



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

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(54) **HOP PLANT NAMED ‘NZH063’**

(50) Latin Name: *Humulus lupulus* L.
Varietal Denomination: **NZH063**

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patent is extended or adjusted under 35
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(52) **U.S. Cl.**

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(58) **Field of Classification Search**

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See application file for complete search history.

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(57) **ABSTRACT**

A new and distinct hop plant is described. The new cultivar
results out of selection from a population of seedlings
derived from deliberate crossing ‘Cascade’ (seed parent; not
patented) and tetraploid male selection 00.L123-168 (not
patented). The new cultivar, ‘NZH063’, is characterised by
having cones which are late-season maturing and having
medium alpha acid content. The new cultivar is suitable for
beer flavouring.

4 Drawing Sheets

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Genus and species of plant claimed: *Humulus lupulus* L.
Variety denomination: ‘NZH063’.

BACKGROUND OF THE INVENTION

The new cultivar of hop, *Humulus lupulus* L., was created
in the course of a planned breeding program carried out at
Motueka, New Zealand. It was selected from a population of
seedlings derived from crossing ‘Cascade’ (seed parent; not
patented) and tetraploid male selection 00.L123-168 (not
patented). The cross was carried out in January 2012. Seeds
of the cross were germinated and their seedlings were then
raised and planted in the field in the same location in
November 2012. The seedlings remained in the field for two
seasons (2012-13 and 2013-14) to allow for agronomic and
chemistry traits to be measured and/or assessed. The geno-
type, ‘NZH063’, was identified as having potential as a new
cultivar. During the 2014-15 season it was clonally propa-
gated using soft tip methods at Motueka, New Zealand. The
resulting plants were found to be true to type demonstrating
that the characteristics of the new cultivar ‘NZH063’ are
stable and transmitted without change through succeeding
generations.

SUMMARY OF THE INVENTION

A new and distinct hop plant is described herein. The
‘NZH063’ cultivar is characterised by having cones which
are late-season maturing, and medium alpha acid content
which has significant levels of farnesene in its essential oil
profile and a high humulene caryophyllene ratio. The new
cultivar is suitable for beer flavouring.

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In 2014-15, ‘NZH063’ was clonally propagated using soft
tip methods at Motueka, New Zealand. The resulting plants
were found to be true to type demonstrating that the char-
acteristics of the new cultivar ‘NZH063’ are stable and
transmitted without change through succeeding generations.

In 2015 it was decided to advance ‘NZH063’ due to its
agronomic and chemistry properties for further testing
including brewing trials. Further plants were propagated and
a trial plot was planted in 2017-18. Brewing trials were
conducted in the 2017 to 2020 seasons.

‘NZH063’ is maintained at Motueka, New Zealand, where
it has undergone observations for uniformity. All plants have
been found to be true to type, that is, no off types have been
observed. ‘NZH063’ is distinguished from its parent female
parent, ‘Cascade’ as ‘NZH063’ has late cone maturation
while ‘Cascade’ has a very early cone maturation. ‘NZH063’
has medium length cones that are medium ovate in longi-
tudinal cross section while ‘Cascade’ has long cones that are
narrow ovate in longitudinal cross section. The pollen par-
ent, 00.L123-168, is a male and thus does not produce cones.

Under New Zealand growing conditions ‘NZH063’ is
distinguished from varieties of common knowledge by the
following characteristics: When compared to ‘HORT3829’
(patented; U.S. Plant Pat. No. 23,985), ‘Wakatu™’ (not
patented), ‘Dr Rudi’ (not patented) and ‘Hersbrucker Pure’
(not patented), ‘NZH063’ has cones that mature later. In
addition, ‘NZH063’ typically has more open cones than
‘HORT3829’, ‘Dr Rudi’ and ‘Hersbrucker Pure’. The den-
sity of the foliage of the side shoot from the middle third of
the plant of NZH063 is medium while the foliage of
‘HORT3829’ and ‘Cascade’ is of sparse density and the
foliage of Dr Rudi is dense. The main shoot of ‘NZH063’

has weak anthocyanin coloration while 'Wakatu™' has absent or very weak anthocyanin coloration. When compared to 'HORT3829', 'Whakatu™', 'Cascade' and 'Dr Rudi', which have an even distribution of laterals, 'NZH063' has a distribution of laterals predominately in the top third.

BRIEF DESCRIPTION OF THE DRAWINGS

The accompanying photographs show typical specimens of the plant habit, cones, and leaves of the new cultivar as depicted in colours as nearly true as is reasonably possible to make the same in colour illustration of this character. The plants shown in these photographs were six years old.

FIG. 1: 'NZH063' stipule.

FIG. 2: 'NZH063' cones.

FIG. 3: Upper and underside of 'NZH063' leaves.

FIG. 4: 'NZH063' whole plant.

BOTANICAL DESCRIPTION

The following is a description of the new cultivar with colour terminology in accordance with The Royal Horticultural Society Colour Charts (R.H.S.C.C.) 2001 edition. The specimens described were six years old and were grown at Motueka, New Zealand. The observations were made over the 2019-2021 seasons.

Plant form and vigour: Mature plants had a normal growth type and produced a yield (averaging 2.28 tonnes/ha) of late-season maturing cones. The shape of the plant tended to be cylindrical to club shaped with the head being high to very high volume. The main shoot of a one year old plant had an average vine diameter half way up the vine of 8.7 mm, and anthocyanin coloration was weak. Node pubescence was weak. The average internode length was 246 mm.

Laterals: The attitude of the laterals was spreading. The side shoots from the middle third of the plant were medium in length, averaged 51.8 cm, and produced a medium number of cones, an average of 5.6 per node. The side shoots from the top third of the plant were longer with an average length of 54.8 cm and produced an average of 2.8 cones/node. There was an average of 6.9 nodes per lateral in the

middle third of the plant and an average of 6.3 nodes per lateral in the upper third of the plant. Stipule pose is upright and stipule colour is green 144C.

Leaves: The leaves were lobed with predominantly five lobes. The medium sized, medium blistered leaves were opposite with crenate margins. The average leaf length was 151 mm and average width was 166 mm. The upper leaf surface colour was Green, 137A with medium intensity. Venation type is palmate and venation colour is 144A. Petioles have an average length of 85 mm, an average width of 4 mm and the colour is near 60B.

Foliage density: The density of the foliage of the side shoot from the middle third of the plant for NZH063 was medium.

Cones: Were medium in size and medium-ovate in shape in longitudinal section; in cross section they were square in shape. The cone average length was 46.7 mm and average width 21.9 mm. Bracts were medium-large in size, with an average length of 21.1 mm and average width 13.6 mm, Green in colour, near 145C. The cones were open and the bract apex was short in length. Bracteole had an average length of 16.2 mm and average width of 10 mm. The bracteole colour was 157B. Strigs were long, and had an average length of 34.7 mm, with an average width of 3.7 mm. The colour of the strig was Green, near 145B.

Physiological timing: Flowering commences mid-season in Motueka, New Zealand around the 5-15 January. Harvest is late in the New Zealand season, commencing mid- to late-March, under normal conditions.

Chemistry profile: 'NZH063' has undergone extensive chemistry profile testing. NZH063 has medium alpha acid levels around 9%, low Beta acid levels around 4% and cohumulone levels around 32%.

Use: Primarily flavouring and bittering ingredient for beer.

Pest and disease: 'NZH063' does not appear particularly resistant or susceptible to any particular pests or diseases known to afflict *Humulus lupulus*.

Hardiness: The plant cold hardiness according to the American zone classification has not been determined.

The invention claimed is:

1. A new and distinct hop plant named 'NZH063', substantially as illustrated and described herein.

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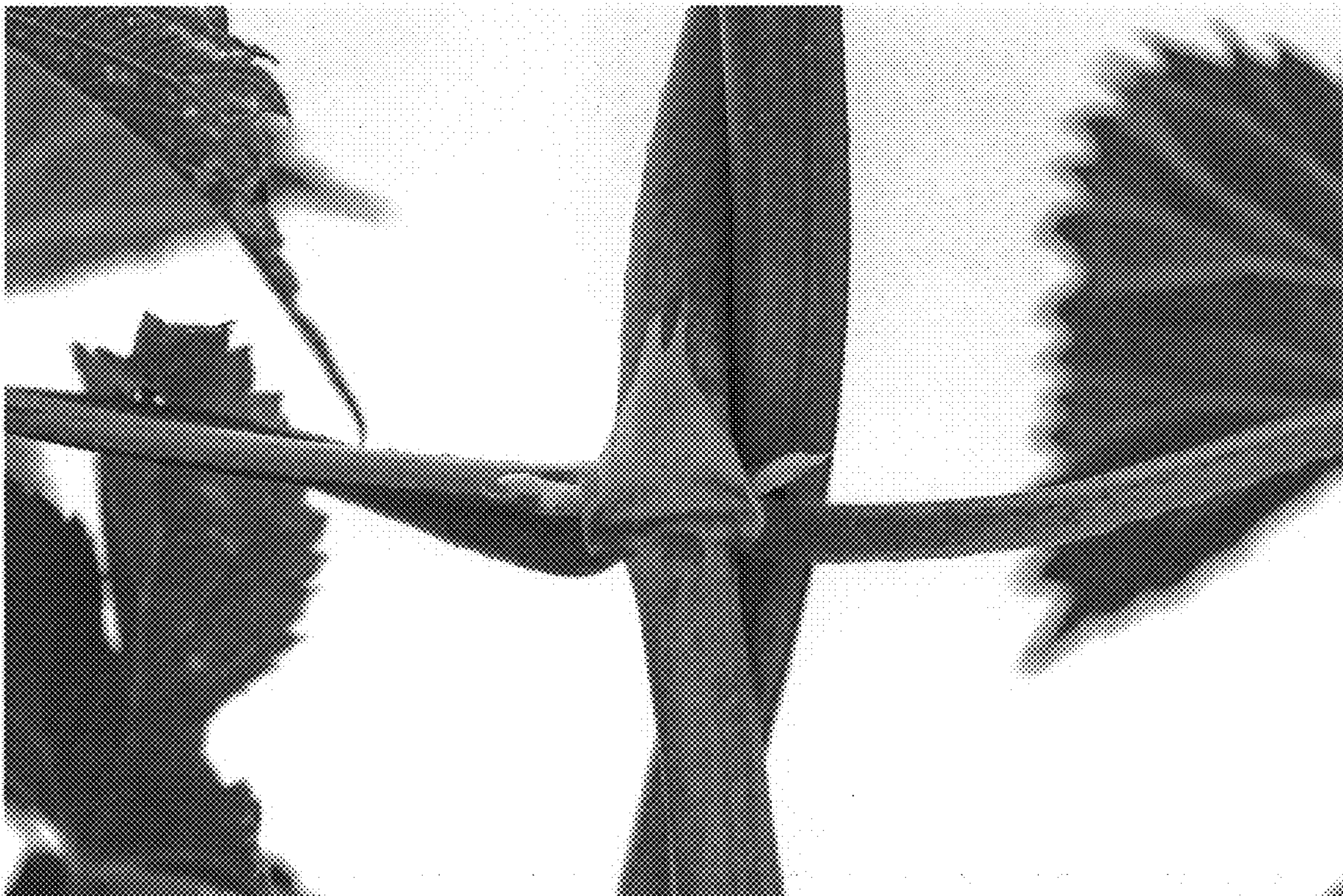


Fig. 1



Fig. 2

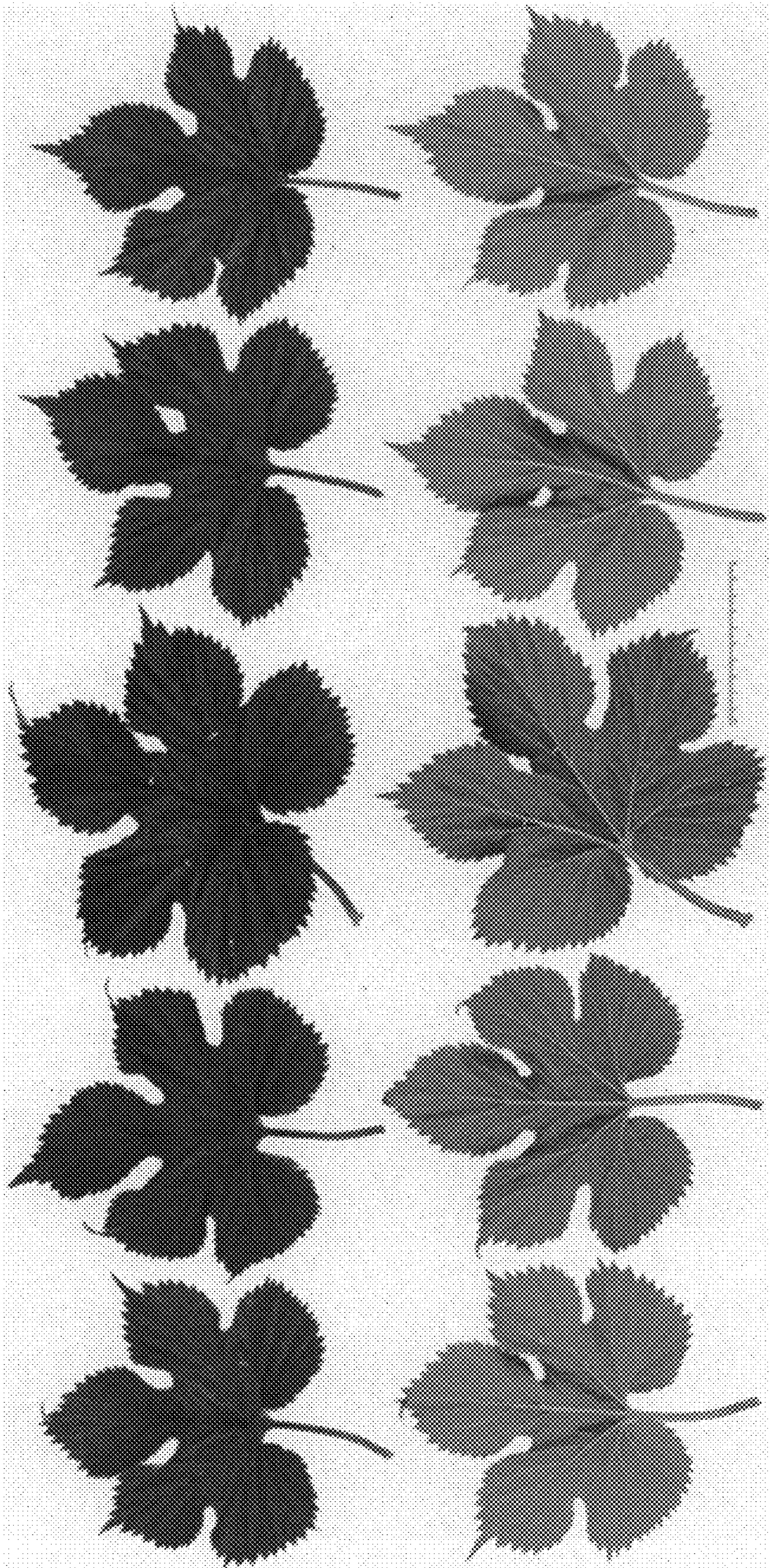


Fig. 3



Fig. 4