

Time, age, gender, and test practice effects on children's olfactory performance: a two-year longitudinal study

Chemosensory Perception

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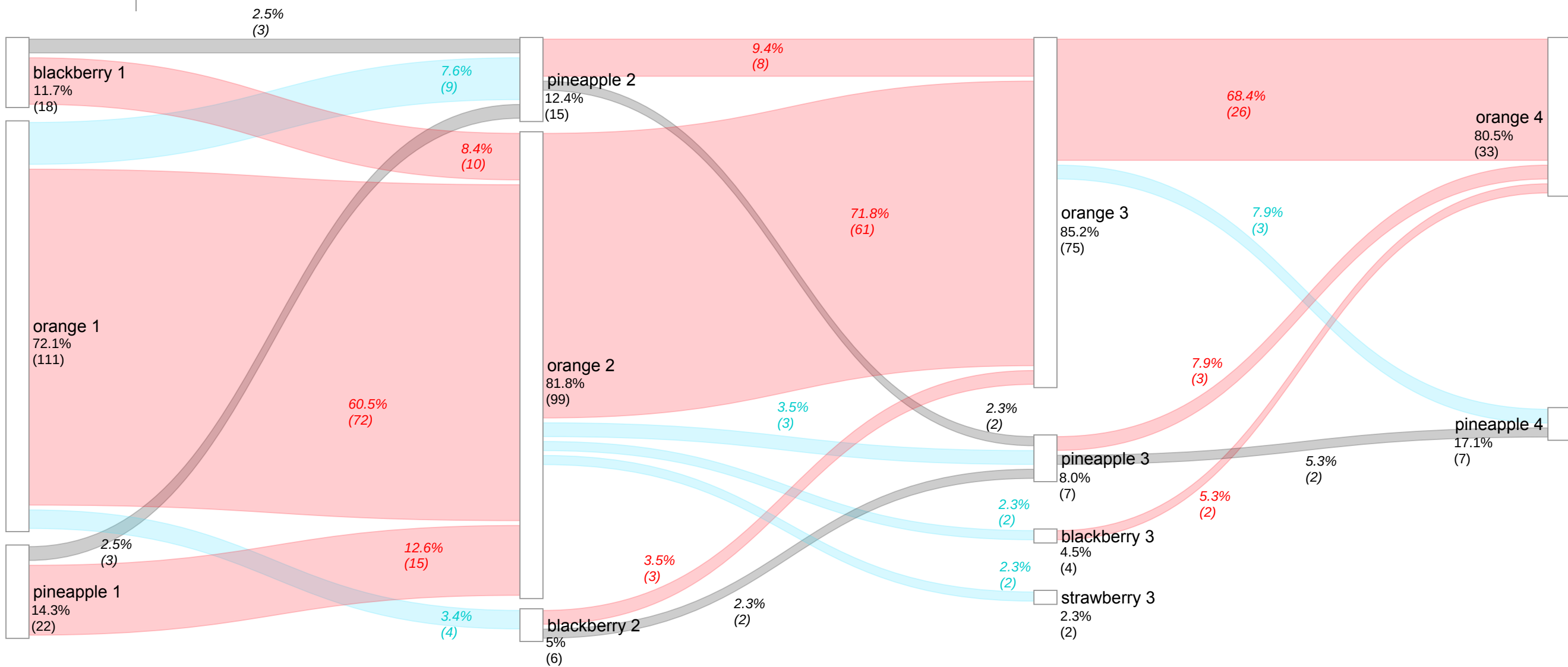
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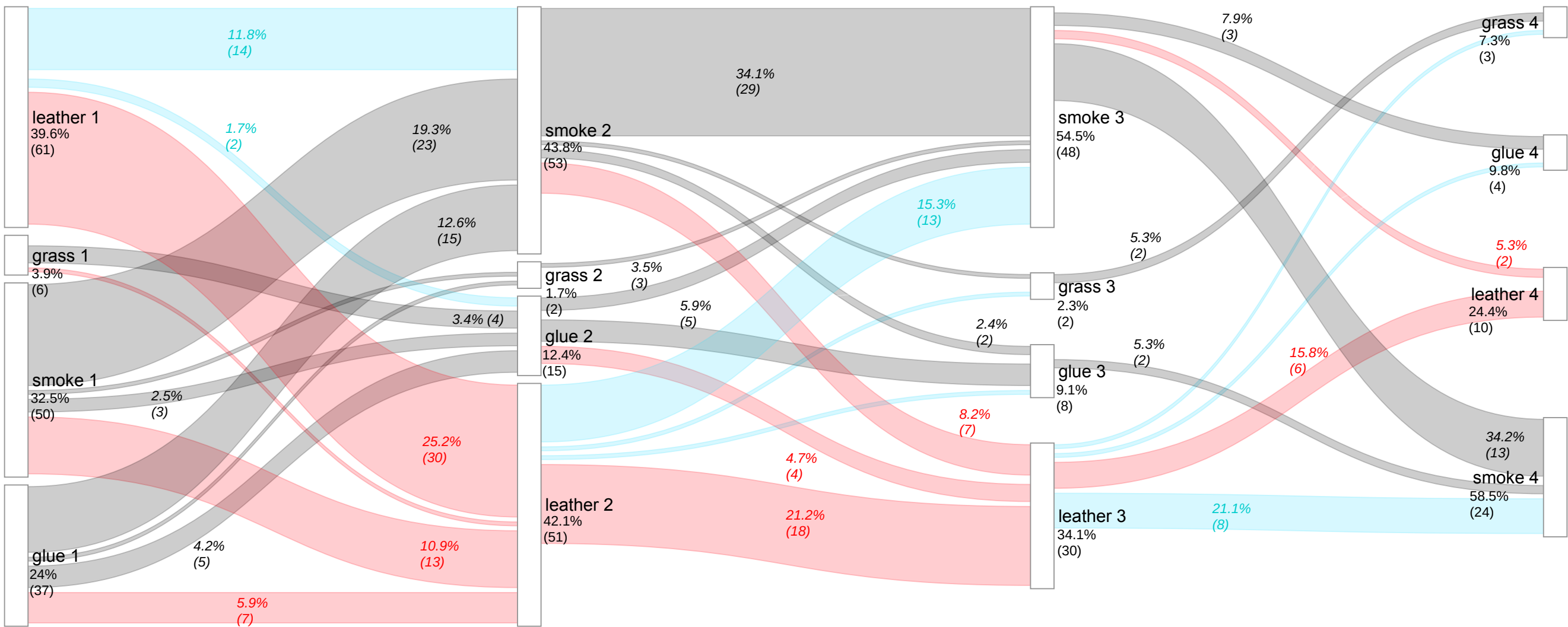
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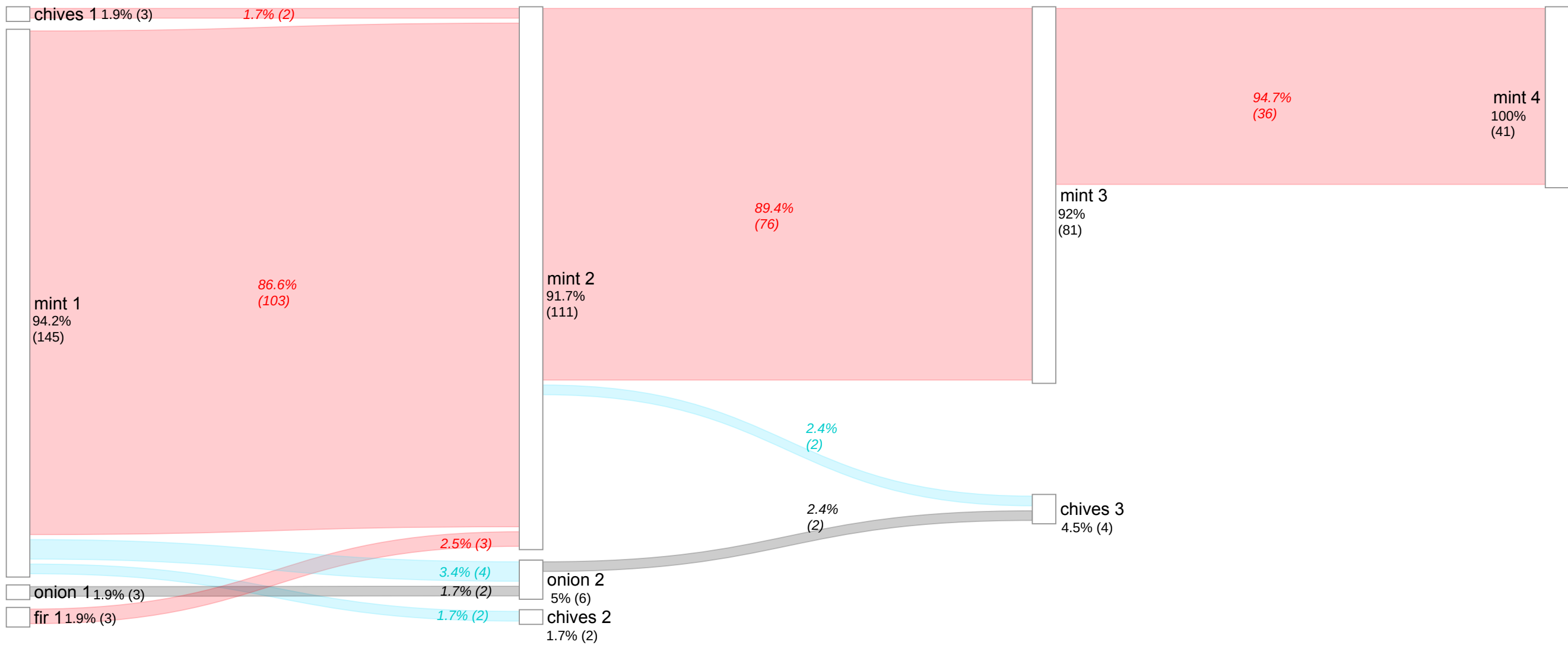
Online Resource 3a. Sankey charts for the individual items of the adapted Sniffin' Sticks identification test. Based on the pilot study, items 3 (cinnamon), 8 (turpentine), 12 (cloves), and 15 (aniseed) were omitted from the test set. The rectangles (nodes) represent the four alternative labels available for each odorant. The size of a rectangle is proportional to the frequency with which the given label was selected. Indices 1-4 indicate session number, i.e. progressively greater experience with testing regardless of wave. Relative frequencies at nodes were calculated from sample sizes of children who completed the odor identification task within session 1, 2, 3, and 4. These were $N = 154, 121, 88,$ and $41,$ respectively. Links between pairs of labels represent the proportion of children who selected a given label in one session and the other one in the next. Relative frequencies at links were calculated from sample sizes of children who participated in session 1 and 2, 2 and 3, and 3 and 4. These were $N = 119, 85,$ and $38,$ respectively. A missing node or link indicates that the given label was selected by fewer than two children. Links highlighted in red indicate paths to the veridical label (correct label of an odorant, target), that is, the proportion of consistent correct responders or inconsistent ones who improved in the next session. Blue links represent paths away from the veridical label, i.e. the proportion of inconsistent responders who were incorrect in the next session.

ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 1 (TARGET: ORANGE).

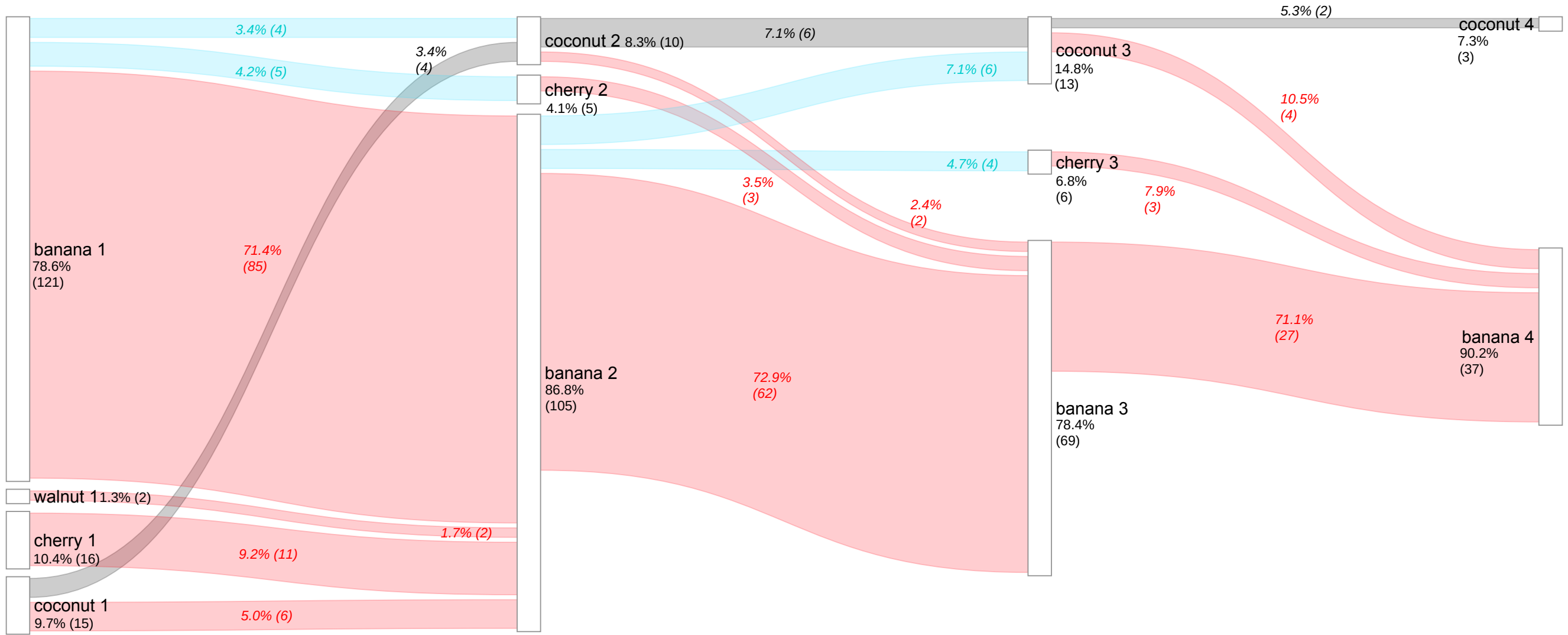


ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 2 (TARGET: LEATHER).

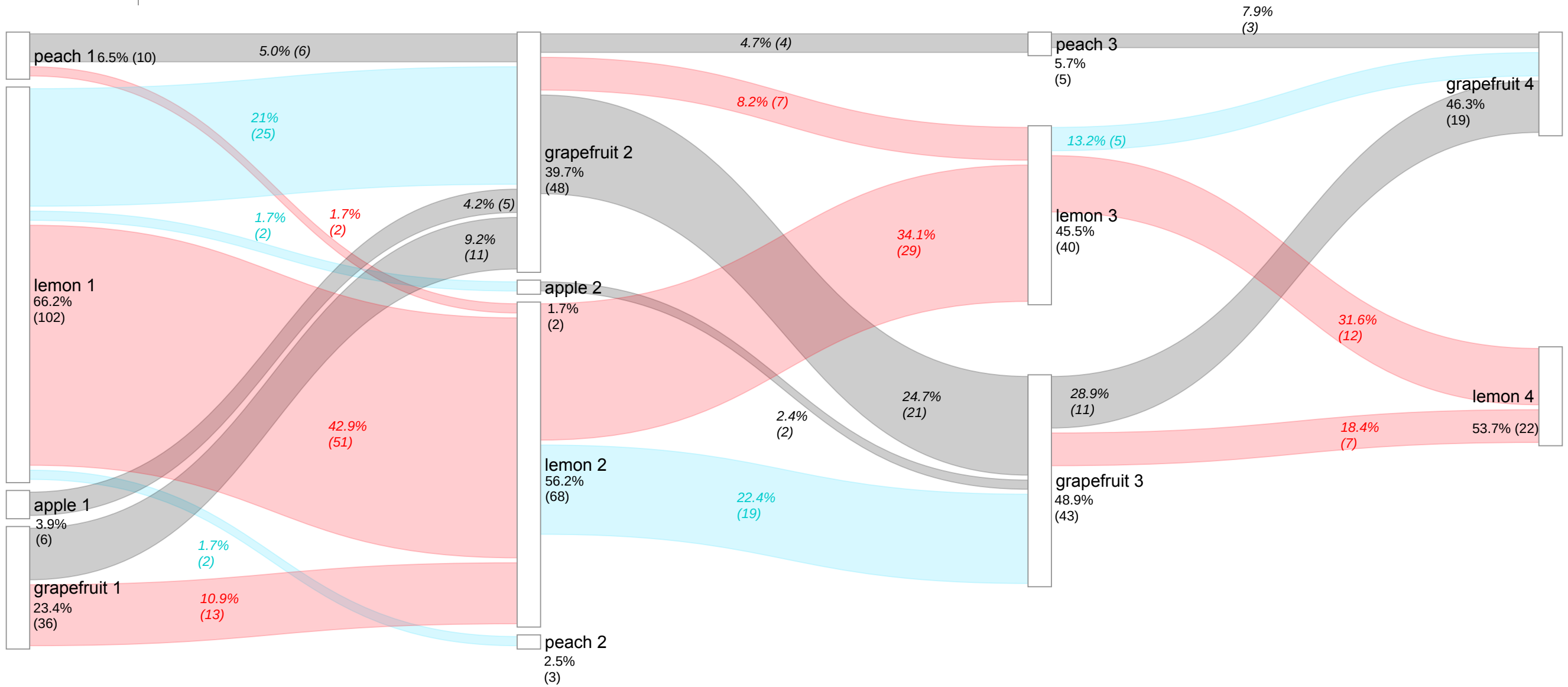




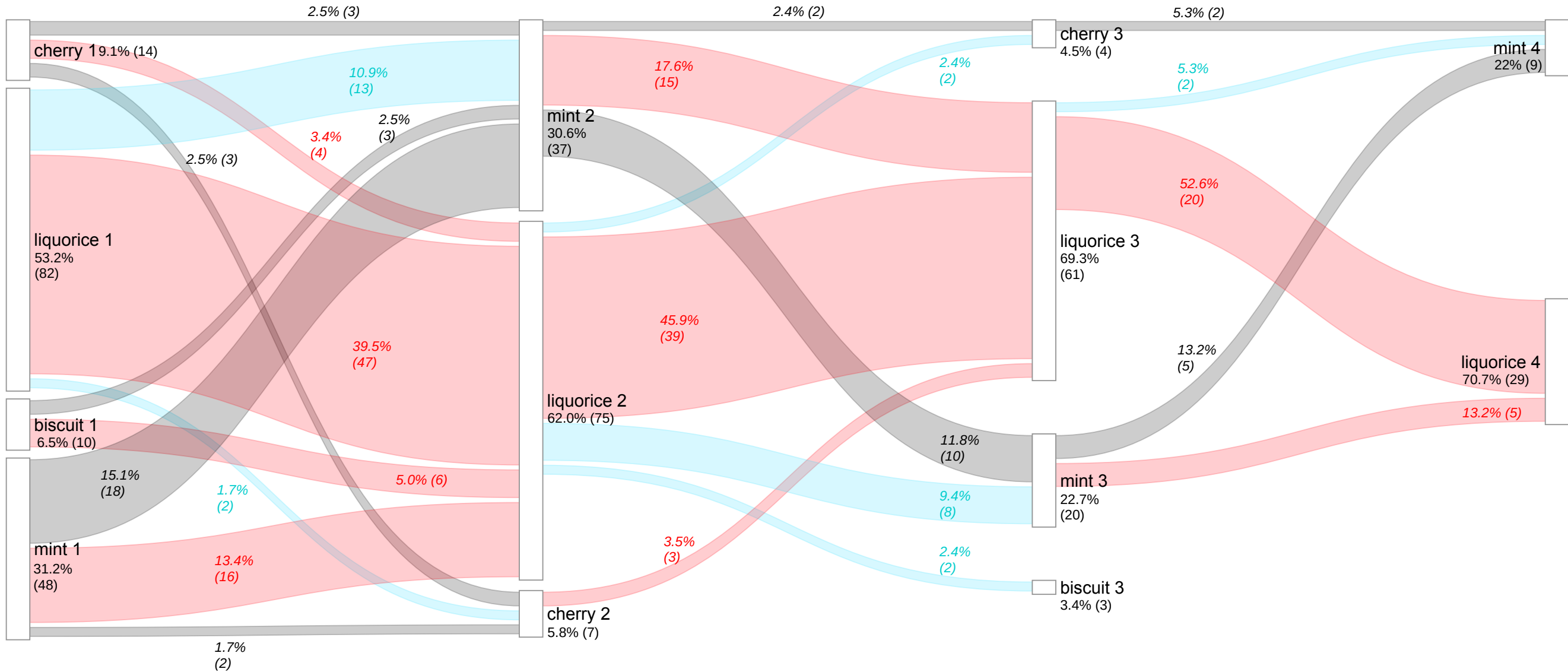
ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 5 (TARGET: BANANA).



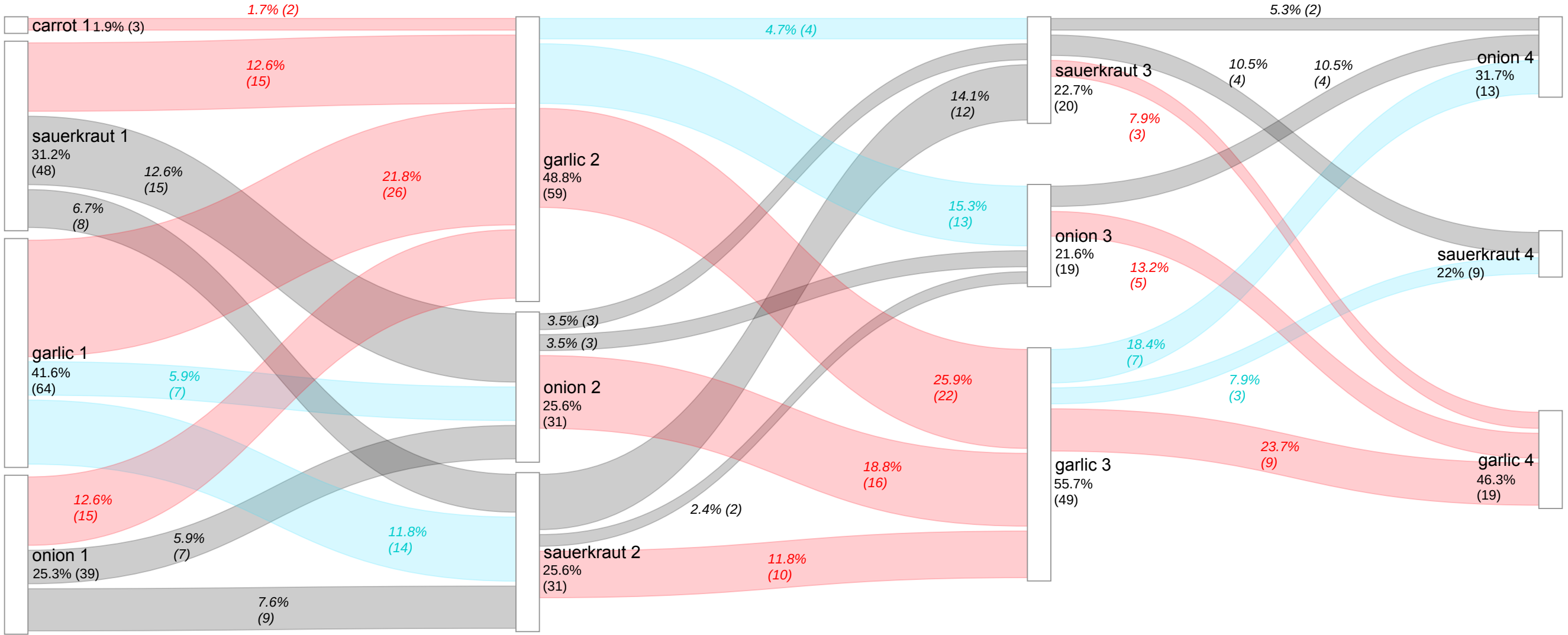
ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 6 (TARGET: LEMON).



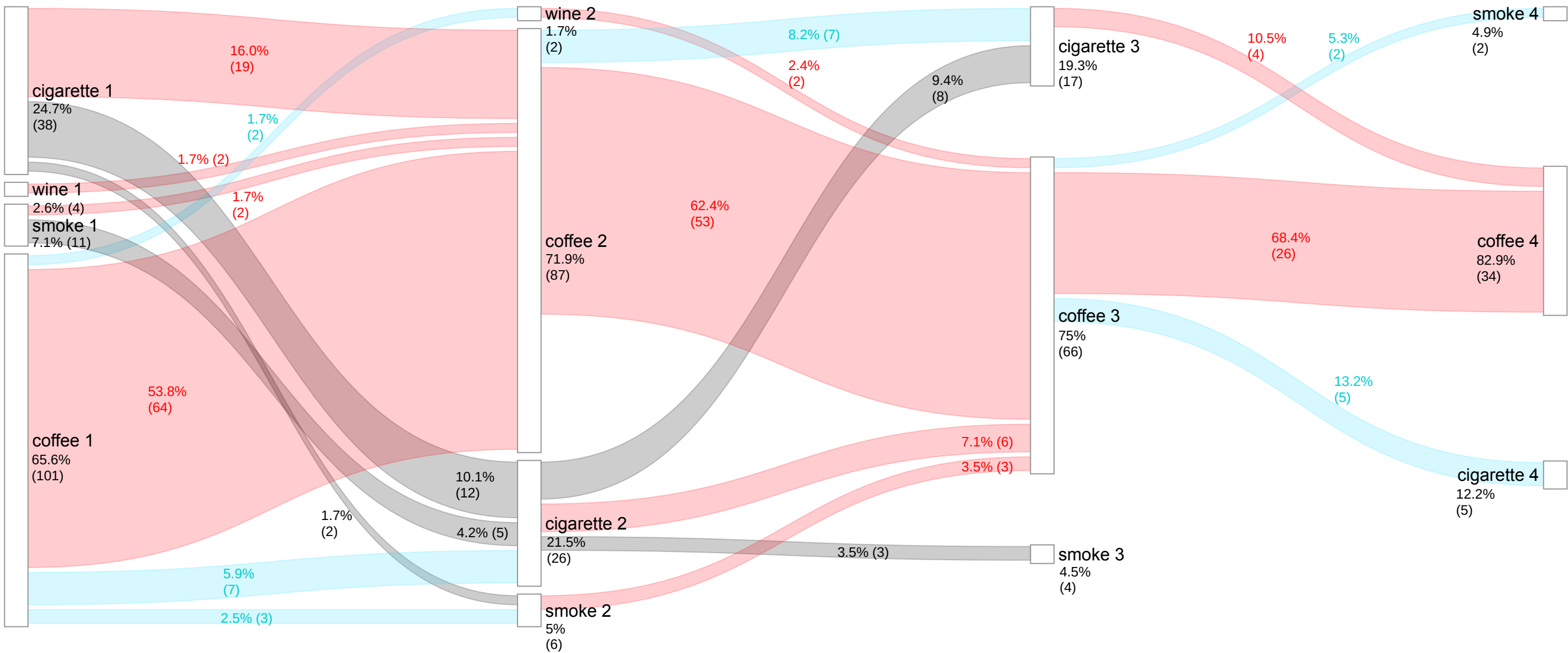
ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 7 (TARGET: LIQUORICE).



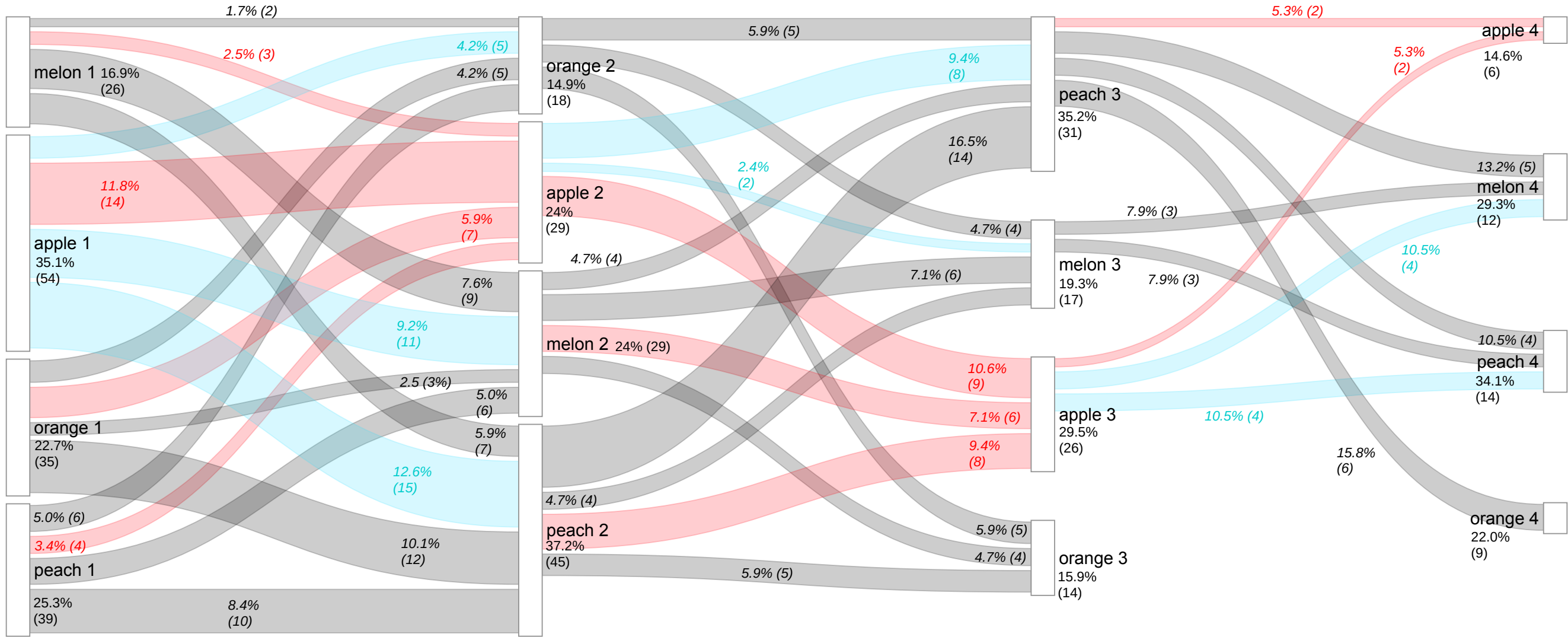
ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 9 (TARGET: GARLIC).



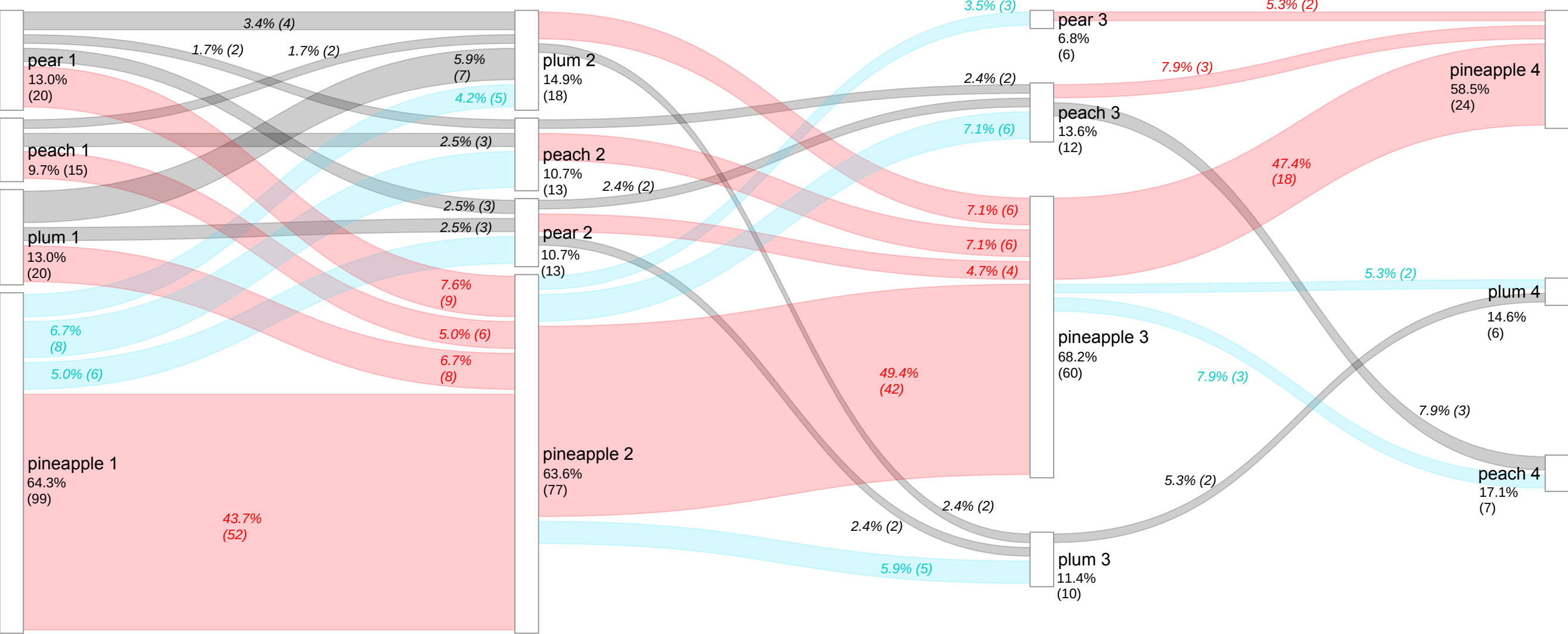
ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 10 (TARGET: COFFEE).



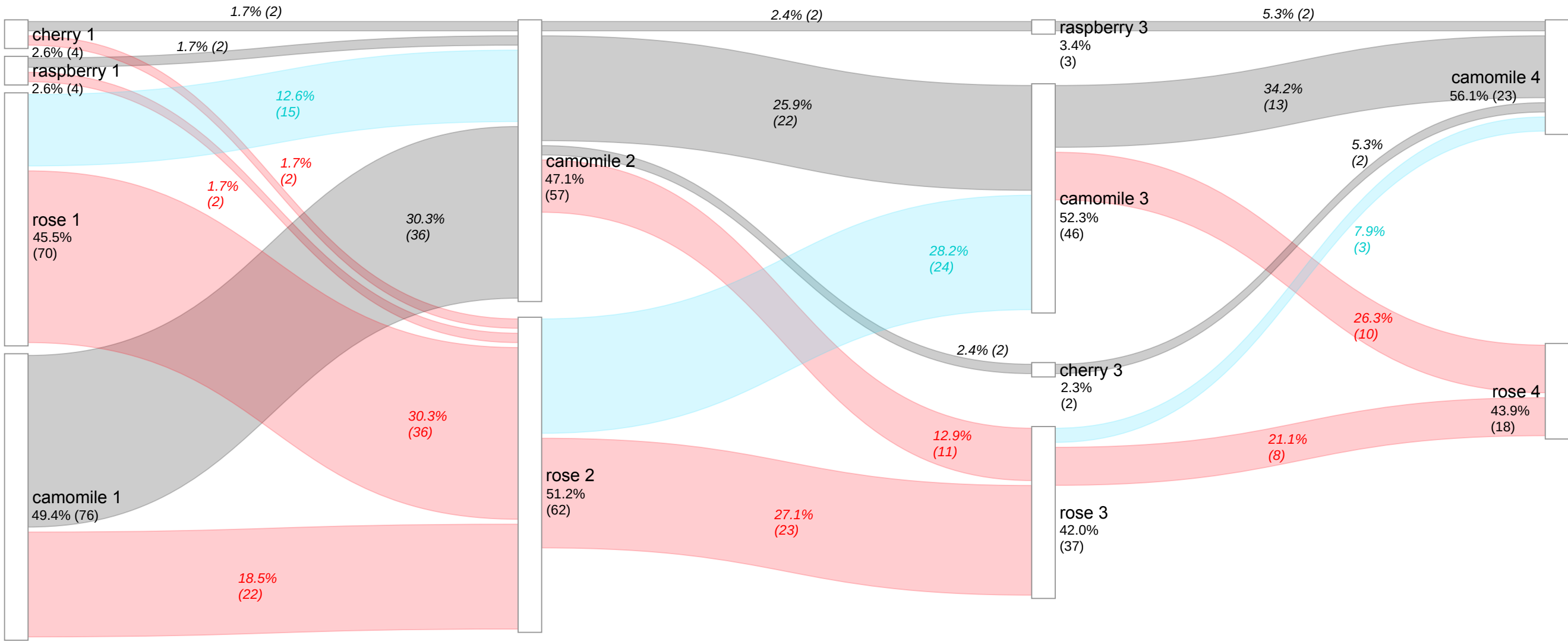
ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 11 (TARGET: APPLE).



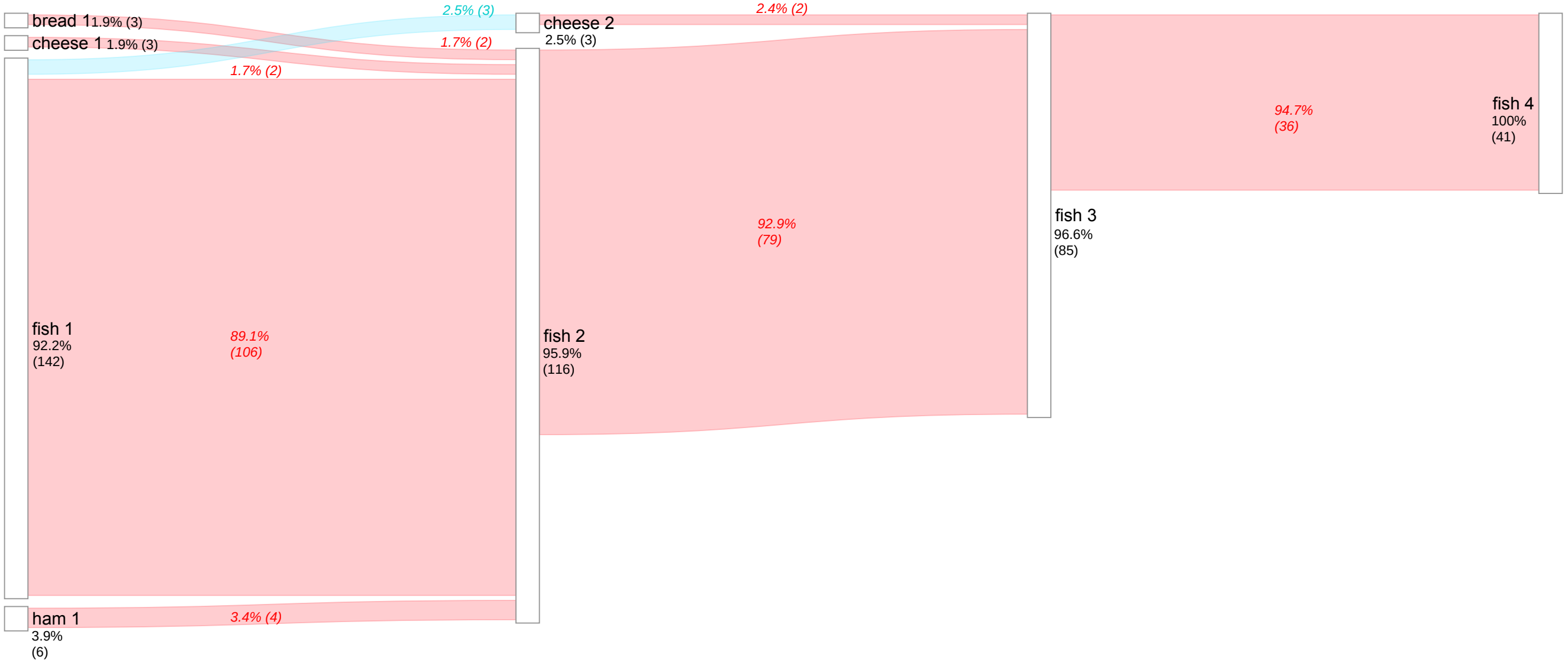
ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 13 (TARGET: PINEAPPLE).



ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 14 (TARGET: ROSE).



ONLINE RESOURCE 3. SANKEY DIAGRAM FOR ITEM 16 (TARGET: FISH).



Online Resource 3b. Relative (absolute) frequencies with which the four labels within each item were selected in a Sniffin' Sticks odor identification task. Veridical (correct) labels are highlighted in bold. Numbers 1 – 4 indicate session, i.e. experience with testing, regardless of wave. Sample size was N = 154, 121, 88, and 41 for session 1, 2, 3, and 4, respectively.

	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Item 1	orange				strawberry				blackberry				pineapple			
	72.1%	81.8%	85.2%	80.5%	1.9%	0.8%	2.3%	0%	11.7%	5%	4.5%	2.4%	14.3%	12.4%	8.0%	17.1%
	(111)	(99)	(75)	(33)	(3)	(1)	(2)	(0)	(18)	(6)	(4)	(1)	(22)	(15)	(7)	(7)
Item 2	smoke				leather				glue				grass			
	32.5%	43.8%	54.5%	58.5%	39.6%	42.1%	34.1%	24.4%	24%	12.4%	9.1%	9.8%	3.9%	1.7%	2.3%	7.3%
	(50)	(53)	(48)	(24)	(61)	(51)	(30)	(10)	(37)	(15)	(8)	(4)	(6)	(2)	(2)	(3)
Item 4	chives				onion				fir				peppermint			
	1.9%	1.7%	4.5%	0%	1.9%	5%	2.3%	0%	1.9%	1.7%	1.1%	0%	94.2%	91.7%	92%	100%
	(3)	(2)	(4)	(0)	(3)	(6)	(2)	(0)	(3)	(1)	(1)	(0)	(145)	(111)	(81)	(41)
Item 5	coconut				walnut				banana				cherry			
	9.7%	8.3%	14.8%	7.3%	1.3%	0.8%	0%	0%	78.6%	86.8%	78.4%	90.2%	10.4%	4.1%	6.8%	2.44%
	(15)	(10)	(13)	(3)	(2)	(1)	(0)	(0)	(121)	(105)	(69)	(37)	(16)	(5)	(6)	(1)
Item 6	peach				lemon				apple				grapefruit			
	6.5%	2.5%	5.7%	0%	66.2%	56.2%	45.5%	53.7%	3.9%	1.7%	0%	0%	23.4%	39.7%	48.9%	46.3%
	(10)	(3)	(5)	(0)	(102)	(68)	(40)	(22)	(6)	(2)	(0)	(0)	(36)	(48)	(43)	(19)
Item 7	liquorice				mint				cherry				biscuit			
	53.2%	62.0%	69.3%	70.7%	31.2%	30.6%	22.7%	22%	9.1%	5.8%	4.5%	4.9%	6.5%	1.7%	3.4%	2.4%
	(82)	(75)	(61)	(29)	(48)	(37)	(20)	(9)	(14)	(7)	(4)	(2)	(10)	(2)	(3)	(1)
Item 9	onion				garlic				sauerkraut				carrot			
	25.3%	25.6%	21.6%	31.7%	41.6%	48.8%	55.7%	46.3%	31.2%	25.6%	22.7%	22%	1.9%	0%	0%	0%
	(39)	(31)	(19)	(13)	(64)	(59)	(49)	(19)	(48)	(31)	(20)	(9)	(3)	(0)	(0)	(0)
Item 10	cigarette				wine				coffee				smoke			
	24.7%	21.5%	19.3%	12.2%	2.6%	1.7%	1.1%	0%	65.6%	71.9%	75%	82.9%	7.1%	5%	4.5%	4.9%
	(38)	(26)	(17)	(5)	(4)	(2)	(1)	(0)	(101)	(87)	(66)	(34)	(11)	(6)	(4)	(2)

	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
Item 11	melon				orange				peach				apple			
	16.9%	24%	19.3%	29.3%	22.7%	14.9%	15.9%	22.0%	25.3%	37.2%	35.2%	34.1%	35.1%	24%	29.5%	14.6%
	(26)	(29)	(17)	(12)	(35)	(18)	(14)	(9)	(39)	(45)	(31)	(14)	(54)	(29)	(26)	(6)
Item 13	pear				peach				plum				pineapple			
	13.0%	10.7%	6.8%	9.8%	9.7%	10.7%	13.6%	17.1%	13.0%	14.9%	11.4%	14.6%	64.3%	63.6%	68.2%	58.5%
	(20)	(13)	(6)	(4)	(15)	(13)	(12)	(7)	(20)	(18)	(10)	(6)	(99)	(77)	(60)	(24)
Item 14	rose				camomile				raspberry				cherry			
	45.5%	51.2%	42.0%	43.9%	49.4%	47.1%	52.3%	56.1%	2.6%	0%	3.4%	0%	2.6%	1.7%	2.3%	0%
	(70)	(62)	(37)	(18)	(76)	(57)	(46)	(23)	(4)	(0)	(3)	(0)	(4)	(2)	(2)	(0)
Item 16	bread				cheese				fish				ham			
	1.9%	0.8%	2.3%	0%	1.9%	2.5%	0%	0%	92.2%	95.9%	96.6%	100%	3.9%	0.8%	1.1%	0%
	(3)	(1)	(2)	(0)	(3)	(3)	(0)	(0)	(142)	(116)	(85)	(41)	(6)	(1)	(1)	(0)

Online Resource 3c. Relative (absolute) frequencies with which the blue/green/red pen within each triplet was selected in a Sniffin' Sticks odor discrimination task. Numbers 1 – 4 indicate session, i.e. experience with testing, regardless of wave. N gives the valid N for the odor discrimination task within the given session.

	Target green	Distractors blue, red	1 (N = 157)			2 (N = 124)			3 (N = 88)			4 (N = 41)		
			blue	green	red	blue	green	red	blue	green	red	blue	green	red
1	Octyl acetate	Cinnamonaldehyde	21.0% (33)	58.6% (92)	20.4% (32)	13.7% (17)	69.4% (86)	16.9% (21)	10.2% (9)	78.4% (69)	11.4% (10)	9.8% (4)	75.6% (31)	14.6% (6)
2	<i>n</i> -Butanol	2-Phenylethanol	21.0% (33)	60.5% (95)	18.5% (29)	12.1% (15)	66.9% (83)	21.0% (26)	11.4% (10)	67.0% (59)	21.6% (19)	17.1% (7)	51.2% (21)	31.7% (13)
3	Isoamylacetate	Anethole	14.0% (22)	63.1% (99)	22.9% (36)	14.5% (18)	72.6% (90)	12.9% (16)	11.4% (10)	68.2% (60)	20.5% (18)	22.0% (9)	70.7% (29)	7.3% (3)
4	Anethole	Eugenol	14.6% (23)	63.1% (99)	22.3% (35)	11.3% (14)	76.6% (95)	12.1% (15)	17.0% (15)	75.0% (66)	8.0% (7)	19.5% (8)	70.7% (29)	9.8% (4)
5	Geraniol	Octyl acetate	29.9% (47)	51.0% (80)	19.1% (30)	20.2% (25)	61.3% (76)	18.5% (23)	25.0% (22)	59.1% (52)	15.9% (14)	26.8% (11)	51.2% (21)	22.0% (9)
6	2-Phenylethanol	Isoamylacetate	20.4% (32)	63.1% (99)	16.6% (26)	14.5% (18)	74.2% (92)	11.3% (14)	9.1% (8)	76.1% (67)	14.8% (13)	12.2% (5)	75.5% (31)	12.2% (5)
7	(+)-Limonene	(+)-Fenchone	16.6% (26)	73.2% (115)	10.2% (16)	8.1% (10)	81.5% (101)	10.5% (13)	18.2% (16)	72.7% (64)	9.1% (8)	12.2% (5)	78.0% (32)	9.8% (4)
8	(-)-Carvone	(+)-Carvone	29.9% (47)	30.6% (48)	39.5% (62)	29.8% (37)	53.2% (66)	16.9% (21)	21.6% (19)	59.1% (52)	19.3% (17)	22.0% (9)	41.5% (17)	36.6% (15)
9	(-)-Limonene	Citronellal	16.6% (26)	61.1% (96)	22.3% (35)	15.3% (19)	71.8% (89)	12.9% (16)	11.4% (10)	73.9% (65)	14.8% (13)	7.3% (3)	68.3% (28)	24.4% (10)

	Target green	Distractors blue, red	1 (N = 157)			2 (N = 124)			3 (N = 88)			4 (N = 41)		
			blue	green	red	blue	green	red	blue	green	red	blue	green	red
10	2-Phenylethanol	(+)-Menthol	21.7% (34)	59.2% (93)	19.1% (30)	22.6% (28)	61.3% (76)	16.1% (20)	17.0% (15)	64.8% (57)	18.2% (16)	24.4% (10)	63.4% (26)	12.2% (5)
11	(+)-Carvone	Geraniol	22.3% (35)	56.1% (88)	21.7% (34)	24.2% (30)	59.7% (74)	16.1% (20)	27.3% (24)	58% (51)	14.8% (13)	51.2% (21)	29.3% (12)	19.5% (8)
12	<i>n</i> -Butanol	(-)-Limonene	12.7% (20)	70.1% (110)	17.2% (27)	5.6% (7)	80.6% (100)	13.7% (17)	10.2% (9)	72.7% (64)	17.0% (15)	9.8% (4)	80.5% (33)	9.8% (4)
13	Citronellal	Linalool	24.2% (38)	41.4% (65)	34.4% (54)	28.2% (35)	42.7% (53)	29.0% (36)	29.5% (26)	43.2% (38)	27.3% (24)	34.1% (14)	36.6% (15)	29.3% (12)
14	Pyridine	(-)-Limonene	29.3% (46)	47.8% (75)	22.9% (36)	14.5% (18)	66.9% (83)	18.5% (23)	11.4% (10)	78.4% (69)	10.2% (9)	31.7% (13)	61.0% (25)	7.3% (3)
15	Eugenol	Cinnamonaldehyde	23.6% (37)	54.1% (85)	22.3% (35)	16.9% (21)	61.3% (76)	21.8% (27)	11.4% (10)	70.5% (62)	18.2% (16)	9.8% (4)	70.7% (29)	19.5% (8)
16	Eucalyptol	α -Ionone	23.6% (37)	53.5% (84)	22.9% (36)	15.3% (19)	66.1% (82)	18.5% (23)	12.5% (11)	69.3% (61)	18.2% (16)	14.6% (6)	65.9% (27)	19.5% (8)