant Patent**
Tous

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(54) **OLIVE TREE, 'ARBOSANA OLINT'**

(50) Latin Name: *Olea europaea*
Varietal Denomination: **Arbosana Olint**

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See application file for complete search history.

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(57) **ABSTRACT**

The present invention comprises a new and distinct clonal
system of *Olea europaea* cultivar 'Arbosana OLINT'. This
new invention possesses all of the resistance to olive knot
and cold temperature while producing an excellent commer-
cial crop within three to four years in the Sacramento Valley
of northern California, and is primarily grown for olive oil
production. The dense planting and comparatively small
height provides for mechanical harvesting with a very good
to excellent level of production. The plants are ideally suited
for olive oil production, mechanical harvesting and high
density planting. The fruit matures in northern California
during the fourth week of October.

5 Drawing Sheets

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Olive tree: (*Olea europaea*).

BACKGROUND OF THE NEW VARIETY

The present invention relates to a new and distinct variety
of olive plant, *Olea europaea*, and will hereafter be denomi-
nated varietally as 'Arbosana OLINT' and more particularly
to an olive plant that produces fruit for harvest during the
fourth week of October in the Gridley area of the northern
Sacramento Valley in California and which is further dis-
tinguished as to novelty by having high productivity and
very good olive oil yield (19-20%) within three to four
years, as well as resistance to low temperature, leaf drop,
and olive knot (*Pseudomonas savastoni*).

This new invention relates to a new and distinct variety of
olive tree from which a clonal selection (naturally occurring
mutation) was originally identified from an olive orchard
located in Arbo del Penedes in Spain. The plant was first
selected from the orchard in 1989 and then was vegetatively
propagated (asexual) in 1991 and brought into the Institute
of Research and Technology for Agriculture and Food
located at Centre Demas Bove, Apartat 415 43280 Reus,

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Spain. The clonal selection from the variety 'Arbosana
Standard' (unpatented) possessed a branching pattern in
which the branching occurs higher up on the trunk and is
more upright, resulting in superior production, also uni-
formly in ripening with superior olive oil quality and quan-
tity.

ORIGIN AND ASEXUAL REPRODUCTION OF THE NEW VARIETY

This new variety has been asexually reproduced, dry
cuttings, at the site stated above, in Spain. After verification
of the superior characteristics in production, uniformity,
olive oil production and quality; vegetatively reproduced
cuttings were sent to the USA in 1997. Upon completion of
post entry quarantine requirements in Oregon, vegetatively
propagated cuttings of this new variety were shipped to
Gridley, Calif. where additional cuttings were asexually
propagated. In all cases the reproduced plants exhibited the
distinguishing characteristics of the original clonal selection.

SUMMARY OF THE NEW VARIETY

The new variety of olive was discovered through a
selection process from olive orchards growing in Arbo del

Penedes, Spain in the 'Arbosana Standard' variety (unpatented). Through a selection and evaluation process beginning in 1986 that was conducted over an eleven year period at which time the final clonal selection process was completed. Since this new variety is a small tree, usage is primarily for high density plantings (e.g., approximately 670 trees/acre). The new variety possesses the characteristics of resistance to low temperature, and leaf drop as well as olive knot (*Pseudomonas savastoni*). The new variety is late maturing during the fourth week of October, with high productivity and very good olive oil yield (19-20%) within three to four years. This rapid maturity compared to the common varieties grown in California ('Mission,' 'Sevil-lono' and 'Ascolano') takes about half the time to reach commercial production.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a color photograph of the new variety displaying the overall shape of a three year old tree.

FIG. 2 is a color photograph of the new invention showing it in the third leaf displaying it semi-erect in appearance.

FIG. 3 is a color photograph of a typical branch bearing fruit in clusters of 3-5.

FIG. 4 is a color photograph of the variety displaying upper and lower leaf surfaces.

FIG. 5 is a color photograph showing foliage at the top; in the middle a fruit cut in half displaying the flesh and the empty seed cavity on the left, the seed in the middle, the second half of the fruit with the seed in place on the right; and in the bottom of the photograph is a side view of the fruit on the left and the stem end of the fruit on the right on a ruler for scale.

DETAILED DESCRIPTION

Referring more specifically to the horticultural details of the new and distinct variety of olive trees, the following descriptions have been observed under the ecological details prevailing at the site of origin which is located near Gridley, Calif. in the Sacramento Valley of northern California. The age of the observed plant was 4 years. All major color designations are by reference to the Dictionary of color by Maerz & Paul, First Edition, 1930. Common colors are also employed.

TREE

This new invention has small trees:

Height.—5-6 feet (152-183 cm).

Width.—2.5-3 feet (76-91 cm).

Vigor.—Low.

Chilling requirements.—Normal for olives.

Figure.—Open.

Productivity.—Production level is uniform, with very good distribution through the branches, and good oil production.

Regularity of bearing.—Alternate.

TRUNK

Size: 5 inch (13 cm) circumference, 13 inches (33 cm) above ground.

Surface texture: Smooth.

Color code: Wild Iris (44-B-5).

Branches.—Size: small, 3-4 inches (8-10 cm) circumference at approximately 3 years.

Surface texture.—Mature: smooth. Immature: smooth.

Color.—One year or older: Dusty Green (22-C-1).

Immature: Light Grey (36-A-1).

Lenticels.—Number: Many. Small: less than 1 mm (0.04 inch).

LEAVES

Size: Small, opposite.

Length: 58-70 mm (2.26-2.73 in.).

Average.—64 mm (2.50 inches).

Width: 11-12 mm (0.43-47 in.) avg. 11.66 mm (0.46 inch).

Shape: Elliptic and nearly symmetrical.

Margin: Entire.

Apex: Acute.

Base: Cuneate.

Surface texture:

Upwardly disposed surface.—Smooth.

Downwardly disposed surface.—Slightly pubescent.

Color:

Upper disposed surface.—Chrome Green (22-L-12).

Downwardly disposed surface.—Chrysolite Green (19-K-3).

Leaf vein:

Color.—Chrysolite Green (19-K-3).

Thickness.—1 mm (0.04 in.).

Granular characteristics: None.

Petiole: Short, 5 mm (0.20 in.).

Thickness: 1.5-2 mm (0.06-0.08 in.).

Stem glands: None.

FLOWERS

Flower buds: Small, slightly pubescent.

Average bud size: 2.5-4.0 mm (0.10-0.16 inch).

Date of first bloom: Mid-May, Borne in particle.

Size.—Small, 2.5-4 mm (0.10-0.16 inch).

Petals.—Lobed corolla. Color: White (1-A-1).

Number of florets per inflorescence: 10-16.

Number of sepals: 4.

Number of petals: 4.

Fragrance: Very mild.

Reproductive organs: 1 pistil; 15-25 stamens.

Pollen color: Yellow, Empire Y. (9-K-3).

FRUIT

Date of maturity: 4th week of October.

Size: Small.

Weight: Approximately 3.4 grams.

Diameter: 13-15 mm (0.51-59 in.), average 15 mm (0.59 in.).

Length: 15-18 mm (0.59-0.70 in.), average 17.2 mm (0.671 in.).

Form: Elliptical and symmetrical to slightly symmetrical.

Suture: None.

Stem cavity:

Width.—2 mm (0.08 in.).

Depth.—2 mm (0.08 in.).

Length.—3 mm (0.12 in.).

Shape.—Elliptical.

Stem: Average 4.83 mm (0.19 in.).

Caliper.—Very small.

Apex: Slightly rounded.

Pistil point: Obscure.

Skin:

Thickness.—Less than 1 mm (less than 0.01 in.).

Texture.—Smooth.

Tendency to crack.—None.

Color code:

Ground color.—Apple Green (19-J-6).

Flesh color.—Oyster Gray (19-A-2).

Color of surface.—Oyster Gray (19-A-2).

Color of pit.—Oyster Gray (19-A-2).

Juice production: Oil production excellent.

Flavor.—Unique.

Ripening: Even.

SEED

Type: Cling.

Fibers: None.

Size: Small, less than 0.5 gram.

Length.—10 mm (0.39 in.).

Width.—6 mm (0.23 in.).

Thickness.—6 mm (0.23 in.).

Form: Elliptical, cross section is round.

Apex: Slightly pointed.

Color (dry): Grayish brown (46-D-3).

Texture: Slightly grooved.

Base: Truncate.

Mucron: Obscure.

Suture: Marked.

Sides: About even.

Ridges: Very faint and uneven.

Tendency to split: None known.

Use: Oil production and in some cases for canning.

Resistance: Yes, to olive knot.

Harvesting: Mechanical harvesting, late October.

OIL

The oil yield is approximately 19-20% when the skin of the fruit is mature green and the flesh is tannish and light green.

TABLE 1

<u>Chemical Analysis of 'Arbosana OLINT' Oil</u>	
Type of Fatty Acid	Percent of Total Oil Content
C16:0 Palmitic Acid	13.4
C16:1 Palmitoleic Acid	1.3
C18:0 Esteric Acid	2.0
C18:1 Oleic Acid	74.0
C18:2 Linoleic Acid	7.66
C18:3 Linoleic Acid	.9

M/P ratio (monosaturated fats/polysaturated fats): 8.9.

Polyphenols (ppm cateic acid): 2.78.

K225 (bitterness): 0.24.

Stability (hours at 248 degrees Fahrenheit): 13.5.

The plant shows resistance to low temperature, leaf drop, and olive knot (*Pseudomonas savastoni*).

What is claimed is:

1. A new distinct olive plant as described and illustrated that is characterized by having the general characteristics of the 'Arbosana Standard' (unpatented) variety but is distinguished therefrom in that it matures rapidly, producing olive oil yields having superior quality and quantity within three to four years, and has resistance to low temperature, leaf drop, and olive knot, with the plants being ideally suited for olive oil production, mechanical harvesting and high density planting, the fruit maturing in northern California in about the fourth week of October.

* * * * *

FIG. 1



FIG. 2



FIG. 3



FIG. 4



FIG. 5

