

FREDERICA Database Update: Russian data incorporation



EMRAS-II. Effects group (WG-6).
Vienna, 8 September 2010

EMRAS-II (WG6): FREDERICA Update

We went through 3 steps:

➤ Literature survey (March 2009)

- ✓ New data 2006-2009 > 650 (255 Russian)
- ✓ Japanese literature
- ✓ Russian literature
- ✓ Data “missing” (UNSCEAR 1982; Turner 1975; EA; Tatiana)

➤ Add new data to FREDERICA database (June 2009)

141 Refs

➤ QA/QC and score new entries (Jan 2010)

Belgium (SCK-CEN): **Nele Horeman; Hildegarde Vandenhove**

Germany (BfS): **Christine Willdrot**

Japan (NIRS): **Satoshi Yoshida, Dr Fuma, Maruyama**

Russian Federation (Ecomod; RIARAE): **Tatiana Sazykina, Stanislav Geraskin**

Spain (CIEMAT): **Almudena Real**

Sweden (Vattenfall & SU): **Synnove Sundell-Bergman, Karolina Stark**

United Kingdom (EA): **Laura Newsome; David Copplestone**

FREDERICA Update: Quality Control Analysis

DOSIMETRY	Marks available
Determination of Dose	Select each appropriate statement and add the scores of these statements together
No value for dose given	0
Type of TLDs given	1
Number and position of TLDs given	1
Total dose could be calculated from information given	1
Value for dose given	1
Calculation of dose given	1
Determination of Dose Rate	Select one statement only and enter that statements score
Dose rate not given	0
Dose rate can be calculated from the information given	3
Dose rate determined	5
Background levels	Select one statement only and enter that statements score
No background dose or dose rate given	0
Background dose/dose rate can be calculated	3
Background dose and dose rate given	5
TOTAL FOR SECTION	MAXIMUM 15

FREDERICA Update: Quality Control Analysis

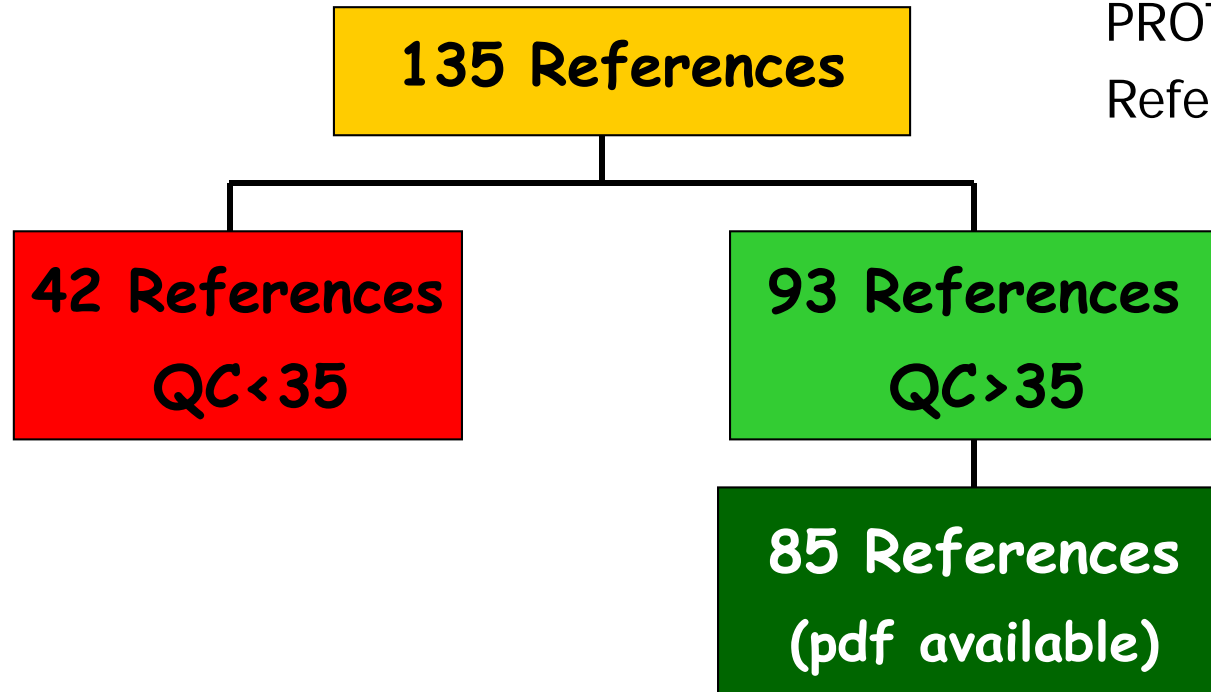
EXPERIMENTAL DESIGN	Marks available
Endpoint analysed	Select each appropriate statement and add the scores of these statements together
Endpoints do not come under the FASSET umbrella endpoints	0
One FASSET umbrella endpoint considered	1
Two or more FASSET umbrella endpoints considered	2
One specific endpoint studied and methods stated	1
Two or more specific endpoints studied, methods stated	2
Ecological relevance of endpoint stated	1
Control Groups	Select one statement only and enter that statements score
No Control group	0
Control groups used	3
Information confirming that control groups are kept in comparable conditions to experimental groups given	5
Exposure conditions to radiation	Select each appropriate statement and add the scores of these statements together
Only one dose/dose rate used	1
More than one dose/dose rate used	2
Details of source(s) given (use of multi nuclide sources if applicable)	2
Duration of exposure given	1
Test Organism	Select each appropriate statement and add the scores of these statements together
Species named	1
Sex (if relevant) and life cycle stage stated	2
Source of test organism stated	1
Details of husbandry/maintenance stated	1
TOTAL FOR SECTION /20 * 2	MAXIMUM 40

FREDERICA Update: Quality Control Analysis

STATISTICS	Marks available
Number of replicates of the experiment	Select one statement only and enter that statements score
No replicates	0
1-3 replicates	2
4-6 replicates	3
7-9 replicates	4
10 or more replicates	5
Number of individuals	Select one statement only and enter that statements score
1-3 individuals	2
4-6 individuals	3
7-9 individuals	4
10 or more individuals	5
Number of points per curve	Select one statement only and enter that statements score
No dose response undertaken (only one dose given)	0
2 points	1
3 points	2
4 points	3
5 points	4
6 or more points	5
Method used for statistical analysis	Select each appropriate statement and add the scores of these statements together
No statistical methods used	0
Name of statistical methods stated	1
Calculation of statistics stated	2
Reasons/justification of statistical methods used stated	2
Confidence Limits	Select one statement only and enter that statements score
No confidence limits given	0
All significant differences reported to <0.10	2
All significant differences reported to <0.05	3
All significant differences reported to <0.01	5
TOTAL FOR SECTION	MAXIMUM 25
GRAND TOTAL	MAXIMUM 80

FREDERICA Update: Quality-Control Analysis

PROTECT Project: SSD analysis
References with QC >35 points



19 NO Dose-response (single dose)
66 References “potentially” useful
for Dose-Response Analysis



27 Data TABLES or TEXT
12 Data TABLES & FIGURES
27 Data FIGURES

FREDERICA Update 2010

➤ SCK-CEN added 18 new papers on plants

✓ 10 papers with $QC < 35$

✓ 8 papers with $QC > 35$:

- 3 No dose-response data

- **5 Dose-response analysis**

➤ Russian literature

FREDERICA Update: Russian Literature Database

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33 Refs (5 already in FREDERICA, but incomplete)

All but 1 QC > 35

- **Chronic exposure; Field studies:** Chernobyl; Mayak; Komi Republic; Semipalatinsk; Taiga (Underground nuclear explosion); Vrangal Island.
- **Wildlife groups:** Plants (51%: 18 Refs); Mammals (34%: 12 Refs); Insects (6%: 2 Refs); Invertebrates (6%: 2 Refs); Fish (3%: 1 Ref)
- **Endpoints:** Mut (35 %); Morb (25 %); Repr (20 %); Mort (7 %); Others (Adaptation; Ecology (13 %))

WG-6 of EMRAS-II: 192 Refs

FREDERICA Update: Future

- Russian references (33 Refs) have to be added to FREDERICA.
- FREDERICA errors: checking the information included in FREDERICA

Future:

- Abstract for the International Conference on Radioecology & Environmental Radioactivity. 19-24 June 2011. Hamilton, Ontario, Canada
- STAR Network
 - Review of effects data. FREDERICA update

