US00PP29238P3

(12) **United States Plant Patent**
Koie et al.

(10) **Patent No.: US PP29,238 P3**
(45) **Date of Patent: Apr. 17, 2018**

(54) **HOP PLANT NAMED 'FURANO 0901B GO'**

(50) Latin Name: ***Humulus lupulus* L.**
Varietal Denomination: **Furano 0901B go**

(71) Applicant: **Sapporo Breweries Limited**, Tokyo (JP)

(72) Inventors: **Koichiro Koie**, Hokkaido (JP); **Narushi Suda**, Hokkaido (JP); **Yutaka Itoga**, Hokkaido (JP); **Mitsuhiro Uemoto**, Hokkaido (JP); **Yasunori Arai**, Hokkaido (JP); **Masanobu Goto**, Hokkaido (JP)

(73) Assignee: **Sapporo Breweries Limited**, Tokyo (JP)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **14/757,382**

(22) Filed: **Dec. 21, 2015**

(65) **Prior Publication Data**

US 2016/0192562 P1 Jun. 30, 2016

(30) **Foreign Application Priority Data**

Dec. 24, 2014 (JP) 29812

(51) **Int. Cl.**
A01H 5/02 (2018.01)

(52) **U.S. Cl.**
USPC **Plt./236**
CPC ***A01H 5/02*** (2013.01)

(58) **Field of Classification Search**
USPC Plt./236
CPC A01H 5/02; A01H 5/0825; A01H 5/0837
See application file for complete search history.

Primary Examiner — Kent L Bell
(74) *Attorney, Agent, or Firm* — James M. Weatherly; Bethany R. Roahrig; Cochran Freund & Young LLC

(57) **ABSTRACT**

A new hop plant particularly distinguished by having a cylindrical plant shape, alpha acid content of 7.4% in dry matter, a ratio content of beta to alpha of 0.5, a content of cohumulone to alpha acids of 33%, and a flowery, rose flavor, is disclosed.

2 Drawing Sheets

Genus and species: *Humulus lupulus* L.
Variety denomination: 'Furano 0901B go'.

CROSS REFERENCE TO RELATED APPLICATION

The present application claims priority to Japan Plant Variety Protection Application No. 29812, as filed on Dec. 24, 2014, the entire contents are herein incorporated by reference for all the application teaches and discloses.

BACKGROUND OF THE NEW PLANT

The present invention comprises a new and distinct variety of hop, botanically known as *Humulus lupulus* L. and hereinafter referred to by the variety name 'Furano 0901B go'. 'Furano 0901B go' is a selection from a controlled cross-pollination of the female hop parent 'Olympic' and the proprietary male hop parent '020448'.

The female hop line 'Olympic' and the proprietary male hop line '020448' were cross-pollinated in Kamifurano, Hokkaido, Japan and seeds were obtained. The seeds were sown and plants were grown for evaluation. A plant line was selected in March of 2009 in Kamifurano, Hokkaido, Japan and named 'Furano 0901B go'. In 2009, 'Furano 0901B go' was first vegetatively propagated in Kamifurano, Hokkaido, Japan via vegetative cuttings. 'Furano 0901B go' was found to reproduce true to type in successive generations of asexual propagation via vegetative cuttings in Kamifurano, Hokkaido, Japan.

SUMMARY

The following are the most outstanding and distinguishing characteristics of this new variety when grown under normal horticultural practices in Kamifurano, Hokkaido, Japan.

1. Cylindrical plant shape;
2. Alpha acid content of 7.4% in dry matter;
3. Ratio content of beta to alpha of 0.5;
4. Content of cohumulone to alpha acids of 33%; and
5. A flowery, rose flavor.

DESCRIPTION OF THE PHOTOGRAPHS

This hop plant is illustrated by the accompanying photographs, which show the plant's overall plant shape, leaf shape and cone shape. The photographs are of six-year-old plants grown in Kamifurano, Hokkaido, Japan in August 2014. The colors shown are as true as can be reasonably obtained by conventional photographic procedures.

FIG. **1** shows the plant shape of 'Furano 0901B go'.

FIG. **2** shows the leaf shape of 'Furano 0901B go' and three commercial varieties in Japan. In the lower right is 'Furano 0901B go', in the upper right is 'Little Star', in the upper left is 'Shinsyu Wase', and in the lower left is 'Furano Special'.

FIG. **3** shows the cone shape of 'Furano 0901B go'.

DESCRIPTION OF THE NEW VARIETY

The following detailed descriptions set forth the distinctive characteristics of 'Furano 0901B go'. The data, which

define these characteristics, were collected from asexual reproductions carried out in Kamifurano, Hokkaido, Japan. Data was collected on five- and six-year-old plants in Kamifurano, Hokkaido, Japan during 2013 to 2017 growing seasons. Color references are to Japan Horticultural Plant Color Chart (1987, Japan Color Research Institute).

Classification:

Family.—Cannabaceae.

Classification.—*Humulus lupulus* L.

Common name.—Hop.

Propagation:

Type.—Vegetative cuttings.

Plant description:

Plant and growth habit.—The plant growth type is normal, not dwarf.

Plant height.—5.5 m when grown on a trellis.

Plant diameter.—1.2 m to 1.5 m.

Plant shape.—Cylindrical.

Lateral branch description:

Length.—Average is 1.00 m.

Diameter.—Average is 4.6 mm; ranges between 3.9 and 5.9 mm.

Internode length.—Average is 19.9 cm; ranges between 14.0 cm and 26.0 cm on the lateral branch at the middle of the plant.

Color.—The color of the ridge line is a vivid purple (Japan Color Chart No. 8607); the color of the area in-between is a deep yellow green (Japan Color Chart No. 3507).

Foliage description:

Arrangement.—Opposite.

Shape.—5 lobes; sometimes the middle lobe is additionally lobed in 3.

Length.—Average is 15.6 cm; ranges between 13.0 cm and 20.0 cm.

Width.—Average is 19.0 cm (measured in 2016); ranges between 15.0 cm and 24.0 cm.

Color.—Upper surface, Dark Green (Japan Color Chart No. 3707).

Apex.—Accuminate.

Margin.—Dentate to spiny.

Base.—Cordate.

Venation pattern.—Palmate.

Venation color.—Dark green (Japan Color Chart No. 3716).

Blistering.—Upper surface: Weak.

Petiole.—Length: Average is 7.5 cm; ranges between 6.5 cm and 9.0 cm. Diameter: Average is 4.0 mm; ranges between 3.6 mm and 4.4 mm measured in the middle. Color: From base to bine is a dark red (Japan Color Chart No. 0410).

Inflorescence buds:

Cone size.—Small; Average length is 30.4 mm; ranges between 26.0 mm and 37.0 mm and average diameter is 16.7 mm; ranges between 15.5 mm and 18 mm.

Cone shape.—Narrow, ovate.

Weight of one hundred cones.—Light (14.2 gin dry matter).

Color.—Vivid yellow green (Japan Color Chart No. 3306).

Lupulin glands.—Number per cone: More than normal. Shape: Round. Color: Vivid yellow (Japan Color Chart No. 2507).

Flowering date (*the date when half of the plants are in bloom*).—July 13th.

Harvest date.—August 27th.

Bracts:

Shape.—Aristate.

Length.—Average is 19.1 mm; ranges between 17.0 mm and 21.0 mm.

Width.—Average is 11.1 mm; ranges between 9.0 mm and 13.0 mm.

Margin.—Entire.

Color.—Deep yellow green (Japan Color Chart No. 3307).

Bracteoles:

Shape.—Ovate.

Length.—Average is 11.6 mm; ranges between 11.0 mm and 13.0 mm.

Width.—Average is 7.0 mm; ranges between 6.5 mm and 8.0 mm.

Apex.—Round.

Margin.—Entire.

Color.—Pale yellow green (Japan Color Chart No. 3502).

Bines:

Length.—Greater than 5.5 m.

Diameter.—Average is 8.2 mm; ranges between 6.5 mm and 9.5 mm.

Internode length.—Average is 24.0 cm; ranges between 21.0 cm and 31.0 cm.

Color.—The color of the ridge line is deep purple (Japan Color Chart No. 8608) and the color of the area in-between is deep yellow green (Japan Color Chart No. 3507).

Anthocyanin coloration.—Medium.

Stipule number per bine.—Equal to double the number of internodes.

Stipule direction.—Upper.

Stipule color.—Light yellow green (Japan Color Chart No. 3503).

Pedicels: Not observed.

Reproductive organs:

Stamens.—Not observed.

Pistils.—Not observed.

Yield: 2.25 tons/hectare (2014).

Disease and pest/insect resistance: None observed.

Brewing characteristics: Content of alpha acid is 7.4% in dry matter. Content of beta acids is 4.4% (data from 2013). Ratio content of beta to alpha is 0.5. Content of humulene is 2.4% (data from 2015). Content of caryophyllene is 13.6% (data from 2015). Ratio content of humulene to caryophyllene is 2.21 (data from 2015). Content of cohumulone to alpha acids is 33%. Content of myrcene is 74.8% (data from 2015). Content of farnesene is 1.3% (data from 2015). Content of linalool is 2.10% (data from 2015). Total oil: 1.75 mL per 100 g of cone weight. Flavor of 'Furano 0901B go' is flowery, such as rose. Storage stability: 72.5% after 6 months at room temperature (data from 2015).

COMPARISON WITH PARENTAL LINES AND KNOWN VARIETY

'Furano 0901B go' is a distinct variety of hop. 'Furano 0901B go' is distinguished from its female parent 'Olympic' as described in Table 1:

TABLE 1

Comparison with Parental Line

Characteristic	Variety 'Furano 0901B go'	Female parent 'Olympic'
Flowering date	13th of July	16th of July
Harvest date	27th of August	30th of August
Content of alpha acid in dry matter	7.4%	10.5%
Ratio content of beta acid to alpha acid	0.5	0.8
Content of cohumulone in alpha acid	33%	29%

'Furano 0901B go' is distinguished from its male parent '020448' in that 'Furano 0901B go' develops female flowers that develop into mature hop cones without producing pollen, whereas '020448' produces pollen without developing into female flowers.

'Furano 0901B go' is distinguished from the commercial hop plant 'Little Star' (not patented). Differences between the two varieties are described in Table 2:

TABLE 2

Comparison with Similar Variety

Characteristic	Variety 'Furano 0901B go'	Commercial line 'Little Star'
Flowering date	13th of July	7th of July
Harvest date	20th August	21th August
Content of alpha acid in dry matter	7.4%	7.3%
Ratio content of beta acid to alpha acid	0.5	0.7
Content of cohumulone in alpha acid	33%	22%

We claim:

1. A new and distinct variety of hop plant named 'Furano 0901B go' as illustrated and described herein.

* * * * *

FIG. 1

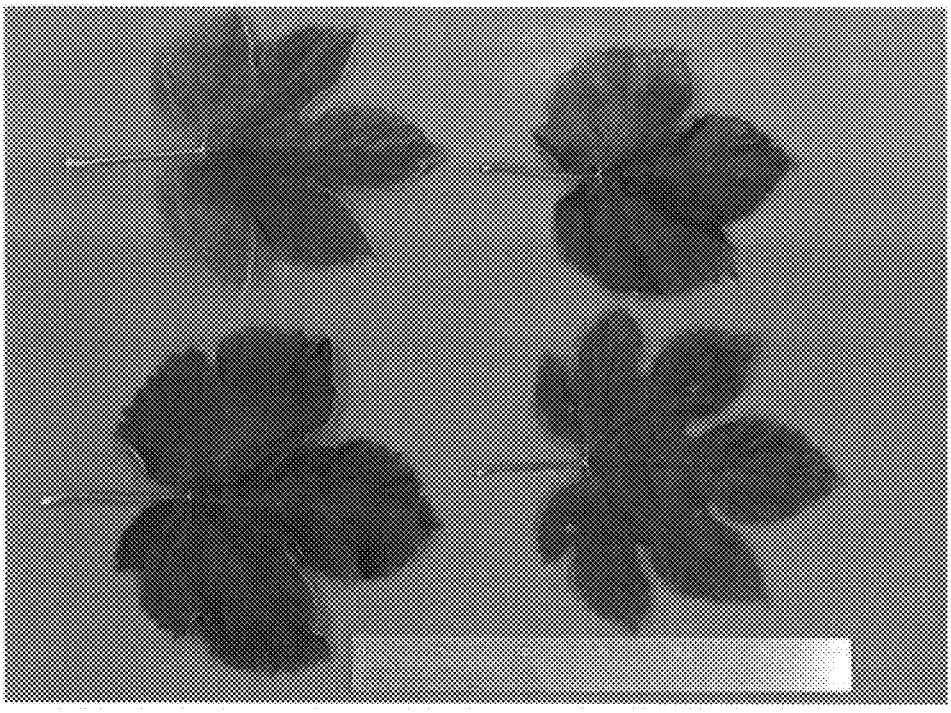

FIG. 2

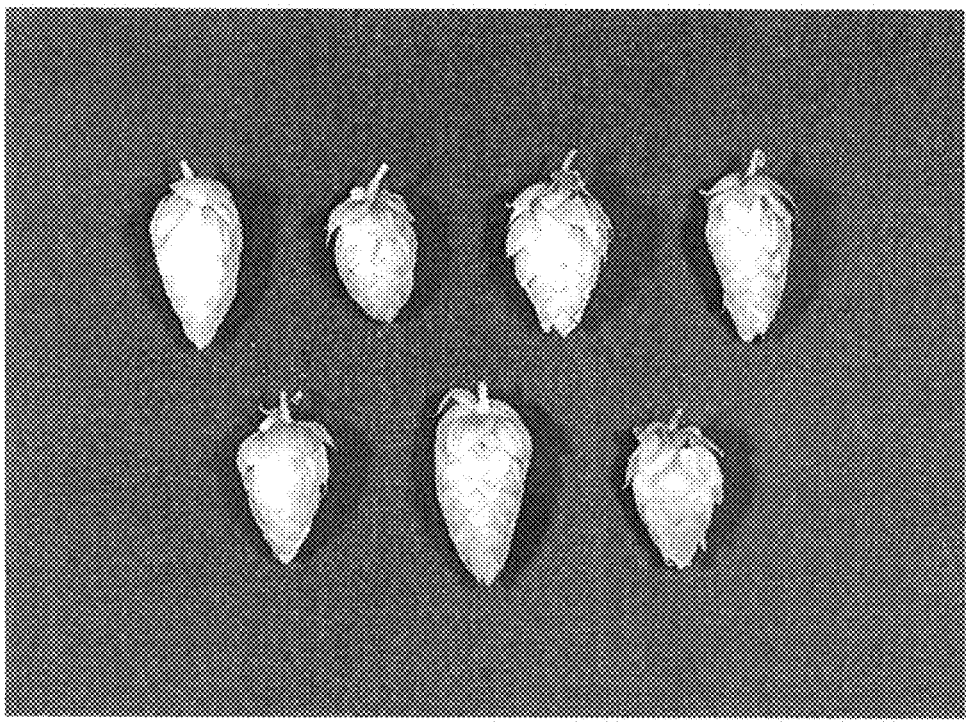

FIG.3