

Supplementary Information

Carbon Footprint of Tree Nuts Based Consumer Products

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Table S1. Relation product category vs. transformation.

Product	Bag/Jar Net Weight (g)	Cleaning and Calibration	Shell Removal	Peeling	Soft Skeen Removal	Grinding	Deep Frying	Fine Grinding	Toasting	Hazelnut Spread Making	Cutting	Chocolate Coating	Tamari Coating	Raw Almond Paste Making	Toasted Almond Paste Making	Hazelnut Paste Making
Hazelnut in bag	100–125	×	×		×	×		×	×							
Peanut in bag	125	×	×			×	×		×							
Hazelnut paste US market	454	×	×			×			×							
Peanut paste US market	454	×	×			×			×		×					×
Hazelnut paste EU market	200–400	×	×			×			×		×					×
Peanut paste EU market	200–400	×	×			×			×		×					
Pistacho in bag	100–125	×	×	×					×							
Almond in bag	100–125	×	×	×	×	×		×	×				×			
Hazelnut spread cream in jar US	454	×	×							×						
Hazelnut spread cream in jar EU	200–400	×	×							×						
Almond paste US market	454	×	×	×		×			×					×	×	
Almond paste EU market	180–400	×	×	×		×			×					×	×	
Chocolate covered hazelnut	100	×	×	×	×							×				
Chocolate covered almond	100	×	×	×	×							×				

Table S2. Products sold by country of destination.

Products	Product Statistics			Country of Destination						
	Net Weight Per Unit (g)	Sold Units (no.)	Sold Total Net Weight (kg)	ITA (kg)	FRA (kg)	UK (kg)	CH (kg)	DE (kg)	SE (kg)	USA (kg)
pistachio paste	80	9464	757	29	702	26	-	-	-	-
chocolate covered almonds	100	60	6	-	-	6	-	-	-	-
chocolate covered almonds	100	264	26	-	-	26	-	-	-	-
chocolate covered hazelnuts	100	96	10	-	-	10	-	-	-	-
peeled almonds	100	798	80	32	-	48	-	-	-	-
peeled almonds	100	180	18	18	-	-	-	-	-	-
peeled almonds	100	728	73	-	-	73	-	-	-	-
raw almonds	100	1176	118	29	-	88	-	-	-	-
raw almonds	100	180	18	18	-	-	-	-	-	-
raw almonds	100	574	57	-	-	57	-	-	-	-
chocolate covered almonds	100	300	30	10	-	20	-	-	-	-
chocolate covered almonds	100	576	58	58	-	-	-	-	-	-
chocolate covered almonds	100	74	7	7	-	-	0.2	-	-	-
chocolate covered almonds	100	75	8	8	-	-	-	-	-	-
chocolate covered almonds	100	2280	228	11	202	16	-	-	-	-
chocolate covered almonds	100	2112	211	211	-	-	-	-	-	-
chocolate covered almonds	100	2196	220	-	220	-	-	-	-	-
hazelnuts	100	434	43	39	-	4	-	-	-	-
hazelnuts	100	108	11	11	-	-	-	-	-	-
hazelnuts	100	672	67	-	-	67	-	-	-	-
chocolate covered hazelnuts	100	38	4	4	-	-	0.2	-	-	-
chocolate covered hazelnuts	100	513	51	42	-	10	-	-	-	-
chocolate covered hazelnuts	100	64	6	6	-	-	0.2	-	-	-
pistachios	100	840	84	84	-	-	-	-	-	-
salted peanuts	125	182,688	22,836	-	-	-	-	22,836	-	-
almond flour	125	183,528	22,941	-	-	-	-	22,941	-	-
peeled almonds	125	10,080	1260	1260	-	-	-	-	-	-
peeled almonds	125	229,320	28,665	28,665	-	-	-	-	-	-
peeled almonds	125	13,728	1716	1716	-	-	-	-	-	-

Table S2. *Cont.*

Products	Product Statistics			Country of Destination						
	Net Weight Per Unit (g)	Sold Units (no.)	Sold Total Net Weight (kg)	ITA (kg)	FRA (kg)	UK (kg)	CH (kg)	DE (kg)	SE (kg)	USA (kg)
almonds	125	8640	1080	1080	-	-	-	-	-	-
almonds	125	12,792	1599	1599	-	-	-	-	-	-
grinded hazelnuts	125	2880	360	360	-	-	-	-	-	-
hazelnuts	125	2880	360	360	-	-	-	-	-	-
hazelnuts	125	4992	624	624	-	-	-	-	-	-
toasted hazelnuts	125	2880	360	360	-	-	-	-	-	-
toasted hazelnuts	125	3744	468	468	-	-	-	-	-	-
hazelnuts flour	125	118,176	14,772	-	-	-	-	14,772	-	-
raw peeled almond spread	180	660	119	-	-	119	-	-	-	-
hazelnut paste	180	372	67	-	-	67	-	-	-	-
hazelnut paste	180	1040	187	99	-	86	-	-	-	2
pistachio paste	180	1273	229	40	-	-	-	-	189	-
almond paste	180	1399	252	47	-	203	-	-	-	2
hazelnut spread	200	336	67	-	-	67	-	-	-	-
hazelnut paste	200	1755	351	255	-	96	0.4	-	-	-
almond paste	300	24,301	7290	0.3	7290	-	-	-	-	-
almond paste	300	840	252	-	252	-	-	-	-	-
almond paste	300	16,052	4816	1	4815	-	-	-	-	-
almond paste	300	88,238	26,471	1	26,471	-	-	-	-	-
hazelnut paste	300	15,152	4546	1	4545	-	-	-	-	-
hazelnut spread	400	18,210	7284	602	6682	-	-	-	-	-
hazelnut paste	400	1392	557	-	557	-	-	-	-	-
almond paste	454	4356	1978	-	-	-	-	-	-	1978
hazelnut paste	454	1452	659	-	-	-	-	-	-	659