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Updating of the Irish Food Composition Database for vitamin K1 and vitamin K2

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There are limited data available on vitamin K intakes in national dietary surveys across Europe partly due to the lack of food composition data for vitamin K. The Irish Food Composition Database (IFCD) (2012) has been developed over the last 20 years informed by foods consumed on the Irish national dietary surveys (www.iuna.net). The IFCD (2012) has been updated for each survey to include brand level data and recipes of composite dishes. Each food and beverage consumed throughout the surveys was assigned a food code (*n* 3443), based on the food descriptor and the nutritional composition of the food. The aim of this study was to update the IFCD (2012) with composition values for vitamin K_1 and vitamin K_2 (menaquinone-4 (MK-4) and menaquinone-5 to 10 (MK-5–10)).

The vitamin K_1 and vitamin K_2 content of foods was determined using published analytical values from The UK Composition of Foods Integrated Dataset[(1)] (COFID), the United Stated Department of Agriculture (USDA) National Nutrient Database[(2)], published papers, recipe calculation and manufacturers information. The table below outlines the proportion of vitamin K composition values assigned using each data source.

Source of compostion data	Vitamin K1	MK-4%	MK-5-10
Published analytical values	**52.5**	**13.6**	**14.6**
UKCOFID nutrient databank[1]	30.7	–	–
USDA nutrient databank[2]	16.7	–	–
Published Papers	5.1	13.6	14.6
Recipes	**30.4**	**27.3**	**27.1**
Recipe calculated from ingredients list	25.2	23.2	23.1
Similar to calculated recipes	3.7	4.0	4.0
Retail Product calculated from ingredients list	1.5	–	–
Manufacturers information	**10.5**	–	–
Nutritional supplements	9.9	–	–
Infant formula	0.6	–	–
Foods that did not contain any vitamin K (as signed value of 0µ g)	4.3	57.2	56.5
Other	2.3	1.8	1.7

Published analytical values for vitamin K_1 provided composition data for 53% of food codes in the IFCD (2012). Each recipe in the IFCD (2012) was individually calculated for vitamin K content providing composition values for 29% of food codes for vitamin K_1. The vitamin K_1 composition values for 2% of food codes were calculated from the ingredients listed on packaging. Foods that did not contain any vitamin K_1 (4%) were assigned a composition value of 0µg/100 g. Manufacturers' information provided vitamin K_1 composition data for 11% of food codes. For MK-4 and MK-5–10, published analytical values provided composition data for 14 and 15% of food codes, respectively. Recipe calculation was used to estimate vitamin K_2 composition values for 27% of food codes. Fifty-seven percent of food codes did not contain vitamin K_2 and were assigned a composition value of 0µg/100 g.

These updates to the IFCD (2012) will allow for estimation of vitamin K_1 and vitamin K_2 intakes and sources in the Irish population and will add to the limited vitamin K composition data currently available in Ireland.

1. Public Health England (2015) PHE. London.
2. USDA National Nutrient Database for Standard References 28 (2015) https://ndb.nal.usda.gov/ndb/

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