

TABLE 1.—DIETARY EXPOSURE AND RISK TO LACTOFEN FROM FOOD SOURCES

Population	Acute Endpoint		Chronic Endpoint		Cancer Endpoint ²	
	Exposure mg/kg/day	%aPAD	Exposure mg/kg/day	%aPAD	Exposure mg/kg/day	Risk
U.S. population	NA ¹	NA	1 x 10 ⁻⁶	<0.1	1 x 10 ⁻⁶	8 x 10 ⁻⁸
Females 13 to 50	2 x 10 ⁻⁶	<0.1	<1 x 10 ⁻⁶	<0.1	NA	NA
Children 1 to 6	NA ¹	NA	2 x 10 ⁻⁶	<0.1	NA	NA

¹Acute endpoint applies only to females of childbearing age.

²Cancer risk is generally reported for the U.S. population.

ii. *Drinking water.* Environmental fate properties indicate that lactofen is not very persistent or mobile. Hydrolysis half-lives are 10.7, 4.6, and <1.0 days at pH 5, 7, and 9 at 40° C, respectively. This temperature most likely exceeds temperatures that lactofen would be expected to be exposed to under normal conditions, thus the hydrolysis rates are probably slower. Aerobic soil metabolism half-lives range from 1 to 3 days. Lactofen has a low probability to contaminate drinking water because it has a short half-life (3 days or less) and high binding potential ($K_{oc}>1,000$). Limited data suggest that lactofen conversion to acifluorfen in water is approximately 52%. The HED MARC has concluded that the residues of concern in drinking water are acifluorfen and amino acifluorfen. Insufficient information is available to estimate the amino acifluorfen concentration in water, but it is likely to be less than that of acifluorfen. Laboratory studies have shown that acifluorfen reaches its maximum concentration of 53.3% of applied lactofen at 7 days following application and it is most likely to form under the soil surface. Thus, the formed

acifluorfen is not subject to drift, erosion, or runoff forces that contribute to surface water contamination. Surface water, however, could be contaminated with acifluorfen from lactofen applications via spray drift. The registrant also has conducted two prospective ground water studies which showed that neither lactofen nor acifluorfen from lactofen applications contaminate ground water. Therefore, in the following discussion, the potential exposure to lactofen from drinking water will address only potential surface water contamination with lactofen and acifluorfen.

The Tier II estimated environmental concentration (EEC) assessment in surface water uses a single site, or multiple single sites, which represents a high-end exposure scenario from pesticide use on a particular crop or non-crop use site. The EEC's for lactofen were generated for the standard Mississippi cotton scenario. The Agency has implemented the concept of index reservoirs (IR) and the PCT area to better estimate potential residue level in drinking water sources. The scenarios used with EPA pesticide root zone model (PRZM) and exposure analysis modeling systems (EXAMS) to estimate

lactofen in the "standard pond" were rerun with the IR for the cotton and soybean scenarios. The Agency has estimated that the PCT area for the Mississippi cotton scenario is 0.20 (20%).

The Office of Pesticide Programs (OPP) has calculated drinking water levels of comparison (DWLOCs) for acute and chronic exposure to lactofen and acifluorfen from applications of lactofen in surface water. To calculate the DWLOC for acute exposure, the acute dietary food exposure from the DEEMTM analysis was subtracted from the aPAD. To calculate the DWLOC for chronic (non-cancer) exposure, the chronic dietary food exposure from the DEEMTM analysis was subtracted from the cPAD to obtain the acceptable chronic non-cancer exposure to lactofen and acifluorfen in drinking water. A DWLOC cancer was calculated in a similar manner, assuming a negligible risk of 1 x 10⁻⁶. Assumptions used in calculating the DWLOCs include 70 kg bwt for the U.S. population, 60 kg bwt for adult females, 10 kg bwt for children, 2 liters of water consumption per day for adults, and 1 liter consumption for children.

TABLE 2.—DIETARY EXPOSURE AND RISK TO LACTOFEN FROM DRINKING WATER

Population	Acute Endpoint		Chronic Endpoint		Cancer Endpoint ²	
	Exposure µg/L	DWLOC µg/L	Exposure µg/L	DWLOC µg/L	Exposure µg/L	DWLOC µg/L
U.S. population	NA ¹	NA	0.022	280	0.012	0.3
Females 13 to 50	0.62	5,100	0.022	240	-	-
Children 1 to 6	NA ¹	NA	0.022	80	-	-

¹ Acute endpoint applies only to females of childbearing age.

² Cancer risk is generally reported for the U.S. population.

TABLE 3.—DIETARY EXPOSURE AND RISK TO ACIFLUORFEN¹ FROM DRINKING WATER

Population	Acute Endpoint		Chronic Endpoint		Cancer Endpoint ³	
	Exposure µg/L	DWLOC µg/L	Exposure µg/L	DWLOC µg/L	Exposure µg/L	DWLOC µg/L
U.S. population	NA ²	NA	0.99	140	0.34	0.7
Females 13 to 50	4.9	600	0.99	120	-	-