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Jones et al.

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(54) **APPLE TREE 'JOBURN'**

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patent is extended or adjusted under 35
U.S.C. 154(b) by 0 days.

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Related U.S. Application Data

(63) Continuation of application No. 08/690,294, filed on Jul. 26,
1996, now abandoned.

(51) **Int. Cl.⁷** **A01H 5/00**

(52) **U.S. Cl.** **Plt./161**

(58) **Field of Search** **Plt./34.1, 161**

(56) **References Cited**

U.S. PATENT DOCUMENTS

P.P. 7,526 * 5/1991 Hill et al. Plt./34.1

OTHER PUBLICATIONS

GTITM UPOVROM listing for NZPBRAPP067, for
'Joburn' filed: Mar. 2, 1990; published: Apr. 14, 1990.*

* cited by examiner

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(57) **ABSTRACT**

A new and distinct variety of apple tree is a limb mutation
of the 'Braeburn' variety (an unpatented New Zealand
variety), with the fruit of the new variety characterized by a
much more highly colored red striped and blushed appear-
ance as compared to 'Braeburn'. The new variety has been
named 'Joburn'.

2 Drawing Sheets

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SUMMARY OF THE INVENTION

'Braeburn' is an unpatented variety of apple commonly
grown commercially in New Zealand, and increasingly in
other part of the world. The fruit of 'Braeburn' is typically
striped, with coverage of between 40% to 50% orange-red
stripes. A number of sports or mutations have arisen on trees
of 'Braeburn' which are similar in habit and yield to 'Brae-
burn,' but which have different skin coloration. One such
sport is the variety 'Hidala' (U.S. Plant Pat. No. 7,526),
which has skin color of orange-red stripes over about 50%
to 70% of the fruit surface; another is 'Mariri Red' (U.S.
Plant Pat. No. 11,604), which has approximately 100%
coverage of red blush. Such sports with increased red
coloration are seen to have some commercial advantage over
'Braeburn'.

A limb mutation on a apple tree of variety Braeburn (an
unpatented New Zealand cultivar) exhibited highly colored
red striped and blushed fruit compared to its parental variety.
The new variety has been asexually reproduced and named
Joburn.

The mutation was noticed because 2 apples on a spur had
higher red coloration than the rest of the crop on the tree.

The spur was left to grow for 2 seasons, and in August
1987 graftwood was taken and used to top-graft an existing
tree on the owners property in Thompson Rd, Hastings. In
Spring 1988 budwood was taken from the top-grafted tree to
produce 200 second generation trees on M793 rootstock.
These trees were planted in winter 1990.

Asexual propagation by budding and grafting in Hawkes
Bay, New Zealand, has shown that the unique combination
of plant characteristics and distinctive coloration character-
istics come true to form and are established and faithfully
transmitted through succeeding generations.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 shows three apples of the varieties 'Braeburn,'
'Joburn,' 'Hidala' and 'Mariri Red' in side views. 'Joburn'

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has dark red stripes over an underlying dark red blush
typically covering between 75% to 100% of the fruit sur-
face; and

FIG. 2 shows 'Joburn' apple in cross-section.

**DETAILED DESCRIPTION OF THE
DISCLOSURE**

The Joburn is a variety of domestic apple tree (*Malus
domestica*).

The following is a detailed description of the new variety
with color terminology in accordance with the 1986 Edition
of The Royal Horticultural Society Colour Chart
(R.H.S.C.C.).

The trees described were planted in 1988 on M793
rootstock. Observations on trees and fruit were made in
Autumn 1995.

Tree: Medium to medium — weak vigor on MM106 root-
stock. Size of mature trees on MM106 rootstock of about
3.5 m. high by about 2.0 m. wide. Not substantially
different from comparative varieties 'Mariri Red,'
'Hidala' or 'Braeburn.' The bearing characteristics are not
substantially different from the comparative varieties
'Mariri Red', 'Hidala' or 'Braeburn.' That is, unthinned
trees tend to bear biennially, but trees thinned and cropped
in a commercial manner are not biennial. Typical com-
mercial production in New Zealand from trees on MM106
rootstock is about 100 kg. to 150 kg per tree. Predomi-
nance of bearing is on spurs on older wood, and on
axillary buds on one-year-old wood.

Branches: Medium thick; smooth; angle of major scaffold
branches — typically about 60° above the horizontal.

Lenticels on bark.—Few in number, about 5 per square
cm. on one-year-old branches; round to ovate in
shape; near 156D in color.

Leaf petioles.—Typical length about 28 mm.

Leaf color.—Upper surface near 137A, lower surface
near 138B.

Leaves: Upward pose; medium glossiness of upper side; medium pubescence on lower side, medium petiole length.

Size.—Small to medium.

Flowers: Early-season flowering, medium size; flat shape, margin of petals touching. Color of petals soon after opening is Red-Purple Group near 63B.

Time of flowering.—'Joburn' showed about 90% full bloom on about Oct. 7, 1997, at Havelock North, New Zealand.

Suitable pollinisers.—Any diploid apple variety flowering at a similar time, apart from 'Braeburn' or sports of 'Braeburn'.

Bloom diameter.—Not substantially different from comparative varieties 'Mariri Red,' 'Hidala' or 'Braeburn.'

Fruit:

Ripening.—Late season. Over the period late-March to early-April in Hastings, Hawkes Bay. In Hawkes Bay, 'Joburn' ripens about one-week after 'Braeburn' and 'Hidala,' at the same time as 'Mariri Red,' as determined by measurements of background color, flesh firmness, titratable acidity, soluble solids (sugars) and starch levels in the fruit. This has been documented in the following independent reports, among others:

Fenemor, D (1996). Sports comparison trial.—Braeburn Sports Report PH95/G/N-2, to ENZA New Zealand (International) Ltd.

Bensley, R (1996). Braeburn sport comparison trial.—Report PH95/7/H to ENZA New Zealand (International) Ltd.

Typical fruit size at maturity on trees thinned in a commercial manner is about 76 mm. maximum width and about 60 mm in height.

Shape.—Globose conical, asymmetric in side view, ribbing present, very weak crowning at distal end.

Stalk cavity.—Medium depth with medium width.

Eye basin.—Shallow-medium depth, medium width (similar to Golden Delicious).

Stem thickness.—Medium. Not substantially different from comparative varieties 'Mariri Red,' 'Hidala' or 'Braeburn.'

Stem length.—About 18 mm.

Calyx.—Partially open, medium size. Not substantially different from comparative varieties 'Mariri Red,' 'Hidala' or 'Braeburn.'

Sepals:

Size.—Short-medium length.

Spacing of sepals at base.—Touching.

Skin: Medium to thick; smooth.

Bloom of skin.—Absent.

Greasiness of skin.—Absent.

Cracking tendency of skin.—Absent.

Coloration.—The development of color begins earlier than 'Braeburn,' and the color of the mature fruit is greater than that of 'Braeburn.'

Ground color.—Near 150C.

Over-color.—Dark red stripes over an underlying dark red blush, typically covering between 75% to 100% of the fruit surface. The color of both the stripes and blush is Greyed-Purple Group near 185A, but differ in intensity of color. Fruit of high maturity and fruit

which is grown on places in the tree which are more exposed to sunlight have more red coloration and that coloration is more intense. On some fruit the intensity of the blush is such that it is equivalent to the stripes, and the stripes are difficult to distinguish.

Lenticels.—Small and inconspicuous.

Russet.—Low to medium around step cavity.

Propensity to russet.—Low.

Flesh: Juicy, medium firmness, cream, Yellow-Green Group near 150D weak browning of flesh (one hour after cutting with stainless steel knife).

Texture.—Medium (as for Cox's Orange Pippin).

Core:

Distinctness of core line in cross section (median through locules).—Medium to strong.

Aperture of locules in cross section.—Closed.

Seeds: Medium sized; Greyed-Orange Group near 175B.

Use: Dessert.

Keeping quality.—Very good, with fruit storing in excess of about 100 days in cool storage (at 1° C.) with few storage disorders.

Disease resistance.—Not substantially different from comparative varieties 'Mariri Red,' 'Hidala' or 'Braeburn.'

Susceptibility to:

Insects.—Medium.

Diseases.—Medium.

Differences from similar varieties: Compared to Braeburn and Hidala (U.S. Plant Pat. No. 7,526).

Joburn has: Higher amount of red coloration. A red blush under striping on exposed areas of the fruit. More consistent coverage of red color, especially associated with the shaded side of the fruit compared with Braeburn and Hidala. Earlier development of red color. Joburn ripens up to week earlier than Braeburn and Hidala. Joburn has a shortened harvest period compared to Braeburn and Hidala.

Table 1 shows a comparison between 'Joburn,' 'Mariri Red' (U.S. Plant Pat. No. 11,604), 'Hidala' and 'Braeburn.'

TABLE 1

	VARIETY COMPARISONS			
	JOBURN	MARIRI RED	HIDALA	BRAEBURN
Overcolor (RHS 1986)	near 185A	near 187B	near 179A	near 179A
Color coverage	between 75% to 100%	about 100%	between 50% to 70%	between 40% to 50%
Color pattern	stripes over blush	blushed	stripes over blush	stripes over blush
Time of ripeness	about 7 days after 'Braeburn'	about 7 days after 'Braeburn'	Same as 'Braeburn'	
Time of coloration	Earlier than 'Braeburn'	Earlier than 'Braeburn'	Same as 'Braeburn'	

We claim:

1. A new and distinct variety of apple tree which is a mutation of the Braeburn variety substantially shown and described, characterised by dark-red striping and blush which extends over the entire surface of the fruit.

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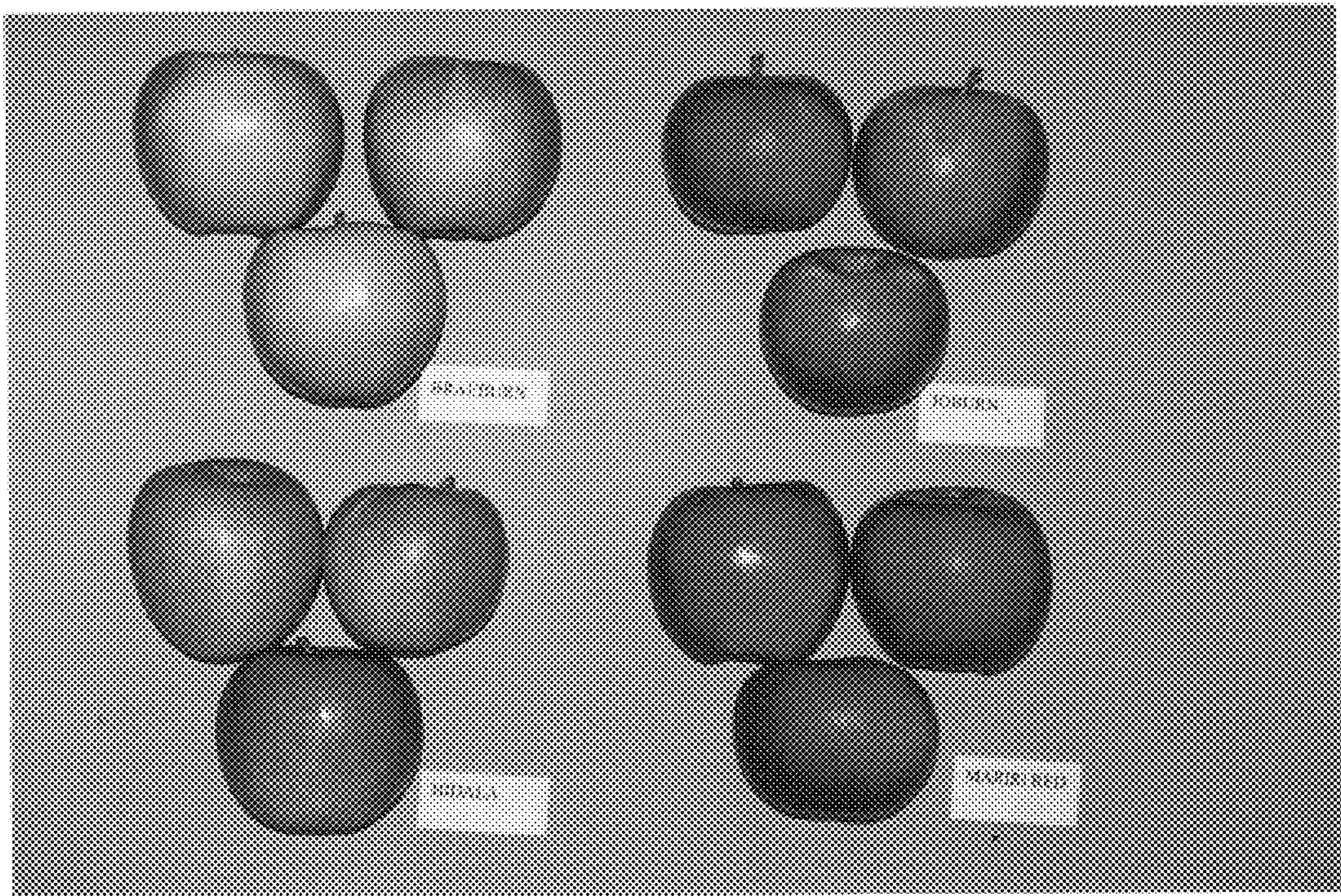


Figure 1

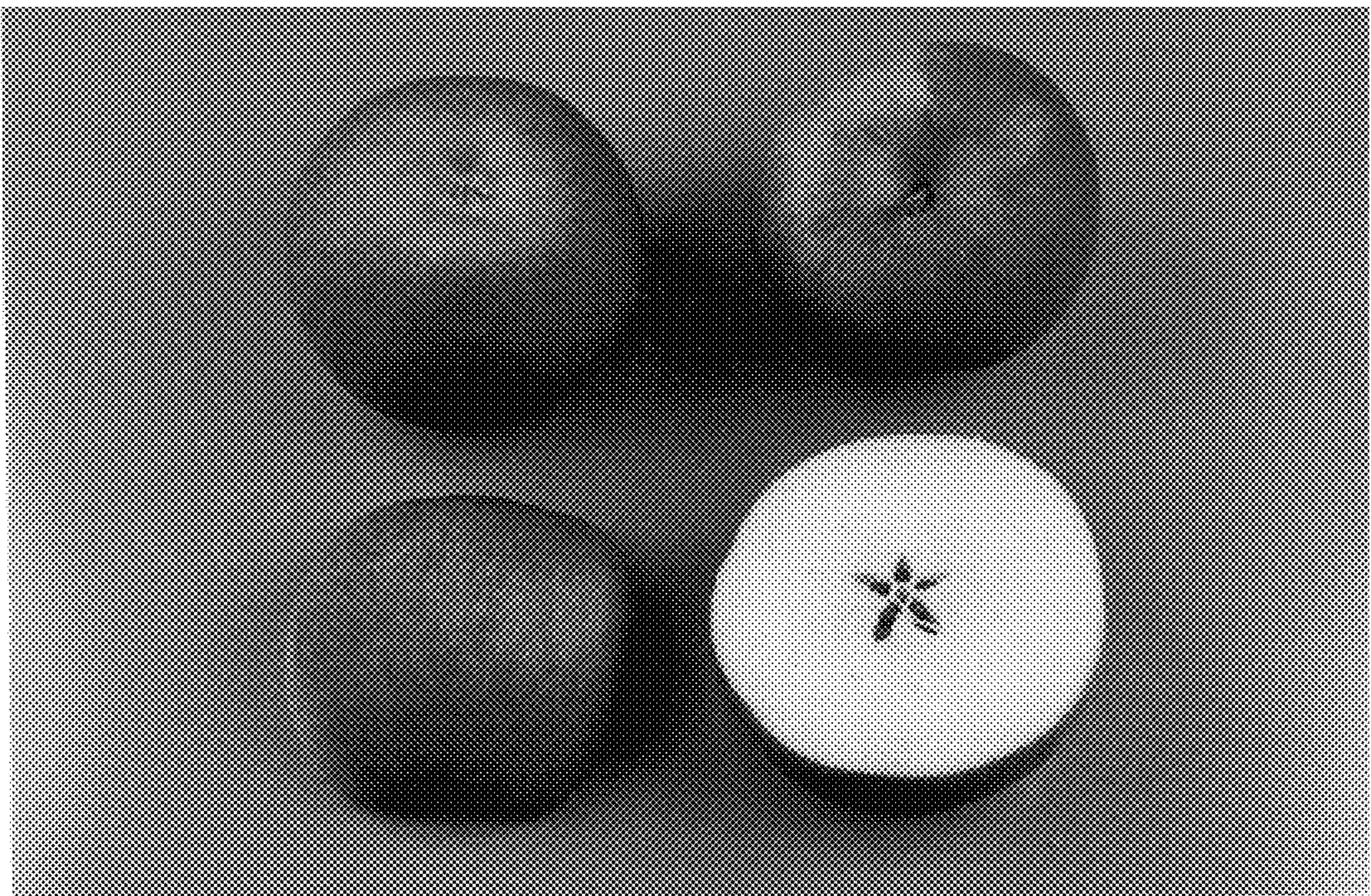


Figure 2