

HOW TO SET ADI & ARfD?

ADI-Acceptable Daily Intake
(For lifetime exposure without adverse health effect)

Various toxicity studies

The lowest NOAEL
in the most sensitive species
(mg/kg/day)

X safety factor
(1/100)

ADI mg/kg bw (range)

(Example)
2-year chronic/
carcinogenicity
study in rats
↓
1.35 mg/kg bw/ day
↓
0-0.013 mg/kg bw

Uncertainties
Human is hypothesized
as the most sensitive
species



ARfD - Acute Reference Dose
(For short time exposure)

Various toxicity studies

The lowest NOAEL after single dose
exposure (mg/kg bw/day)

X safety factor
(1/100)

ARfD mg/kg bw (value)

Stepwise process for ARfD setting

1. Evaluate the total database for the pesticide
2. Consider the principle for ARfD setting

Cut of f value Mortality Critical period

Clear explanation

3. Select the end-points for single exposure
4. Select the most relevant study
5. Identify the NOAELs for these end-points
6. Select the most relevant end-point providing the lowest NOAEL

(Example)
Acute neurotoxicity
study in rats (single
dose exposure)
↓
20 mg/kg bw/day
↓
0.2 mg/kg bw
ARFD ≥ ADI

Uncertainties
Human is hypothesized
as the most sensitive
species

