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(54) **OLIVE TREE NAMED ‘I 46’**

(50) Latin Name: *Olea europaea*
Varietal Denomination: **I 46**

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See application file for complete search history.

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(57) **ABSTRACT**
The new and distinct variety of olive tree variety ‘I 46’ is provided. The variety can be distinguished by its spreading growth habit, high yield and high oil.

8 Drawing Sheets

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Latin name of the genus and species:
Botanical classification:
a. Genus—*Olea*.
b. Species—*europaea*.
Variety denomination: The new olive tree claimed is of the variety denominated ‘I 46’.

CROSS REFERENCE TO RELATED APPLICATIONS

Co-pending U.S. application Ser. No. 18/445,927 filed Mar. 27, 2024, Ser. No. 18/445,919 filed Mar. 27, 2024, Ser. No. 18/445,920 filed Mar. 27, 2024, Ser. No. 18/445,930 filed Mar. 27, 2024, Ser. No. 18/445,922 filed Mar. 27, 2024, Ser. No. 18/445,921 filed Mar. 27, 2024, Ser. No. 18/445,924 filed Mar. 27, 2024, Ser. No. 18/445,929 filed Mar. 27, 2024; disclose olive tree varieties named ‘I 24’, ‘I 72’, ‘I 74’, ‘I 77’, ‘I 79’, ‘I 99’, ‘I 100’, and ‘I 101’ respectively. Such applications are related inasmuch as they have the same parentage, ownership, and/or inventorship.

BACKGROUND OF THE INVENTION

Field of the Invention

The present invention relates to a new and distinct variety of olive tree, which has been given the variety denomination of ‘I 46’.

Background of the Related Art

Olive oil continues to increase in popularity. Accordingly, there is a continuing need to develop new and improved olive oils to meet the increased demand for use in various food types and in cooking. Many olive varieties are self-sterile. As a result, there is a need for the development of

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new olive varieties which are self-pollination and produce a high yield of new and improved olive oil for commercialization.

SUMMARY OF THE INVENTION

The present invention relates to a new and distinct variety of olive tree, which has been given the variety denomination of ‘I 46’. ‘I 46’ is intended for use for oil production.

The new olive tree variety is a selection resulting from a controlled sexual cross of olive trees at Córdoba, Spain in 2008, involving a seed parent known as ‘Arbosana’ (unpatented) and a pollen parent known as ‘Koroneiki’ (unpatented).

The selection was subsequently evaluated for 10 years at Córdoba, Spain.

Asexual reproduction of the new variety by cutting propagation since 2014 at Córdoba, Spain has demonstrated that the new variety reproduces true to type with all of the morphological characteristics, as herein described, firmly fixed and retained through successive generations of such asexual propagation.

Selection criteria were early production, spreading growth habit, high yield, and high oil content.

Plants of the new variety differ from plants of the seed parent ‘Arbosana’ primarily in the maturation period, ‘I 46’ matures 6 weeks earlier and achieves fatty yields 2-5 points (%) higher than those of ‘Arbosana’. Plants of the new variety differ from plants of the pollen parent ‘Koroneiki’ primarily in the maturation period, ‘I 46’ also matures around 6 weeks earlier than its male parent ‘Koroneiki’ and has a fruit size slightly larger. This new variety stands out for its high production compared to its parents ‘Arbosana’ and ‘Koroneiki’. Additionally, this variety produces fruit with medium weight which are colored black at full maturity.

Plants of the new variety differ from the varieties mentioned in co-pending application Ser. No. 18/445,927 (for Olive Tree Named ‘I 24’), Ser. No. 18/445,919 (for Olive

Tree Named ‘I 72’), Ser. No. 18/445,920 (for Olive Tree Named ‘I 74’), Ser. No. 18/445,930 (for Olive Tree Named ‘I 77’), Ser. No. 18/445,922 (for Olive Tree Named ‘I 79’), Ser. No. 18/445,921 (for Olive Tree Named ‘I 99’), Ser. No. 18/445,924 (for Olive Tree Named ‘I 100’), and Ser. No. 18/445,929 (for Olive Tree Named ‘I 101’) as shown in Table 1 below:

TABLE 1

Variety Denomination	Parentage	Growth Habit	Vigor	Outstanding Agronomic Characteristics
‘I 46’	Arbosana x Koroneiki	Open	Medium	Extra-early ripening, high fat yield.
‘I 24’	‘Arbosana’ x ‘Koroneiki’	Weeping	Low	High production, good fat yield, drought tolerant
‘I 72’	‘Arbosana’ x ‘Koroneiki’	Upright	Medium	High production, drought tolerant
‘I 74’	‘Arbosana’ x ‘Koroneiki’	Open-Straight	Medium	Good production, drought tolerant
‘I 77’	‘Koroneiki’ x ‘Arbosana’	Compact	Medium-low	Good production, high fat yields
‘I 79’	‘Koroneiki’ x ‘Arbosana’	Open	Medium-high	High fat yields
‘I 99’	‘Arbosana’ x ‘Chiquitita’	Weeping	Low	High fat yield, drought tolerant
‘I 100’	‘Arbosana’ x ‘Chiquitita’	Weeping and Upright	Low	Drought tolerant
‘I 101’	‘Arbosana’ x ‘Chiquitita’	Weeping and Upright	Low-medium	Good fat yield, drought tolerant

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographic illustrations show the typical appearance of the new variety ‘I 46’. The colors are as nearly true as is reasonably possible in a color representation of this type. Colors in the photographs may differ slightly from the color values cited in the detailed botanical description which accurately describes the colors of the new plant. The photographs depict 5-year-old plants, planted in Córdoba, Spain.

FIG. 1 is a photograph of the new variety ‘I 46’, demonstrating stones.

FIG. 2 is a photograph of the new variety ‘I 46’, demonstrating spreading growth habit.

FIG. 3 is a photograph of the new variety ‘I 46’, demonstrating fruit size, fruit color, and branching habit.

FIG. 4 is a photograph of the new variety ‘I 46’, demonstrating behavior when grown in a hedge line

FIG. 5 is a photograph of the new variety ‘I 46’, demonstrating fruit and fruit color.

FIG. 6 is a photograph of the new variety ‘I 46’, demonstrating leaves.

FIG. 7 is a photograph of the new variety ‘I 46’, demonstrating fruit and fruit color.

FIG. 8 is a photograph of the new variety ‘I 46’, demonstrating fruits and stones. Left most, left of center, and right of center depict the side view. Right depicts stalk end view.

DETAILED BOTANICAL DESCRIPTION

The following detailed description sets forth the distinctive characteristics of ‘I 46’. The datum which defines these characteristics was collected from asexual reproductions of

the original selection. Dimensions, sizes, colors, and other characteristics are approximations and averages set forth as accurately as possible. The plant history was taken on plants approximately 5 years of age, and the descriptions relate to plants grown in Córdoba, Spain. Color notations are in reference to the standard Color Chart is that of The Royal Horticultural Society (R.H.S. Colour Chart, 2015 edition. London, England).

Classification:

- a. *Latin name*.—*Olea europaea* L.
- b. *Common name*.—Olive tree.
- c. *Variety name*.—‘I 46’.

Parentage:

- a. *Female parent*.—‘Arbosana’ (unpatented).
- b. *Male parent*.—‘Koroneiki’ (unpatented).

PLANT

General:

- a. *Height*.—240 cm (average).
- b. *Width*.—190 cm (average).
- c. *Growth habit*.—Spreading.
- d. *Vigor*.—Medium.
- e. *Tree canopy density*.—Dense.

ROOTS

General:

- f. *Rooting habit*.—Normal-Dense
- g. *Texture*.—Fibrous.
- h. *Color designation (young roots)*.—155A.
- i. *Color designation (old roots)*.—157A.

STEMS

General:

- j. *Branching habit*.—Spreading.
- k. *Trunk*.—i. Circumference — 9 cm. ii. Surface texture — Smooth. iii. Color — 199A.
- l. *Main stems*.—i. Quantity — 3-6. ii. Aspect — Smooth. iii. Strength — Robust. iv. Cross-section — Rounded Small. v. Circumference — 6 cm (diameter) at 50 cm. vi. Surface texture (young stems) — Smooth. vii. Surface texture (mature stems) — Smooth with lenticels. viii. Color designation (young stems) — 157A. ix. Color designation (mature stems) — 157B. x. Lenticels — Many, 1 mm long 0.5 mm wide. xi. Internode length — Ranging from 5-12 cm.
- m. *Lateral branches*.—i. Quantity — 8-10. ii. Cross-section — Oval. iii. Length — 80-180 cm. iv. Internode length — Ranging from 2-3 cm. v. Texture — Smooth with raised lenticels. vi. Aspect — Outward. vii. Strength — Flexible. viii. Color (young lateral branches) — 196D. ix. Color (mature lateral branches) — 197D. x. Pubescence — None.

FOLIAGE

General:

- n. *Arrangement*.—Opposite.
- o. *Attachment*.—Petiolate
- p. *Division*.—Simple.
- q. *Lamina*.—i. Length — Average 45 mm. ii. Width — Average 10 mm. iii. Thickness — 1.5-2 mm. iv. Shape — Acuminate. v. Aspect — Straight. vi.

- Apex — Acuminate. vii. Base — Cuneate. viii. Margin — Entire (smooth). ix. Texture of upper surface — Smooth. x. Texture of lower surface — Slightly pubescent. xi. Color of young lamina (upper surface) — 141B. xii. Color of young lamina (lower surface) — 142B. xiii. Color of mature lamina (upper surface) — 143B. xiv. Color of mature lamina (lower surface) — 142B. xv. Venation pattern — Pinnate.
- r. *Petiole*.—i. Length — 2 mm. ii. Diameter — 1.2 mm. iii. Texture — Smooth. iv. Strength — Medium. v. Color — 142B.
- s. *Curvature of longitudinal axis of leaf blade*.—Straight.

INFLORESCENCE

General:

- t. *Type*.—Panicle.
- u. *Natural flowering season*.—Spring.
- v. *Flowering habit*.—1-10 days during April.
- w. *Length*.—2.5-6.5 cm.
- x. *Width*.—1-3 cm.
- y. *Quantity of florets per inflorescence*.—20-25.
- z. *Peduncle*.—i. Length — 2.5-6.5 cm. ii. Width — 1.2 cm. iii. Texture — Smooth. iv. Strength — Medium. v. Color — 141D.
- aa. *Pedicels*.—i. Length — 2 mm. ii. Width — 1 mm. iii. Texture — Smooth. iv. Strength — Medium. v. Color — 141D.

FLOWER BUD

General:

- bb. *Shape*.—Globular.
- cc. *Length*.—2-4 mm.
- dd. *Width*.—2 mm.
- ee. *Color*.—157A.

FLOWER

General:

- ff. *Type*.—Perfect.
- gg. *Shape*.—Cruciform.
- hh. *Persistence*.—Medium.
- ii. *Fragrance*.—Licorice-like floral scent.
- jj. *Diameter*.—3-6 mm.
- kk. *Height*.—2-3 mm.
- ll. *Calyx*.—i. Quantity of sepals — 4. ii. Arrangement — Rotate. iii. Diameter — 1 cm.
- mm. *Sepals*.—i. Sepal fusion — Fused. ii. Length — 1 mm. iii. Width — 1 mm. iv. Shape — Bell shape. v. Apex — Obtuse. vi. Base — Cuneate. vii. Margin — Entire. viii. Texture — Uniform, smooth texture on both the upper and lower surfaces. ix. Color (upper surface) — 149A. x. Color (lower surface) — 149A.
- nn. *Petals*.—i. Arrangement — Rotate. ii. Quantity — 4. iii. Fusion — Sympetalous petals fused at the proximal half of the corolla. iv. Shape — Acute. v. Apex — Acute. vi. Base — Cuneate. vii. Margin — Entire. viii. Texture — Uniform, smooth texture on both the upper and lower surface. ix. Color when opening (upper surface) — NN155D. x. Color when opening (lower surface) — NN155D. xi. Color when

- fully opened (upper surface) — NN155D. xii. Color when fully opened (lower surface) — NN155D. xiii. Color fading — None.

REPRODUCTIVE ORGANS

General:

- oo. *Androecium*.—i. Stamen quantity — 2. ii. Filament length — Approximately 0.75 mm. iii. Filament color — 130B. iv. Anther attachment — Basifixed. v. Anther shape — Hemispherical. vi. Anther size — 1 mm. vii. Anther color — 2A. viii. Abundance of pollen — Abundant. ix. Pollen color — 2A.
- pp. *Gynoecium*.—i. Pistil quantity — 1. ii. Stigma shape — Bifid cone shape. iii. Stigma length — Approximately 0.75 mm. iv. Stigma color — 145D. v. Style size — Approximately 0.75 mm. vi. Style color — 145D. vii. Ovary position — Superior. viii. Ovary shape — Round. ix. Ovary diameter — Approximately 0.75 mm. x. Ovary color — 145D.

SEED AND FRUIT

General:

- qq. *Fruit*.—i. Date of maturity — November-December. ii. Size — Medium. iii. Weight — 1.69 g (medium). iv. Diameter — 14.5 mm (medium). v. Length — 18 mm (medium). vi. Form — Elongated. vii. Suture — None. viii. Stem cavity — Medium. ix. Stem — Medium. x. Caliper — Medium. xi. Apex — Acute. xii. Pistil point — No present. xiii. Skin thickness — Less than 1 mm. xiv. Skin texture — Smooth. xv. Skin tendency to crack — None. xvi. Skin color — N92A. xvii. Flesh color — 158C. xviii. Pit color — 144C. xix. Oil/juice grade — Oil production excellent, extra virgin. xx. Ripening — Medium. xxi. Fruit nipple — Absent.
- rr. *Stone*.—i. Quantity — 1. ii. Shape-Ovate. iii. Type — Slightly asymmetric. iv. Fibers — None. v. Weight — 0.29 g (medium). vi. Length — 14 mm (medium). vii. Width — 8 mm (medium). viii. Thickness — 2 mm. ix. Apex — Rounded. x. Base — Acute. xi. Color — 162B. xii. Texture — Slightly grooved. xiii. Mucron — Present. xiv. Suture — Present. xv. Sides — Round. xvi. Ridges — Absent. xvii. Tendency to split — None.

DEVELOPMENT

General:

- a. *Flowering season*.—1-10 days during April.
- b. *Harvesting season*.—7 months since flowering to harvest.
- c. *Time to produce a fruit bearing tree*.—2 years.
- d. *Hardiness*.—Preferably adapted to 30 and 45 degrees on north and south meridians (general in olive).
- e. *Plant/fruit disease resistance*.—i. Repilo (*Cycloconium oleaginea*) — Resistant. ii. *Verticillium* (*Verticillium dahliae*) — Moderately resistant. iii. Tuberculosis (*Pseudomonas savastanoi*) — Moderately resistant. iv. *Spilocaea oleagina* — Moderately resistant.
- f. *Fruit market use*.—Oil with intense fruitiness and apple-green color. It has aromas of banana, apple and

hints of almond shells. It is sweet and balanced on the palate, slightly bitter and slightly spicier.

g. *Fruit yield*.—5-20 kg/tree or 8,000-16,000 kg/ha.

The new variety ‘I 46’ has not been observed under all possible environmental conditions to date. Accordingly, it is possible that the phenotypic expression may vary somewhat

with changes in light intensity and duration, cultural practices, and other environmental conditions.

The invention claimed is:

1. A new and distinct variety of olive tree named ‘I 46’,
5 as illustrated and described herein.

* * * * *



FIG. 1



FIG. 2



FIG. 3



FIG. 4



FIG. 5



FIG. 6



FIG. 7

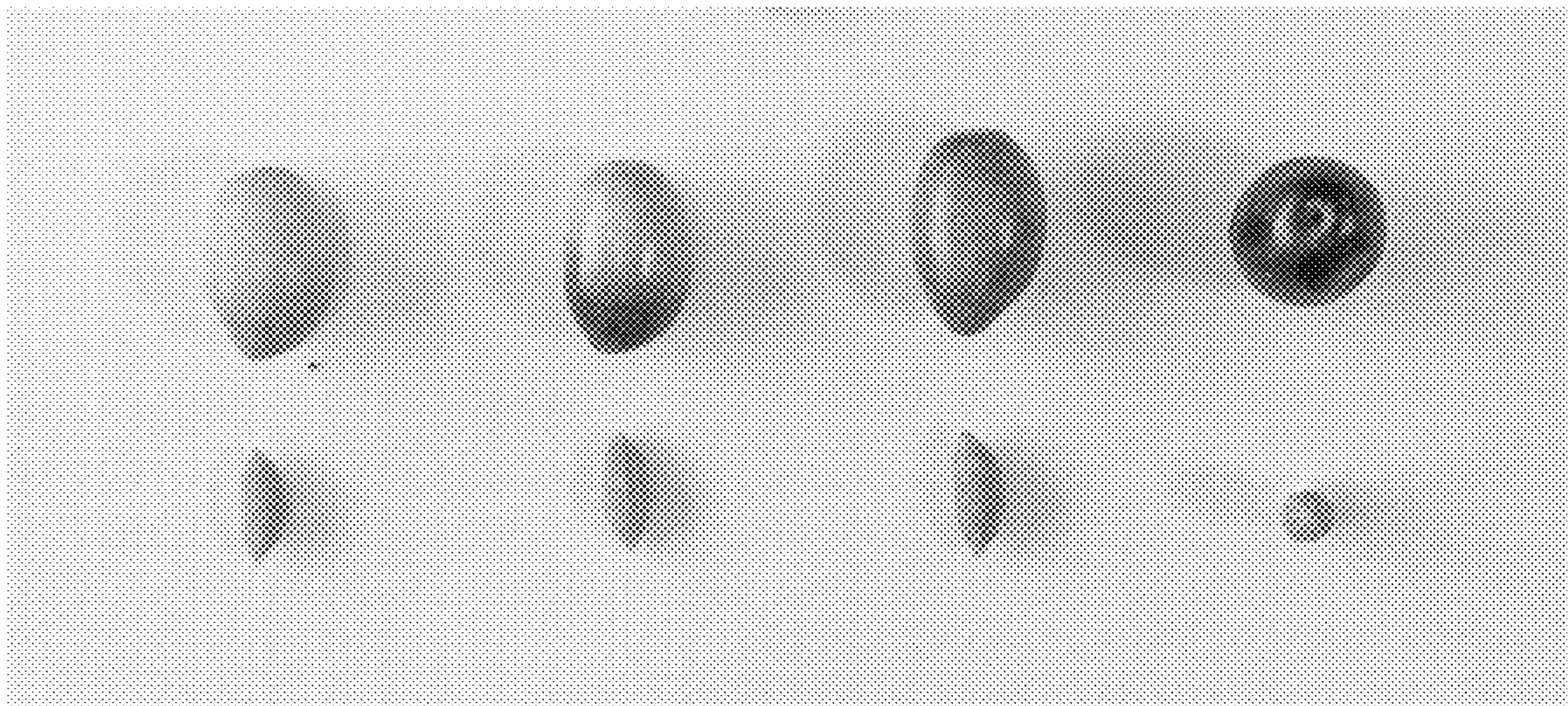


FIG. 8