

13. Intake of Home-Produced Foods

13.1 Introduction

Ingestion of home-produced foods can be a pathway for exposure to environmental contaminants. Home-produced foods can become contaminated in a variety of ways. Ambient pollutants in the air may be deposited on plants, adsorbed onto or absorbed by the plants, or dissolved in rainfall or irrigation waters that contact the plants. Pollutants may also be adsorbed onto plant roots from contaminated soil and water. Finally, the addition of pesticides, soil additives, and fertilizers to crops or gardens may result in contamination of food products. Meat and dairy products can become contaminated if animals consume contaminated soil, water, or feed crops. Farmers, as well as rural and urban residents who consume home-produced foods, may be potentially exposed if these foods become contaminated. Exposure via the consumption of home-produced foods may be a significant route of exposure for these populations (U.S. EPA, 1989, 1996). Assessing exposures to individuals who consume home-produced foods requires knowledge of intake rates of such foods. Chapter 13 provides recommended ingestion rates of home-produced food. The data presented may be used to assess exposure to contaminants in foods grown, raised, or caught at a specific site. These data are highlighted here.

13.2 Recommended Exposure Factors

Data from the 1987-1988 Nationwide Food Consumption Survey (NFCS) were used to generate intake rates for home-produced foods (USDA, 1987-1988). The recommended values for mean and upper percentile (i.e., 95th percentile) intake rates for the various food groups for consumers only are presented in Table 13-1. Adjustments may be made to account for preparation losses (see Section 13.3.2 of the Handbook). Table 13-1 also provides mean and 95th percentile per capita intake rates for populations that garden, farm, or raise animals based on an analysis by Phillips and Moya (2011). The per capita data have been adjusted to account for preparation losses. Overall confidence in the recommended values for intake of home-produced foods is low-medium for means and short-term distributions and low for long-term distributions.



For more information about the key studies used to derive the recommended values for intake of home-produced foods, refer to **Chapter 13 of the *Exposure Factors Handbook*** at <http://www.epa.gov/ncea/efh/pdfs/efh-chapter13.pdf>. Detailed information on the key studies for intake of home-produced food is included in Section 13.3, and detailed information on the relevant study is provided in Section 13.4. For more information on consumption of specific home-produced foods refer to Chapter 13 of the *Exposure Factors Handbook*.

Table 13-1. Summary of Recommended Values for Intake of Home-Produced Foods^a

Age Group	Consumers Only, Unadjusted ^{b,c} (g/kg-day)		Age Group	Per Capita for Populations that Garden (or Farm), Adjusted ^{d,e} (g/kg-day)	
	Mean	95 th Percentile		Mean	95 th Percentile
Home-Produced Fruits^f					
1 to 2 years	8.7	60.6	1 to <2 years	1.0 (1.4)	4.8 (9.1)
3 to 5 years	4.1	8.9	2 to <3 years	1.0 (1.4)	4.8 (9.1)
6 to 11 years	3.6	15.8	3 to <6 years	0.78 (1.0)	3.6 (6.8)
12 to 19 years	1.9	8.3	6 to <11 years	0.40 (0.52)	1.9 (3.5)
20 to 39 years	2.0	6.8	11 to <16 years	0.13 (0.17)	0.62 (1.2)
40 to 69 years	2.7	13.0	16 to <21 years	0.13 (0.17)	0.62 (1.2)
≥70 years	2.3	8.7	21 to <50 years	0.15 (0.20)	0.70 (1.3)
			50+ years	0.24 (0.31)	1.1 (2.1)
Home-Produced Vegetables^g					
1 to 2 years	5.2	19.6	1 to <2 years	1.3 (2.7)	7.1 (14)
3 to 5 years	2.5	7.7	2 to <3 years	1.3 (2.7)	7.1 (14)
6 to 11 years	2.0	6.2	3 to <6 years	1.1 (2.3)	6.1 (12)
12 to 19 years	1.5	6.0	6 to <11 years	0.80 (1.6)	4.2 (8.1)
20 to 39 years	1.5	4.9	11 to <16 years	0.56 (1.1)	3.0 (5.7)
40 to 69 years	2.1	6.9	16 to <21 years	0.56 (1.1)	3.0 (5.7)
≥70 years	2.5	8.2	21 to <50 years	0.56 (1.1)	3.0 (5.7)
			50+ years	0.60 (1.2)	3.2 (6.1)
Age Group	Consumers Only, Unadjusted ^{b,c} (g/kg-day)		Age Group	Per Capita for Populations that Farm (or Raise Animals) ^{d,e} (g/kg-day)	
	Mean	95 th Percentile		Mean	95 th Percentile
Home-Produced Meats^h					
1 to 2 years	3.7	10.0	1 to <2 years	1.4 (1.4)	5.8 (6.0)
3 to 5 years	3.6	9.1	2 to <3 years	1.4 (1.4)	5.8 (6.0)
6 to 11 years	3.7	14.0	3 to <6 years	1.4 (1.4)	5.8 (6.0)
12 to 19 years	1.7	4.3	6 to <11 years	1.0 (1.0)	4.1 (4.2)
20 to 39 years	1.8	6.2	11 to <16 years	0.71 (0.73)	3.0 (3.1)
40 to 69 years	1.7	5.2	16 to <21 years	0.71 (0.73)	3.0 (3.1)
≥70 years	1.4	3.5	21 to <50 years	0.65 (0.66)	2.7 (2.8)
			50+ years	0.51 (0.52)	2.1 (2.2)
Home-Produced Dairy					
1 to 2 years	- ⁱ	-	1 to <2 years	11 (13)	76 (92)
3 to 5 years	-	-	2 to <3 years	11 (13)	76 (92)
6 to 11 years	-	-	3 to <6 years	6.7 (8.3)	48 (58)
12 to 19 years	-	-	6 to <11 years	3.9 (4.8)	28 (34)
20 to 39 years	-	-	11 to <16 years	1.6 (2.0)	12 (14)
40 to 69 years	-	-	16 to <21 years	1.6 (2.0)	12 (14)
≥70 years	-	-	21 to <50 years	0.95 (1.2)	6.9 (8.3)
			50+ years	0.92 (1.1)	6.7 (8.0)

Table 13-1. Summary of Recommended Values for Intake of Home-Produced Foods^a (continued)

Age Group	Consumers Only, Unadjusted ^{b,c} (g/kg-day)		Age Group	Per Capita for Populations that Farm (or Raise Animals) ^{d,e} (g/kg-day)	
	Mean	95 th Percentile		Mean	95 th Percentile
Home-Caught Fish^f					
1 to 2 years	-	-	-	-	-
3 to 5 years	-	-	-	-	-
6 to 11 years	2.8	7.1	-	-	-
12 to 19 years	1.5	4.7	-	-	-
20 to 39 years	1.9	4.5	-	-	-
40 to 69 years	1.8	4.4	-	-	-
≥70 years	1.2	3.7	-	-	-

^a Analysis was conducted prior to the Agency's issuance of *Guidance on Selecting Age Groups for Monitoring and Assessing Childhood Exposures to Environmental Contaminants* (U.S. EPA, 2005).

^b Not adjusted to account for preparation or post-cooking losses.

^c Source: U.S. EPA Analysis of 1987–1988 NFCS.

^d Adjusted for preparation and post-cooking losses.

^e Source: Phillips and Moya, 2011.

^f For consumers only, multiple percentiles are available in Table 13-5 in the *Exposure Factors Handbook*.

^g For consumers only, multiple percentiles are available in Table 13-10 in the *Exposure Factors Handbook*.

^h For consumers only, multiple percentiles are available in Table 13-15 in the *Exposure Factors Handbook*.

ⁱ Data not presented for age groups/food groups where less than 20 observations were available or data not available for that age or food group.

^j For consumers only, multiple percentiles are available in Table 13-20 in the *Exposure Factors Handbook*.

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