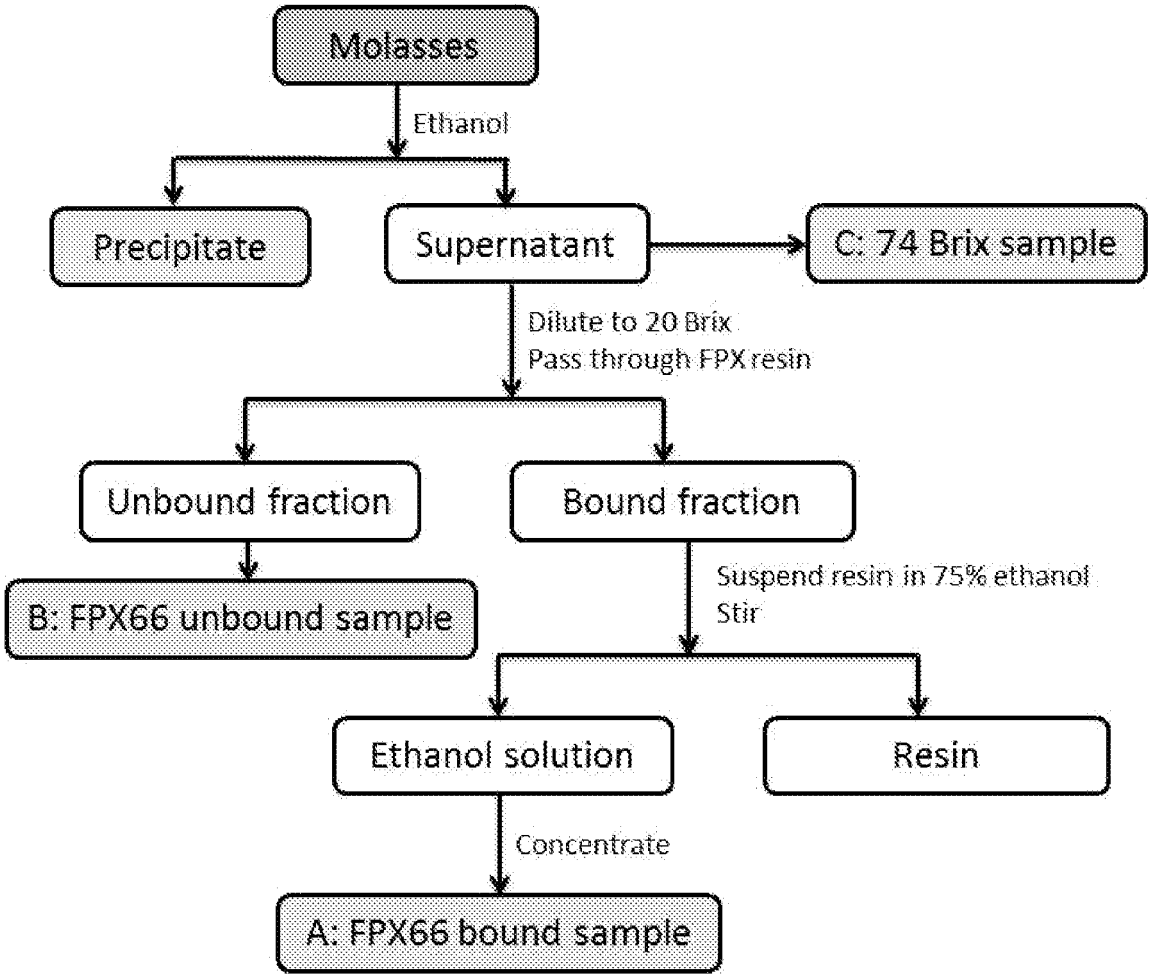

Molasses
Ethanol
Precipitate
Supernatant
C: 74 Brix sample
Dilute to 20 Brix
Pass through FPX resin
Unbound fraction
Bound fraction
B: FPX66 unbound sample
Suspend resin in 75% ethanol
Stir
Ethanol solution
Resin
Concentrate
A: FPX66 bound sample

**Figure 1**

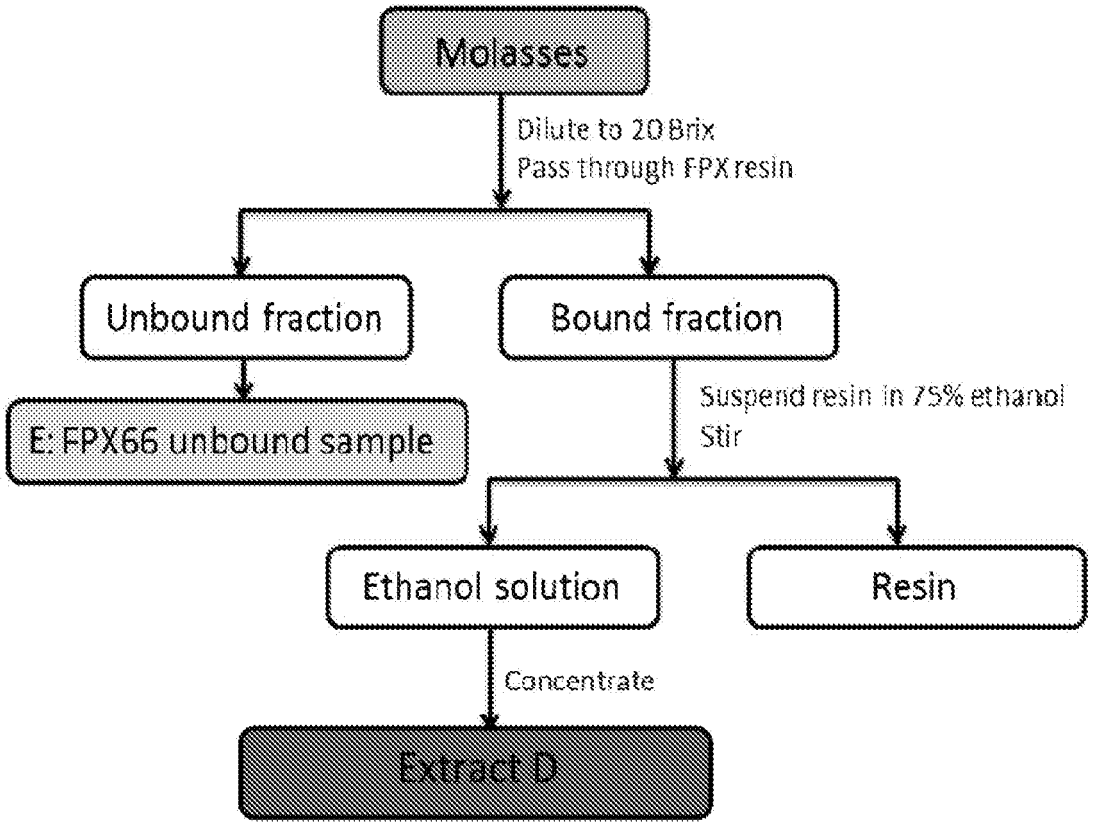

Molasses
Dilute to 20 Brix
Pass through FPX resin
Unbound fraction
Bound fraction
E: FPX66 unbound sample
Suspend resin in 75% ethanol
Stir
Ethanol solution
Resin
Concentrate
Extract D

**Figure 2**

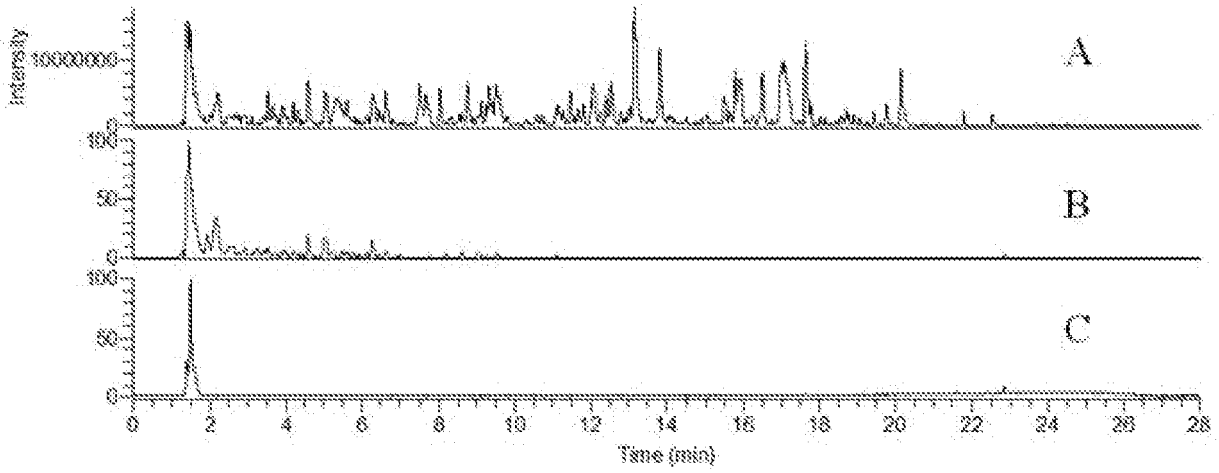

Intensity
1000000
100
50
0
100
50
0
A
B
C
0
2
4
6
8
10
12
14
16
18
20
22
24
26
28
Time (min)

**Figure 3**

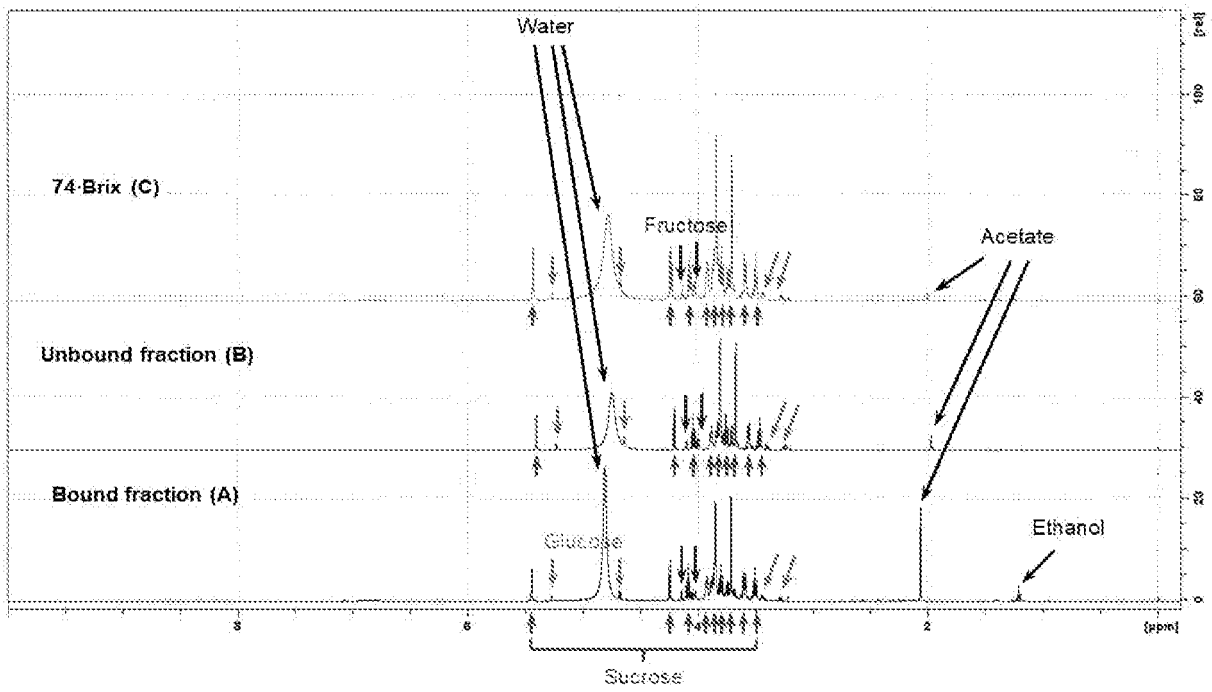

Water
74·Brix (C)
Fructose
Acetate
Unbound fraction (B)
Bound fraction (A)
Ethanol
Glucose
Sucrose
5
6
2
(ppm)

**Figure 4**

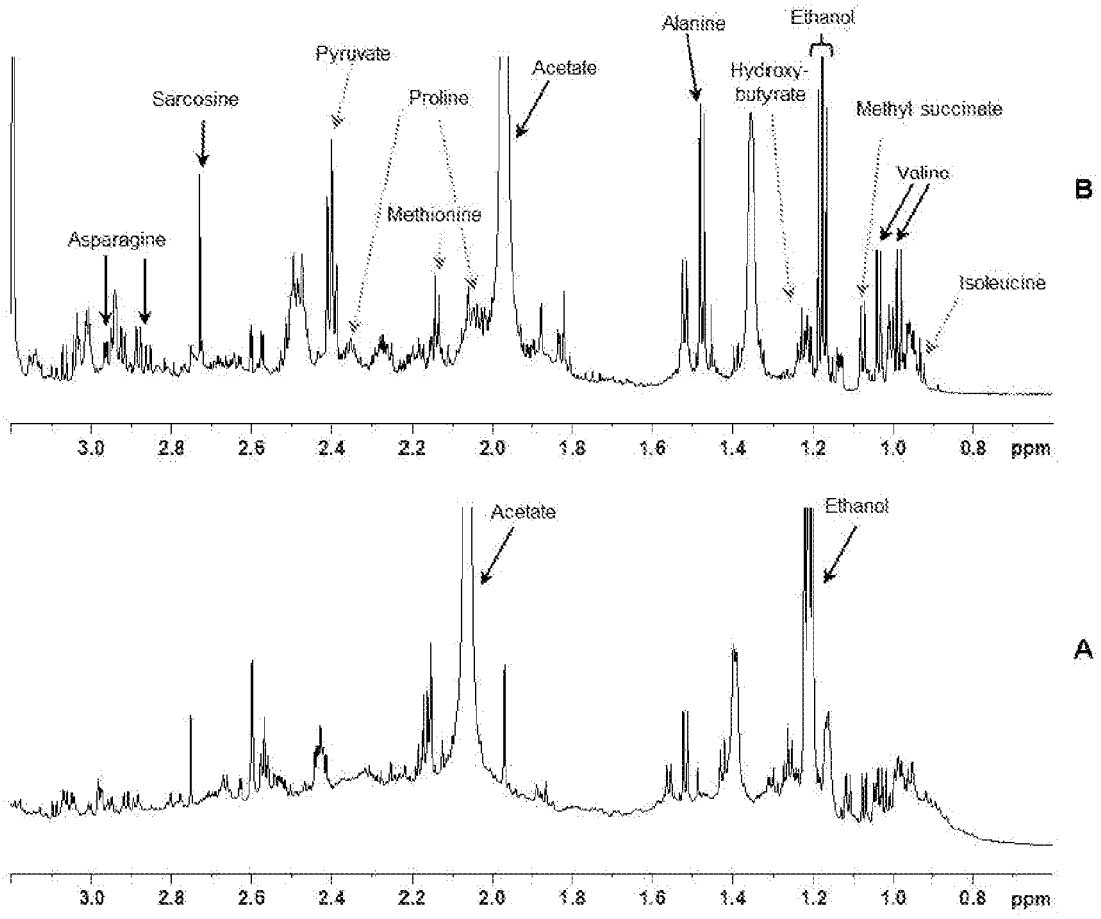

Alanine
Ethanol
Pyruvate
Acetate
Hydroxy-
butyrate
Sarcosine
Proline
Methyt succinate
Valine
Methionine
Asparagine
Isoleucine
B
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
ppm
Acetate
Ethanol
A
3.0
2.8
2.6
2.4
2.2
2.0
1.8
1.6
1.4
1.2
1.0
0.8
ppm

**Figure 5**

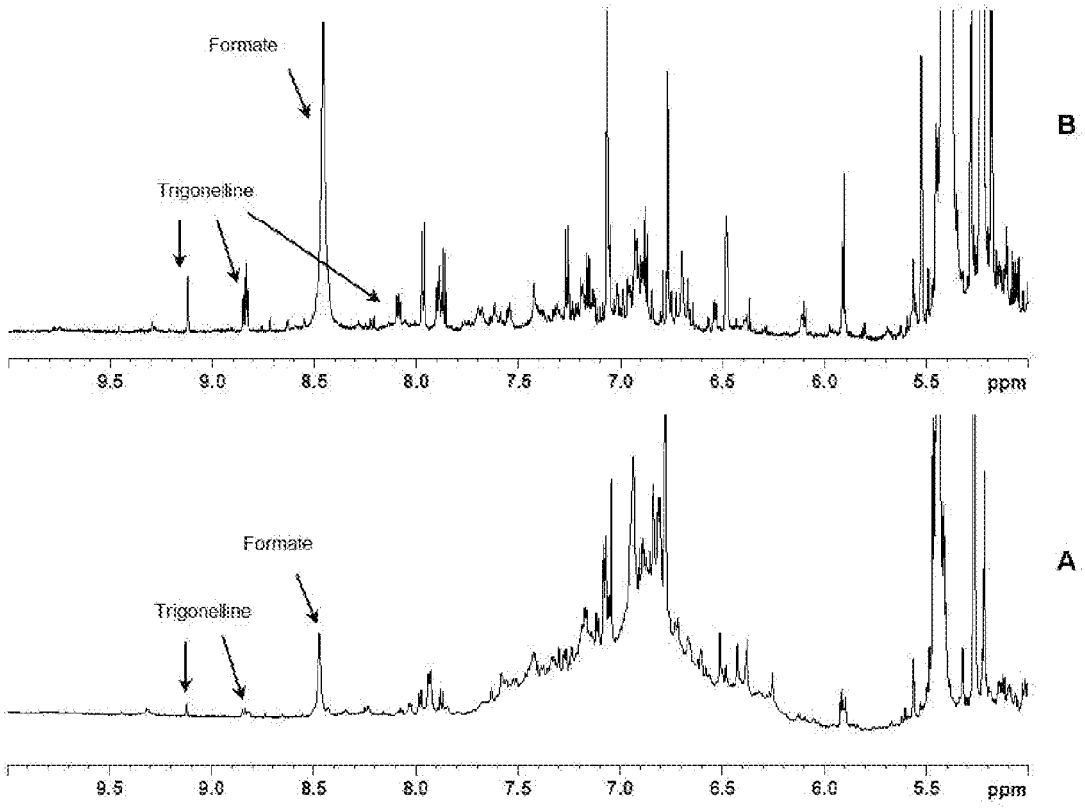
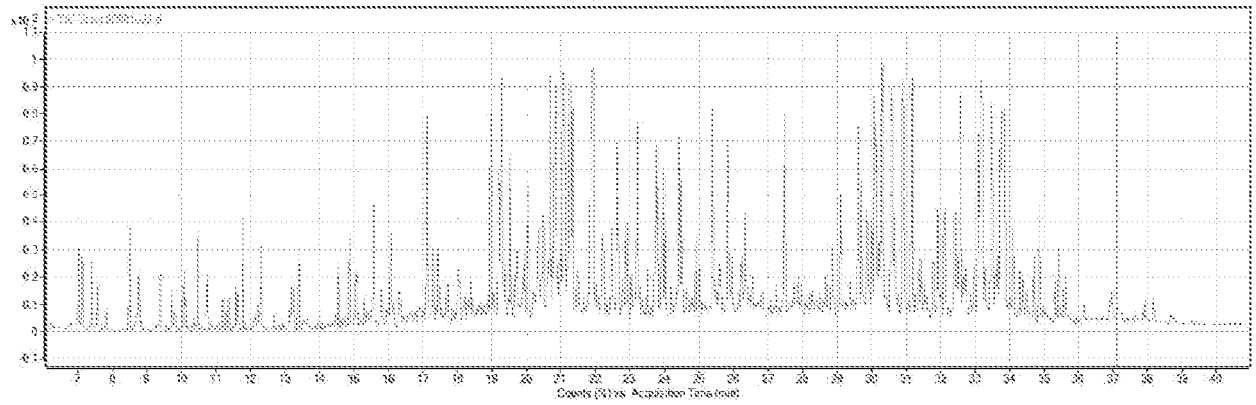

Formate
Trigonelline
B
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
ppm
Formate
Trigonelline
A
9.5
9.0
8.5
8.0
7.5
7.0
6.5
6.0
5.5
ppm

**Figure 6**

(A)



(B)

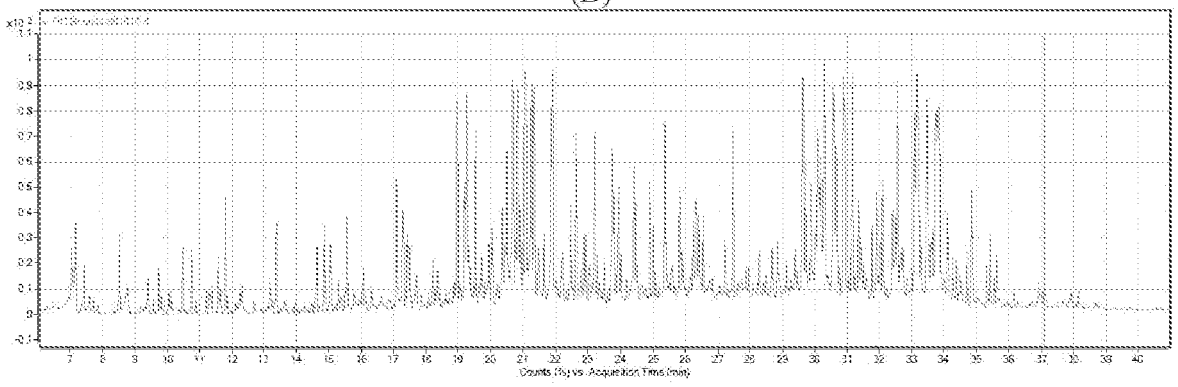


**Figure 7**

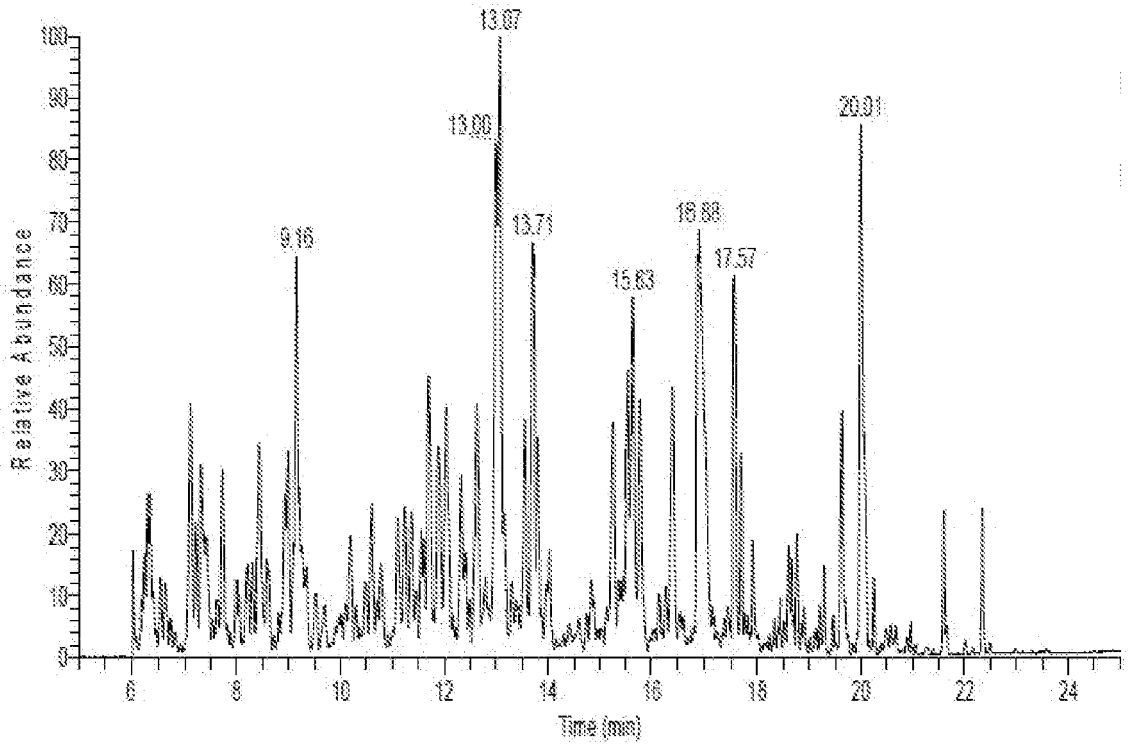

13.07
13.00
20.01
9.16
13.71
16.88
17.57
15.83
Relative Abundance
Time (min)
6
8
10
12
14
16
18
20
22
24

**Figure 8**

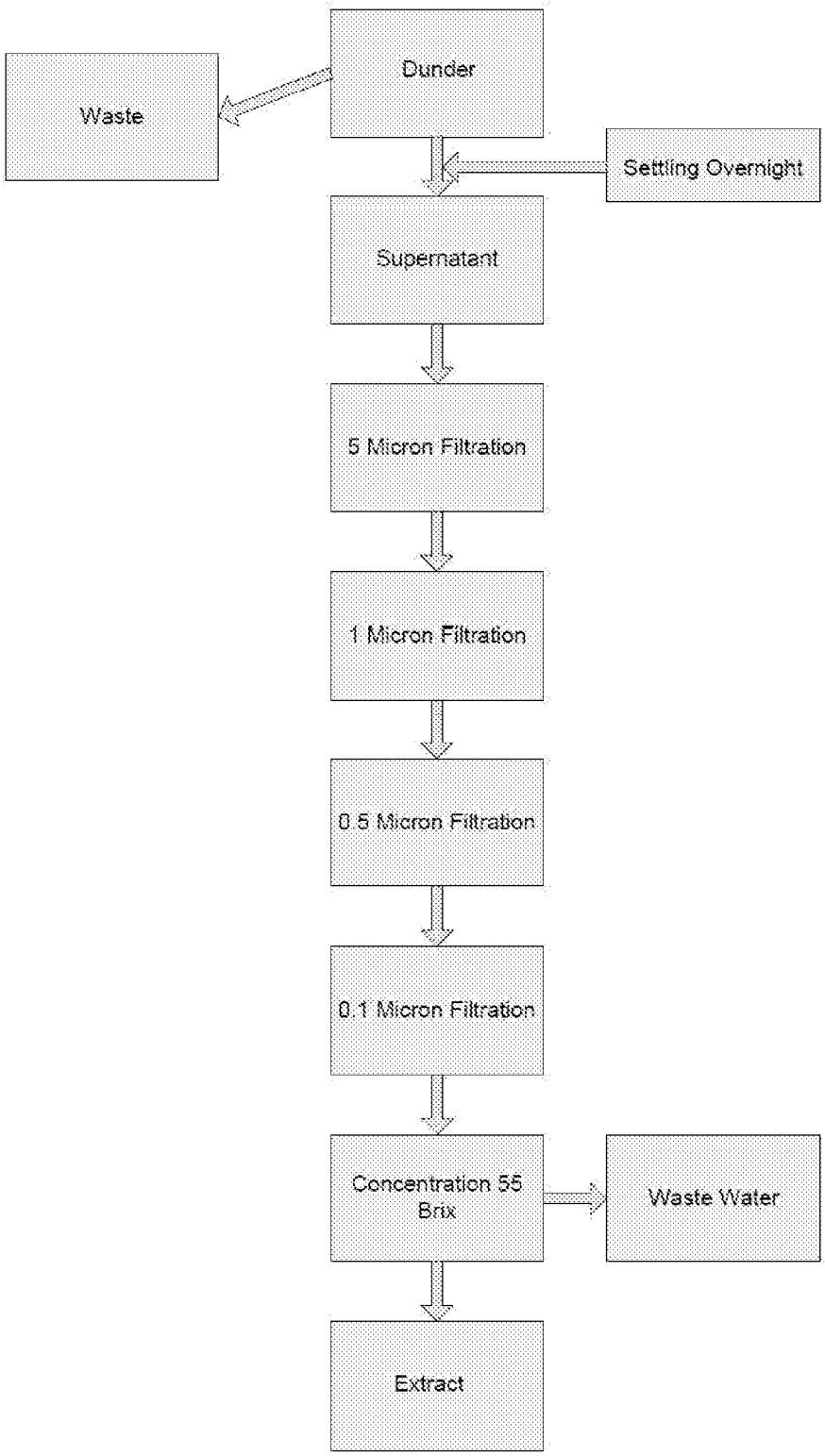

Dunder
Waste
Settling Overnight
Supernatant
5 Micron Filtration
1 Micron Filtration
0.5 Micron Filtration
0.1 Micron Filtration
Concentration 55 Brix
Waste Water
Extract

**Figure 9**

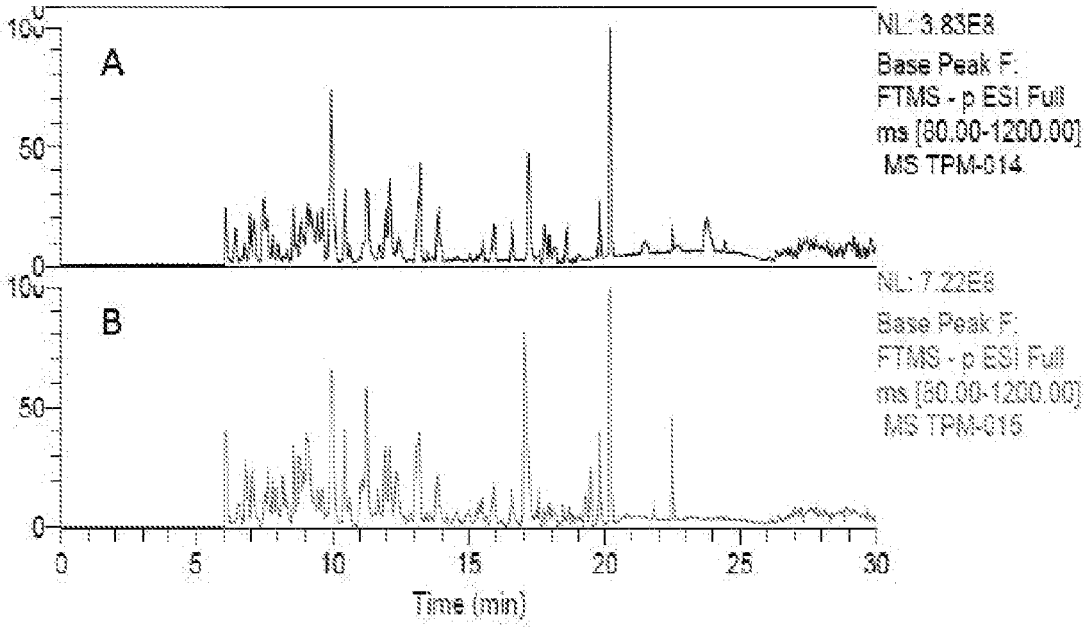

A
B
NL: 3.83E8
Base Peak F:
FTMS - p ESI Full
ms [80.00-1200.00]
MS TPM-014
NL: 7.22E8
Base Peak F:
FTMS - p ESI Full
ms [80.00-1200.00]
MS TPM-015
100
50
0
0
5
10
15
20
25
30
Time (min)

Figure 10

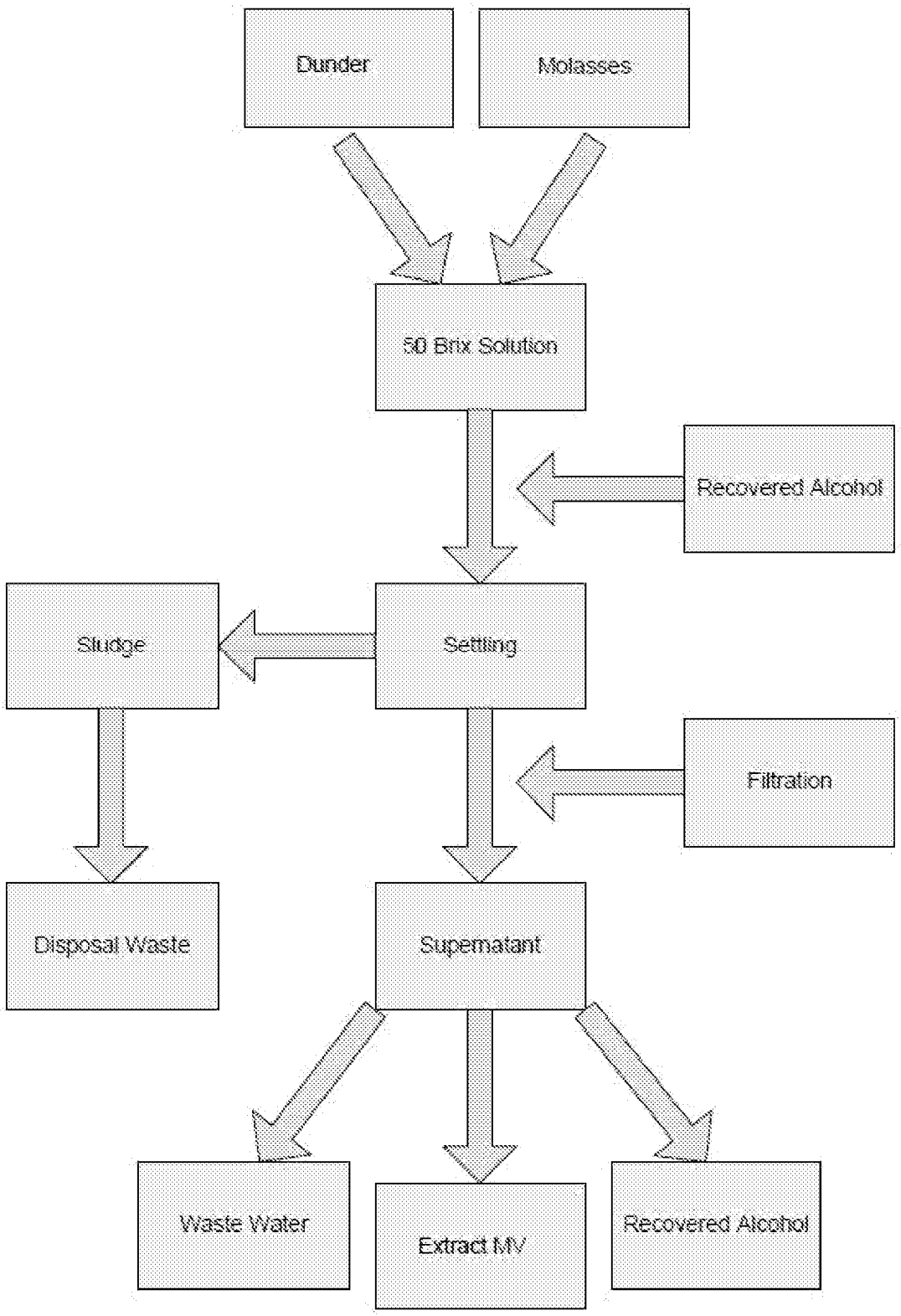

Dunder
Molasses
50 Brix Solution
Recovered Alcohol
Sludge
Settling
Filtration
Disposal Waste
Supernatant
Waste Water
Extract MV
Recovered Alcohol

**Figure 11**

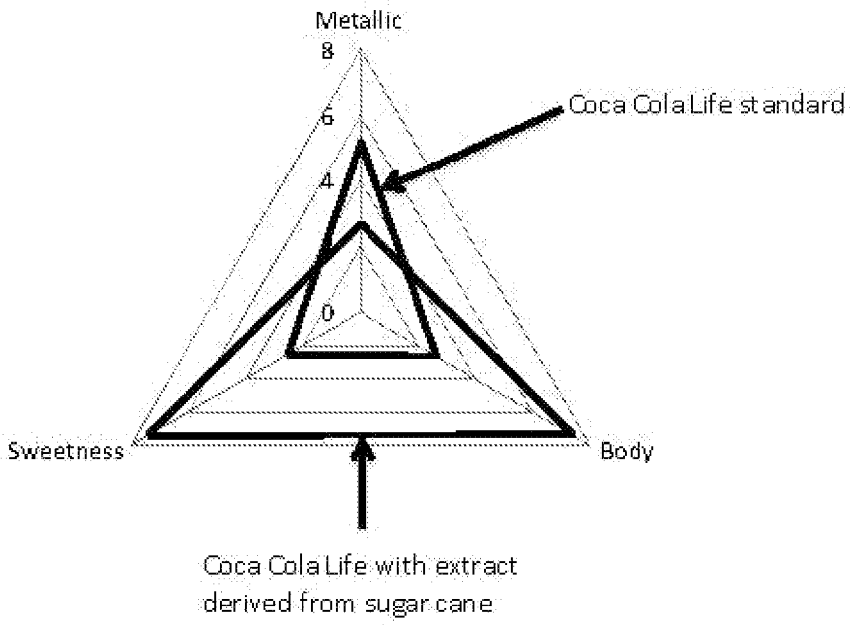

Metallic
8
6
4
0
Coca Cola Life standard
Sweetness
Body
Coca Cola Life with extract
derived from sugar cane

**Figure 12**

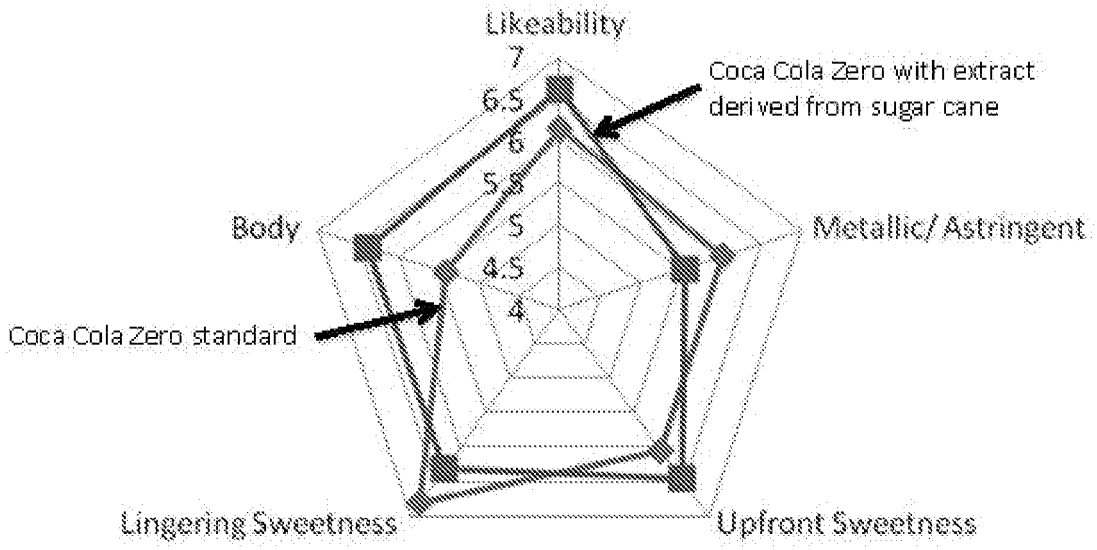

Likeability
7
6.5
6
5.5
5
4.5
4
Coca Cola Zero with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Coca Cola Zero standard

**Figure 13**

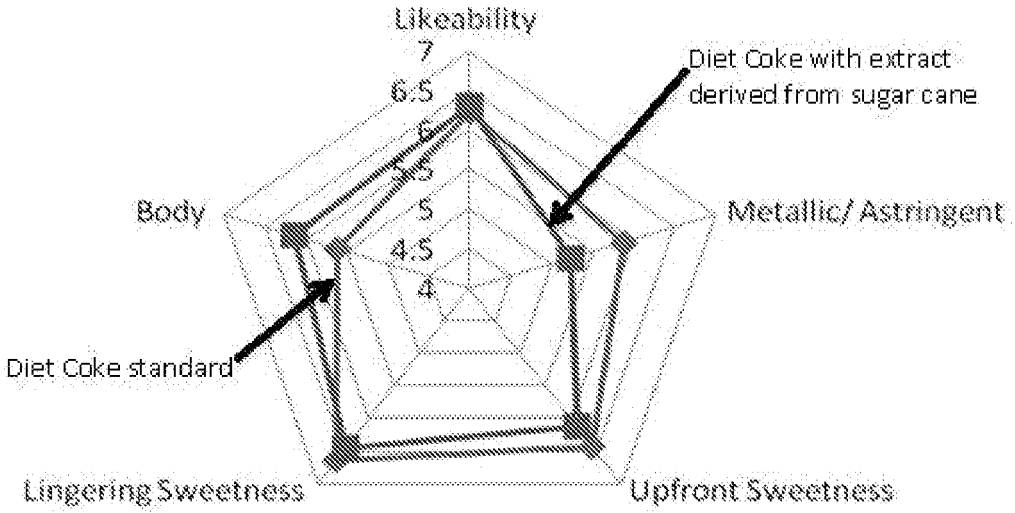

Likeability
7
6.5
6
5.5
5
4.5
4
Diet Coke with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Diet Coke standard
Body

**Figure 14**

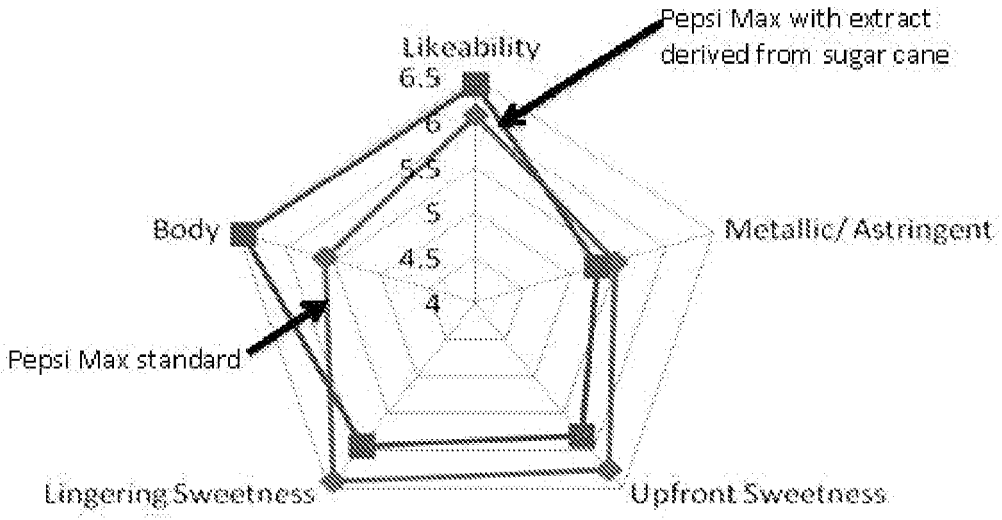

Likeability
6.5
6
5.5
5
4.5
4
Pepsi Max with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Pepsi Max standard

**Figure 15**

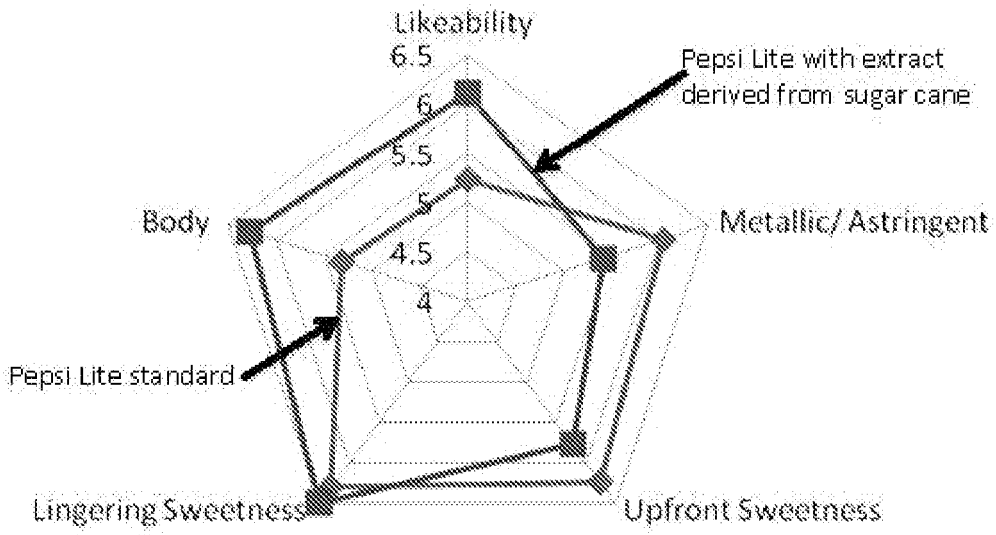

Likeability
6.5
6
5.5
5
4.5
4
Pepsi Lite with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Pepsi Lite standard

**Figure 16**

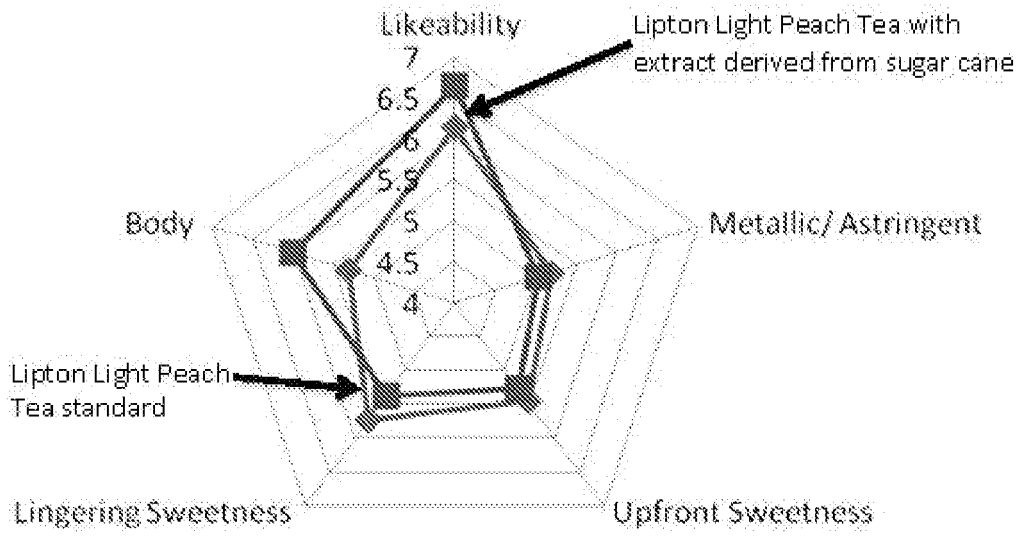

Likeability
7
6.5
6
5.5
5
4.5
4
Lipton Light Peach Tea with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Lipton Light Peach Tea standard

**Figure 17**

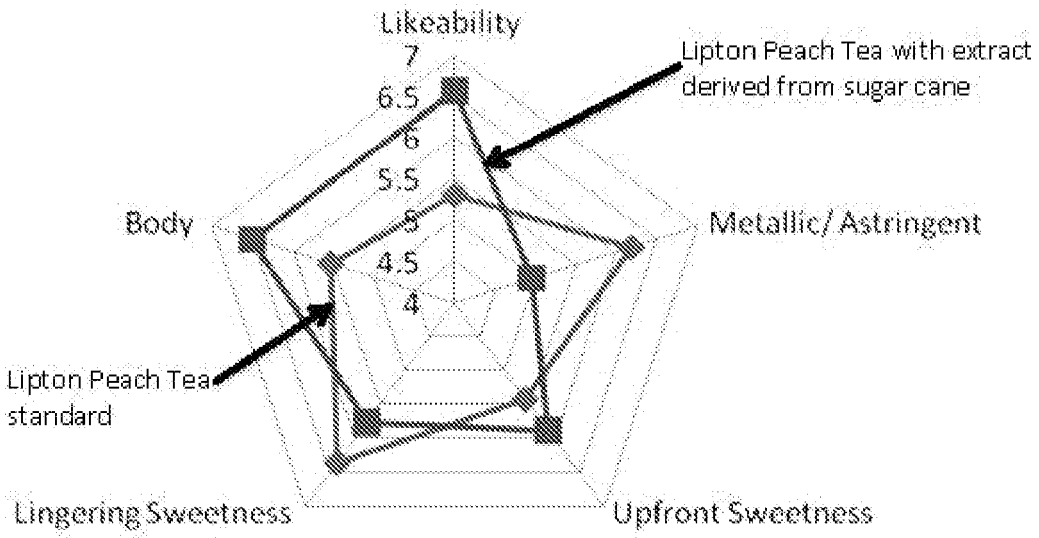

Likeability
7
6.5
6
5.5
5
4.5
4
Lipton Peach Tea with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Lipton Peach Tea standard

**Figure 18**

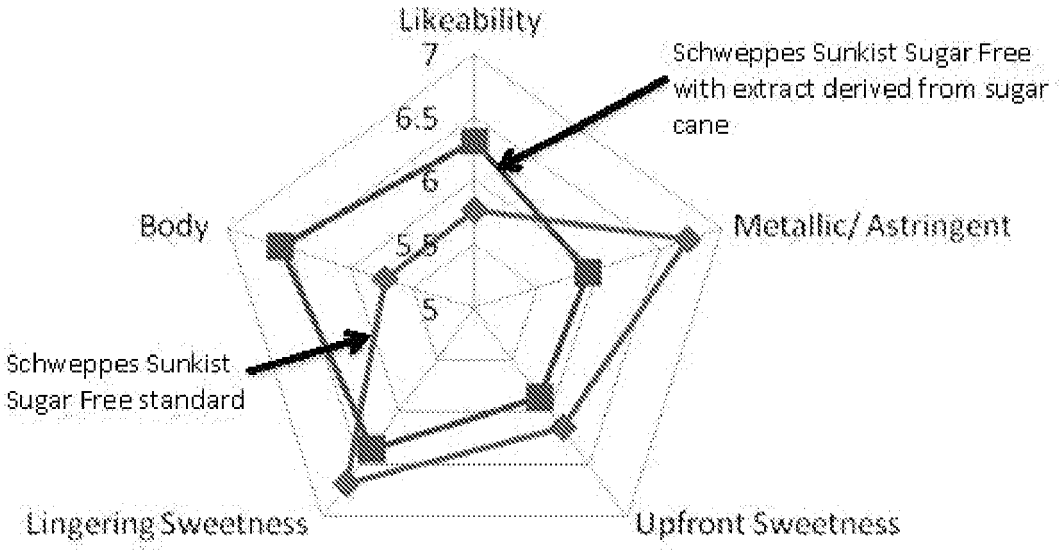

Likeability
7
6.5
6
5.5
5
Schweppes Sunkist Sugar Free with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Schweppes Sunkist Sugar Free standard

**Figure 19**

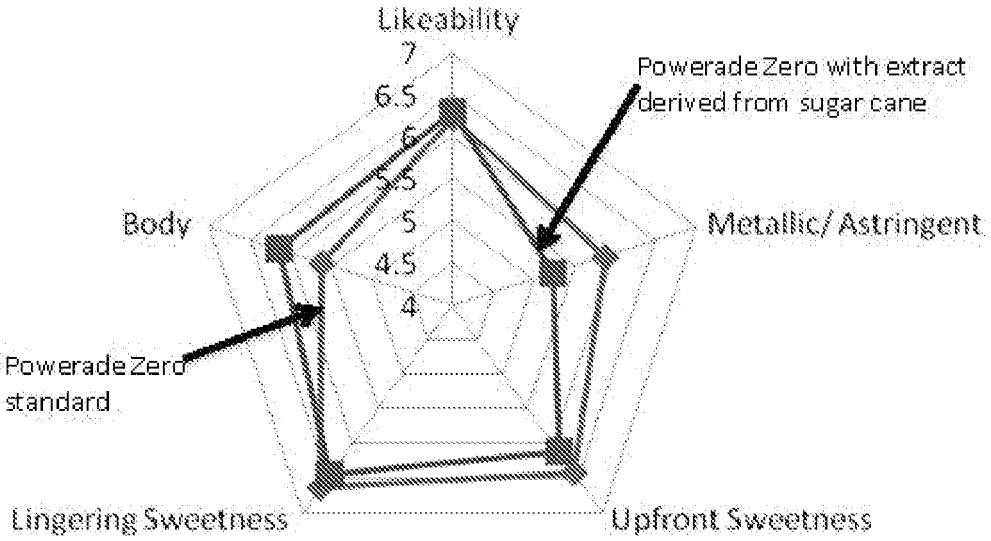

Likeability
7
6.5
6
5.5
5
4.5
4
Powerade Zero with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Powerade Zero standard
Body

**Figure 20**

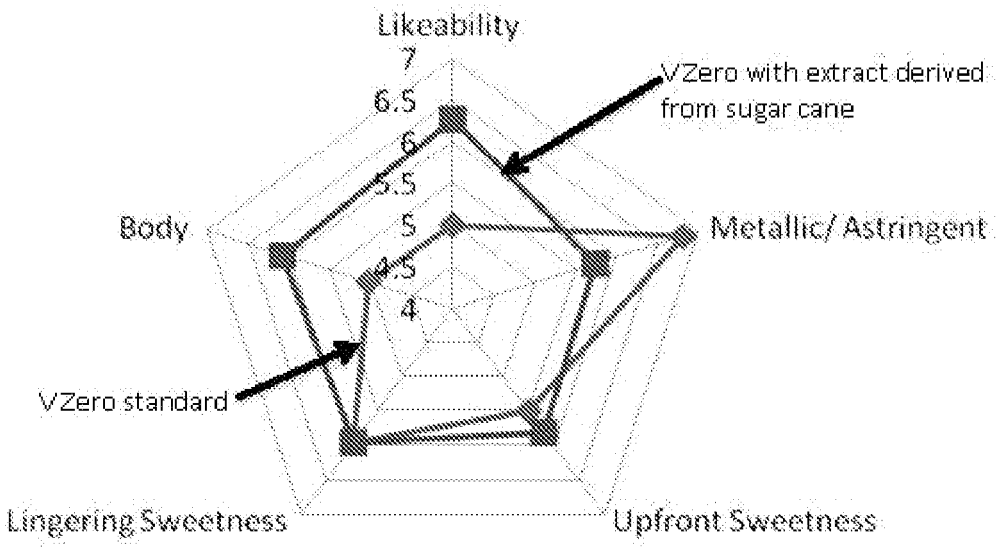

Likeability
7
6.5
6
5.5
5
4.5
4
VZero with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
VZero standard
Body

**Figure 21**

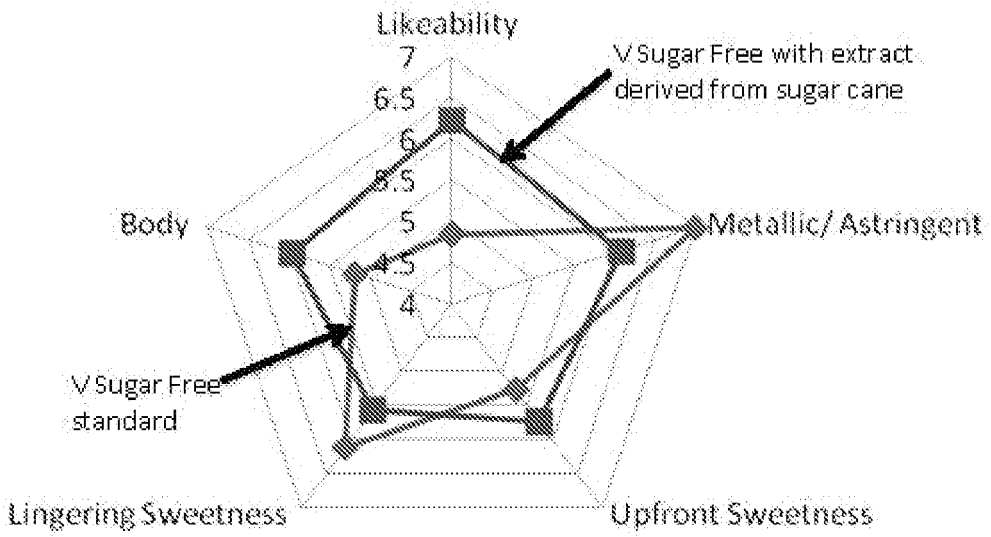

Likeability
7
6.5
6
5.5
5
4.5
4
V Sugar Free with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
V Sugar Free standard
Body

**Figure 22**

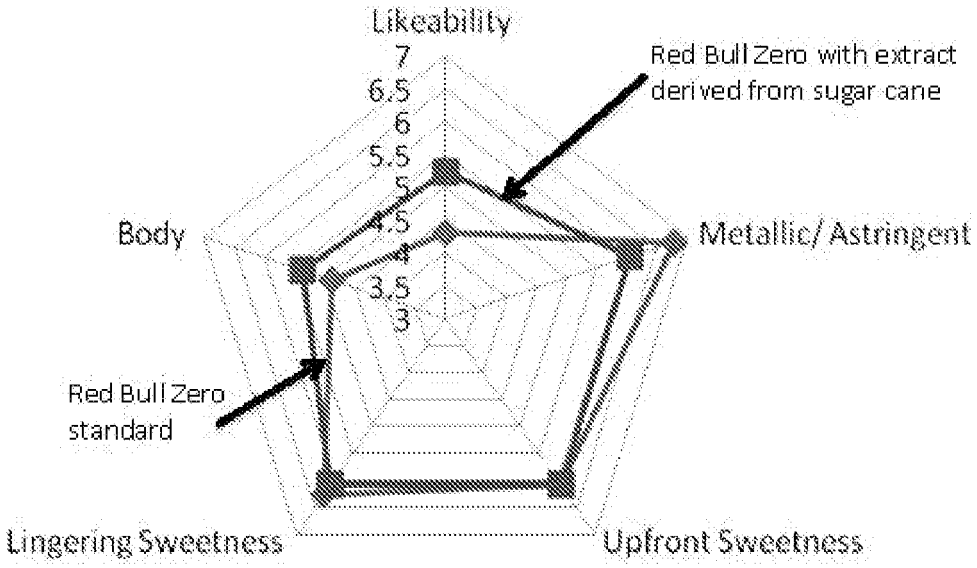

Likeability
7
6.5
6
5.5
5
4.5
4
3.5
3
Red Bull Zero with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Red Bull Zero standard

**Figure 23**

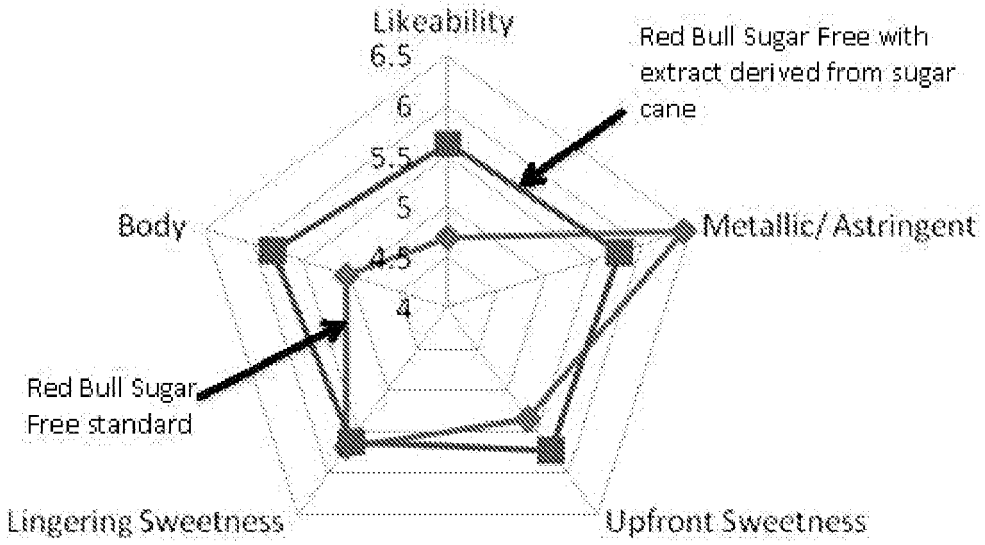

Likeability
6.5
6
5.5
5
4.5
4
Red Bull Sugar Free with extract derived from sugar cane
Metallic/ Astringent
Upfront Sweetness
Lingering Sweetness
Body
Red Bull Sugar Free standard

**Figure 24**

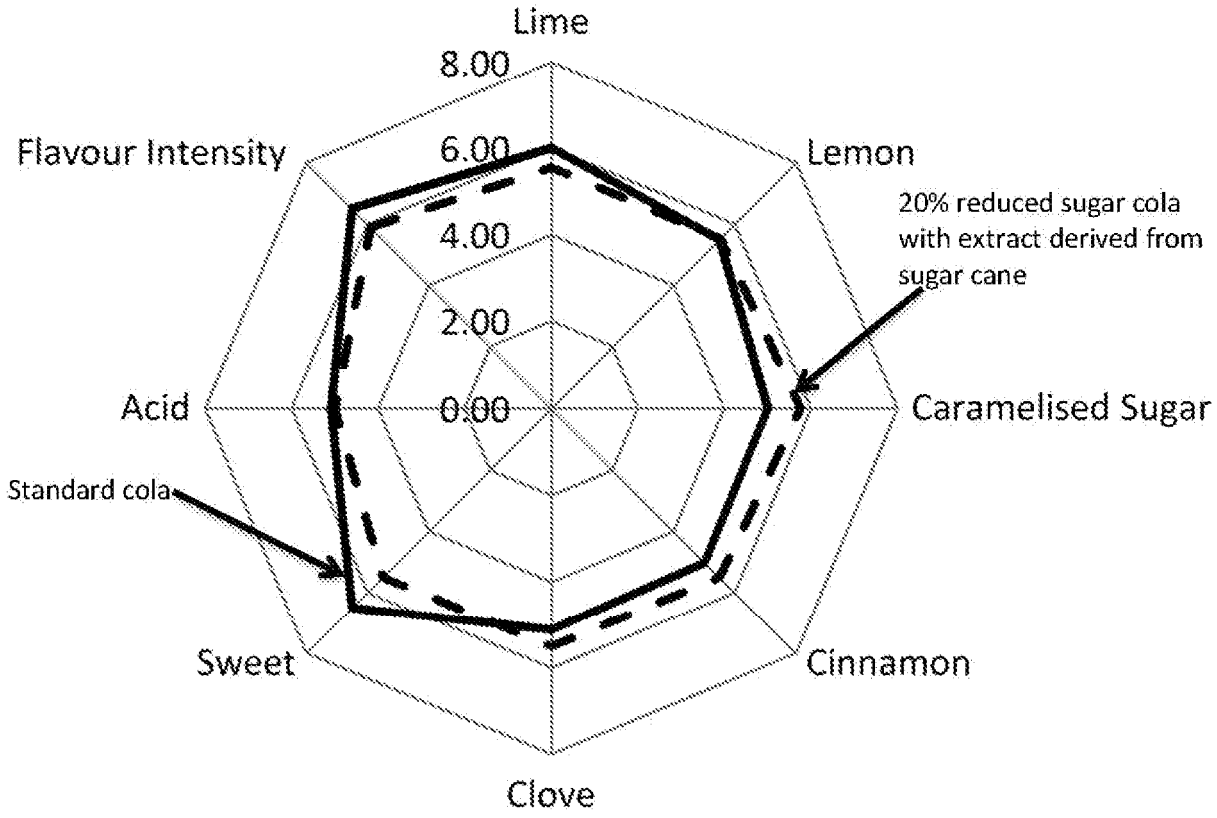

Lime
8.00
6.00
4.00
2.00
0.00
Lemon
Caramelised Sugar
Cinnamon
Clove
Sweet
Acid
Flavour Intensity
20% reduced sugar cola with extract derived from sugar cane
Standard cola

**Figure 25**

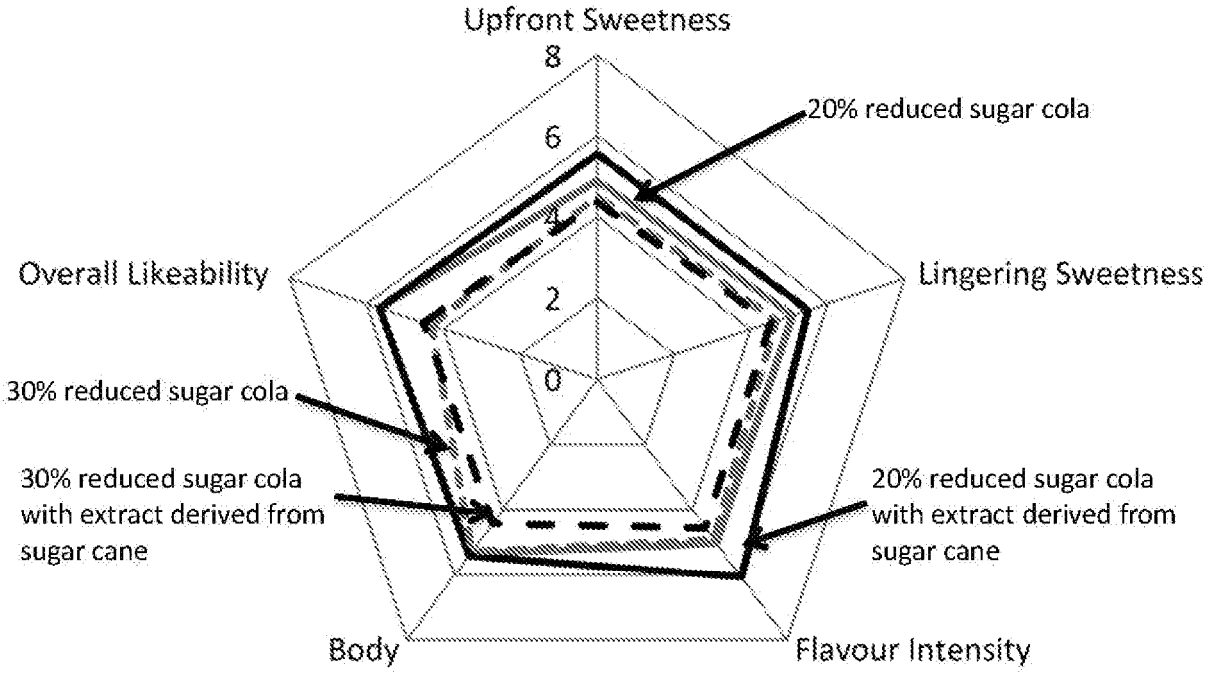

Upfront Sweetness
8
6
4
2
0
20% reduced sugar cola
Lingering Sweetness
Overall Likeability
30% reduced sugar cola
30% reduced sugar cola with extract derived from sugar cane
20% reduced sugar cola with extract derived from sugar cane
Body
Flavour Intensity

**Figure 26**

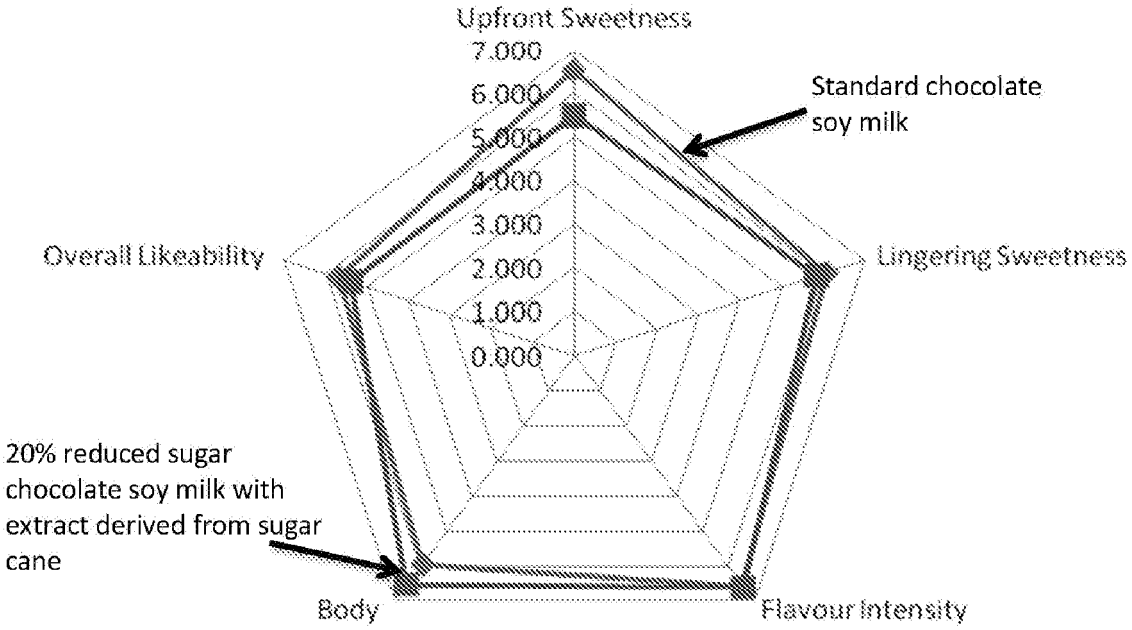

Upfront Sweetness
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Standard chocolate soy milk
Lingering Sweetness
Flavour Intensity
Body
20% reduced sugar chocolate soy milk with extract derived from sugar cane
Overall Likeability

**Figure 27**

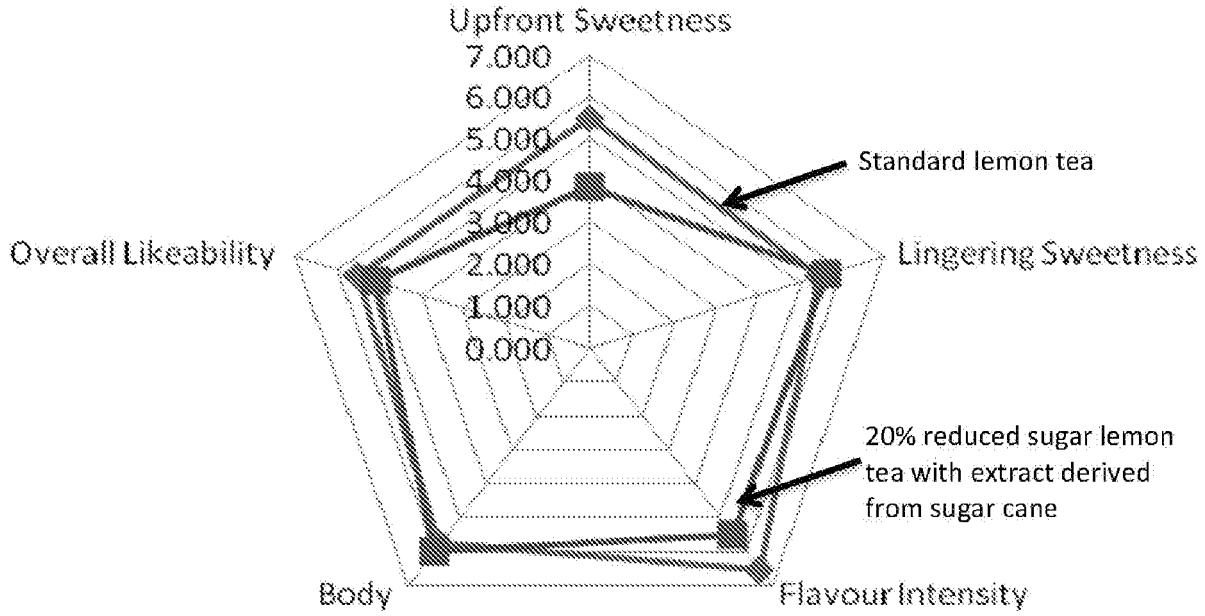

Upfront Sweetness
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Standard lemon tea
Lingering Sweetness
20% reduced sugar lemon tea with extract derived from sugar cane
Flavour Intensity
Body
Overall Likeability

**Figure 28**

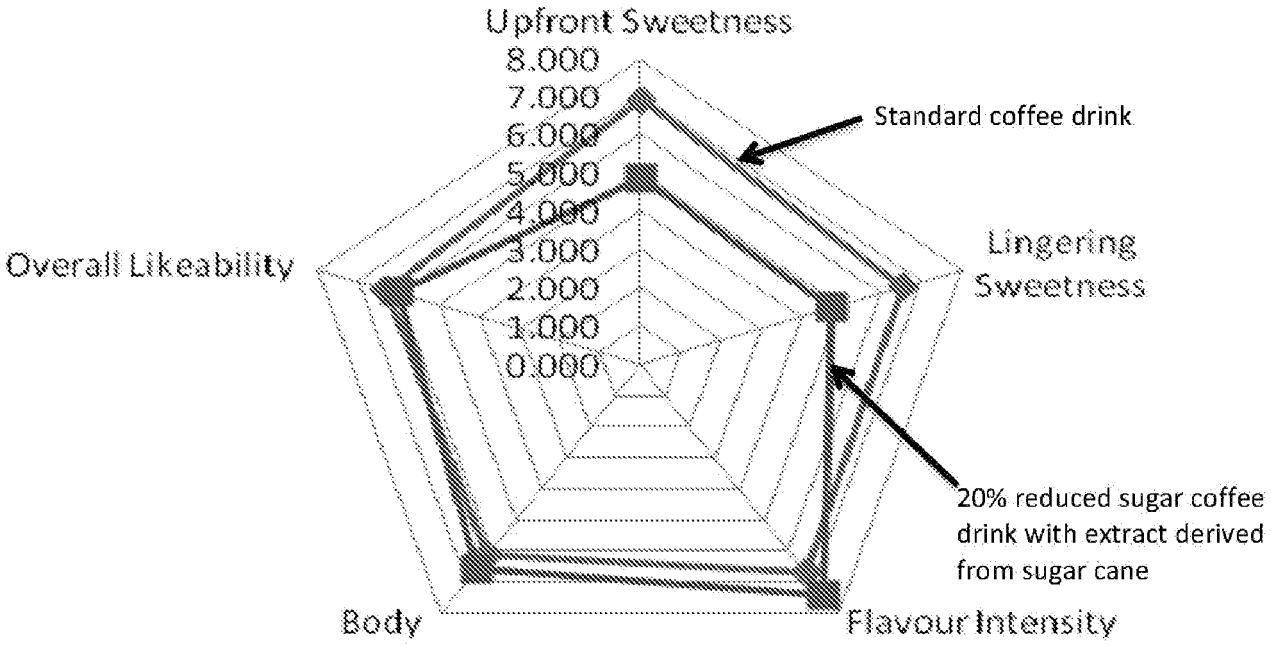

Upfront Sweetness
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Standard coffee drink
Lingering Sweetness
20% reduced sugar coffee drink with extract derived from sugar cane
Flavour Intensity
Body
Overall Likeability

**Figure 29**

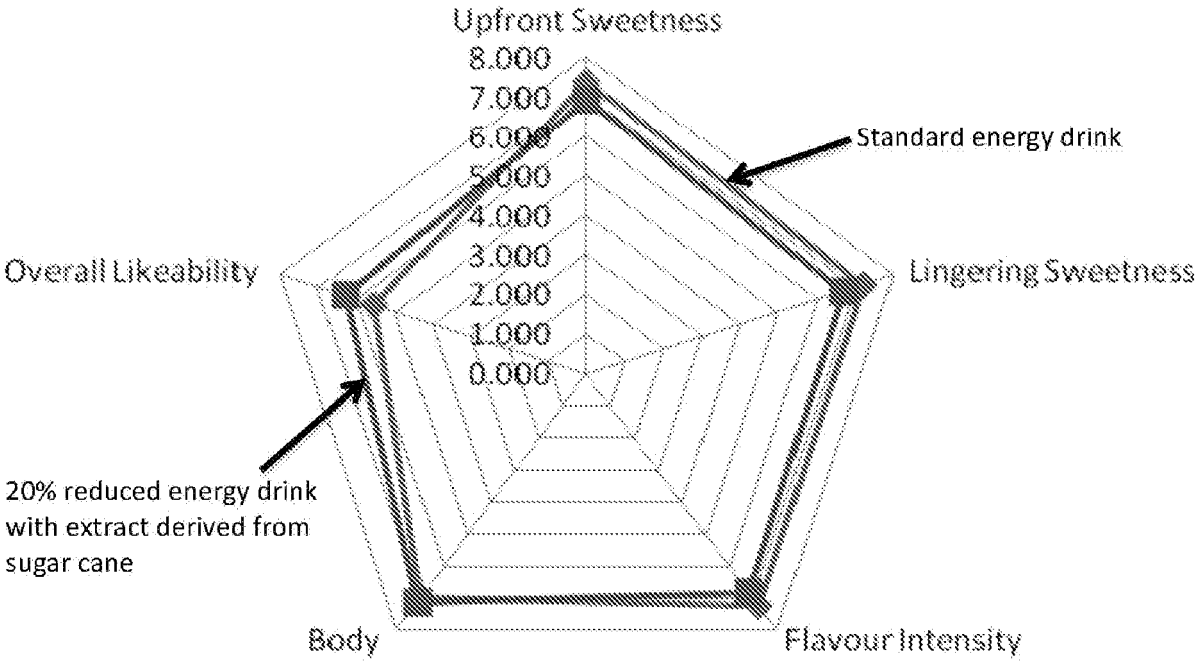

Upfront Sweetness
8.000
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Standard energy drink
Lingering Sweetness
Flavour Intensity
Body
20% reduced energy drink with extract derived from sugar cane
Overall Likeability

**Figure 30**

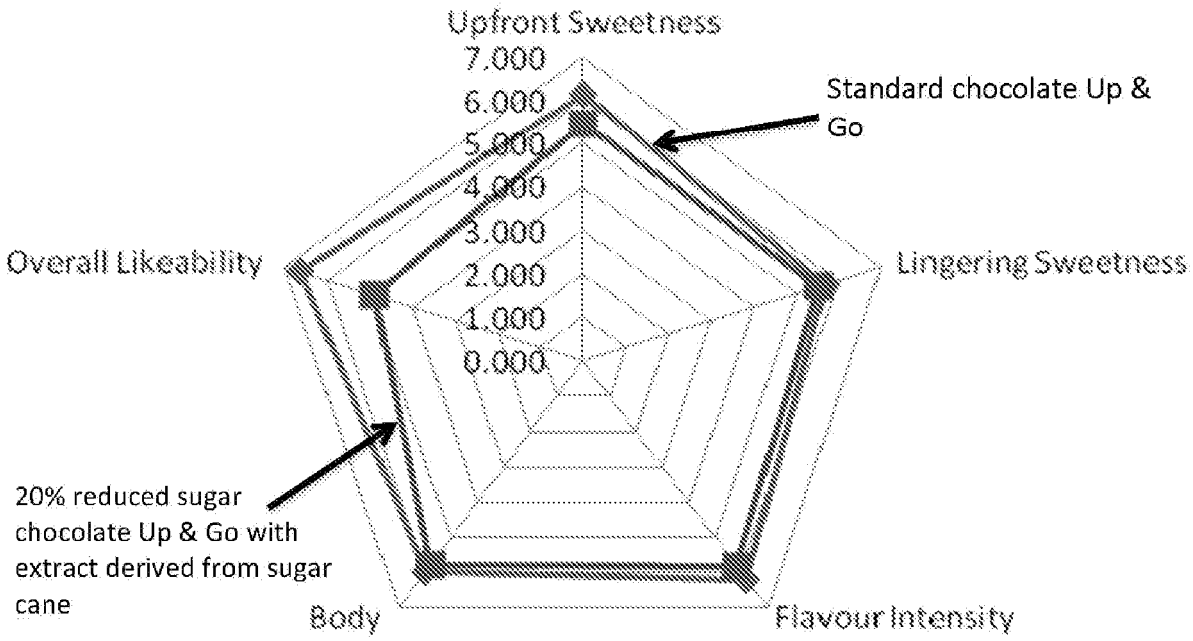

Upfront Sweetness
7.000
6.000
5.000
4.000
3.000
2.000
1.000
0.000
Standard chocolate Up & Go
Lingering Sweetness
Flavour Intensity
Body
20% reduced sugar chocolate Up & Go with extract derived from sugar cane
Overall Likeability

**Figure 31**