US Environmental Protection Agency
Office of Pesticide Programs

APPENDIX F. Probit Analysis Input and Outputs

October 18, 2007

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IEC V1.1 - Individual Effect Chance to Terrestrial Phase of CRLF Model Version 1.1

Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	1386	
Enter desired threshold	0.1	
Enter slope of dose-response	2.92	
z score result	-2.92	z is the standard normal deviate
Probability associated with z	1.75E-03	Uses Excel NORMDIST function to estimate P with lower reporting limit of 1.0 E-16
Chance of individual effect, **~1 in . . .**	5.71E+02	Calculated as 1/P

This is based on the formula $\log LC_k = \log LC_{50} + (z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Excel cannot calculate probabilities for extremes in z scores beyond -8.2
Probability is defaulted to 10^{-16}, which is the limit of Excel reporting.

Ed Odenkirchen, June 22, 2004 EFED/OPP/USEPA

IEC V1.1 - Individual Effect Chance to Aquatic phase of CRLF Model Version 1.1

Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	0.72	
Enter desired threshold	0.05	
Enter slope of dose-response	4.5	**Is this a default slope estimate? Yes or No**
z score result	-5.85463498	z is the standard normal deviate
Probability associated with z	2.39E-09	Uses Excel NORMDIST function to estimate P with lower reporting limit of 1.0 E-16
Chance of individual effect, **~1 in . . .**	4.18E+08	Calculated as 1/P

This is based on the formula $\log LC_k = \log LC_{50} + (z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Excel cannot calculate probabilities for extremes in z scores beyond -8.2
Probability is defaulted to 10^{-16}, which is the limit of Excel reporting.

Ed Odenkirchen, June 22, 2004 EFED/OPP/USEPA

IEC V1.1 - 15 gram Mammal prey Individual Effect Chance Model Version 1.1

Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	1386	
Enter desired threshold	37	
Enter slope of dose-response	2.92	
z score result	4.57914903	z is the standard normal deviate
Probability associated with z	1.00E+00	Uses Excel NORMDIST function to estimate P with lower reporting limit of 1.0 E-16
Chance of individual effect, **~1 in . . .**	1.00E+00	Calculated as 1/P

This is based on the formula $\log LC_k = \log LC_{50} + (z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Excel cannot calculate probabilities for extremes in z scores beyond -8.2
Probability is defaulted to 10^{-16}, which is the limit of Excel reporting.

Ed Odenkirchen, June 22, 2004 EFED/OPP/USEPA

IEC V1.1 - 35 gram Mammal prey Individual Effect Chance Model Version 1.1

Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	1386	
Enter desired threshold	19.83	
Enter slope of dose-response	2.92	
z score result	3.78818233	z is the standard normal deviate
Probability associated with z	1.00E+00	Uses Excel NORMDIST function to estimate P with lower reporting limit of 1.0 E-16
Chance of individual effect, **~1 in . . .**	1.00E+00	Calculated as 1/P

This is based on the formula $\log LC_k = \log LC_{50} + (z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Excel cannot calculate probabilities for extremes in z scores beyond -8.2
Probability is defaulted to 10^{-16}, which is the limit of Excel reporting.

Ed Odenkirchen, June 22, 2004 EFED/OPP/USEPA

IEC V1.1 - Individual Effect Chance to CRLF Fish Prey Model Version 1.1

Predictor of chance of individual effect using probit dose-response curve slope and median lethal estimate

Enter LC_{50} or LD_{50}	0.72	
Enter desired threshold	0.32	
Enter slope of dose-response	4.5	**Is this a default slope estimate? Yes or No**
z score result	-2.2268251	z is the standard normal deviate
Probability associated with z	1.30E-02	Uses Excel NORMDIST function to estimate P with lower reporting limit of 1.0 E-16
Chance of individual effect, **~1 in . . .**	7.70E+01	Calculated as 1/P

This is based on the formula $\log LC_k = \log LC_{50} + (z/b)$

where: z is the standard normal deviate and b equals slope

Works for dose-response models based on a probit assumption (i.e. log normal distribution of individual sensitivity)

Note: Excel cannot calculate probabilities for extremes in z scores beyond -8.2
Probability is defaulted to 10^{-16}, which is the limit of Excel reporting.

Ed Odenkirchen, June 22, 2004 EFED/OPP/USEPA