

# Dietary Exposure Evaluation Model – Food Commodity Intake Database

Last Revision Date: 10/08/2009

## General Information

**Model Abbreviated Name:** DEEM-FDIC

**Model Extended Name:** Dietary Exposure Evaluation Model – Food Commodity Intake Database

### Model Overview/Abstract:

DEEM is a dietary exposure analysis system for performing chronic and acute exposure assessments. DEEM employs Monte Carlo Analysis (MCA) techniques in order to provide probabilistic assessments of dietary pesticide exposures when residue data for targeted foods are available as distributions.

**Keywords:** Residue, consumption, diet, commodity, chemical, Monte Carlo, probabilistic, stochastic, random, exposure, risk, MOE, RfD, NOAEL, Sub-population

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**Model Homepage:** <http://www.durango-software.com/index.html>

**Plans for further model development:** Replace current consumption database, 1994-1996, 1998 CSFII, with newer consumption database, 2001 – 2006 What We Eat in America

## User Information

### Technical Requirements

#### Computer Hardware

486 processor with at least 256 KB ram

#### Compatible Operating Systems

Windows XP

### Download Information

[http://www.exponent.com/files/Uploads/Documents/Deem\\_%20Calendex\\_Agreement\\_2009.pdf](http://www.exponent.com/files/Uploads/Documents/Deem_%20Calendex_Agreement_2009.pdf)

### Using the Model

### **Basic Model Inputs**

Residue in parts per million to calculate exposure, NOAEL or Reference dose to calculate risk

### **Basic Model Outputs**

Exposure in mg/kg/day or mg/day. Risk in percent of the Reference Dose and Margin of Exposure when using a NOAEL.

### **User Support**

#### **Other User Documents**

Yes

#### **Availability of User Support**

Yes, HED has a users group that meets regularly.

#### **User Qualifications**

Some background in residue chemistry, an understanding of the basic commodity relationship as ingredient in recipes, and an understanding of toxicology with regards to risk assessment.

### **Model Science**

#### **Problem Identification**

Food Quality Protection Act.

#### **Summary of Model Structure and Methods**

[http://www.epa.gov/scipoly/sap/meetings/2000/february/final\\_sap\\_document\\_feb\\_1\\_2000.pdf](http://www.epa.gov/scipoly/sap/meetings/2000/february/final_sap_document_feb_1_2000.pdf)

#### **Model Evaluation**

<http://www.epa.gov/scipoly/sap/meetings/2000/february/partialfinalreport06292000.pdf>

#### **Key Limitations to Model Scope**

No limitations really yet, except that some chemicals have shorter than one day for recovery for some endpoints.

#### **Case Studies**

Many of the chemicals found in this list have had their dietary exposure estimated using DEEM.

<http://www.epa.gov/pesticides/reregistration/>