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STUDY TITLE

Report

N-Methylpyrrolidon - Determination of the chronic effect on the reproduction of the water flea *Daphnia magna* STRAUS

DATA REQUIREMENT

OECD 202

AUTHOR

Dr. Jatzek (Study Director)

STUDY COMPLETED ON

25 July 2001

PERFORMING LABORATORY

Experimental Toxicology and Ecology
BASF Aktiengesellschaft
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LABORATORY PROJECT IDENTIFICATION

Project No.: 00/0969/51/1

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2 QUALITY CRITERIA

This project was performed according to the following quality criteria:

- European Standard EN 45001 "General criteria for the operation of testing laboratories"
- International Standard ISO 9002 "Quality systems - Model for quality assurance in production installation and servicing"
- OECD Principles of Good Laboratory Practice (GLP).

The test facility is registered for GLP and its ecological part is accredited to Deutsche Akkreditierungsstelle Chemie GmbH (DACH) see number DAC-P-0030-97-02.

Copies of the certificates can be provided by request.

According to the International Standard ISO 31-0 the decimal sign is a comma.

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3 SUMMARY

N-Methylpyrrolidon - Determination of the chronic effect on the reproduction of the water flea *Daphnia magna* STRAUS was investigated in a 21 day semistatic test according to OECD-Guideline for testing of chemicals, No. 202, 4. April 1984: Daphnia sp., Akute Inmobilisation Test and Reproduction Test. Part.II –Reproduction Test.

TEST RESULTS

NOEC	=	**12,5**	**mg/l**
LOEC	=	**25**	**mg/l**
LC_0	=	**25**	**mg/l**

The test substance was tested in the range of concentrations between 0,39 and 100 mg/l.
The dilution factor was 2.

As test criteria the reproduction and mortality of the test animals are given.

Remarks:

With an analytical recovery rate of > 80% no transformation of the nominal EC-values into the values of the concentration control analysis occurs.

O_2-concentration at day 21 in test concentration 100 mg/l was only 2,2 mg/l. This has no influence on the test results because NOEC and LOEC were in a lower concentation range.

4 GLP-STATEMENT OF COMPLIANCE, SIGNATURES AND RETENTION OF RECORDS

This study was conducted in accordance with the OECD Principles of Good Laboratory Practice and the GLP Principles of the German "Chemikaliengesetz" (Chemicals Act).
The raw data, protocol, reserve sample and the original of this report will be stored at BASF Aktiengesellschaft 67056 Ludwigshafen/Rhein (Germany) at least for the period of time specified in the GLP regulations. Details concerning responsibilities or locations of archiving can be seen from the respective SOPs and from the raw data.

Date:	20 July 2001	25 July 2001	25 July 2001
Signature:			
Name	Mrs. Kary	Dr. Jatzek	Dr. Pagga
Function	Project Technician	Study Director	Head of Laboratory

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STATEMENT
of the Quality Assurance Unit

The Quality Assurance Unit (QAU) inspected the study and reported any inspection results to the Study Director and to Management.

The final report reflects the raw data.

Phase of study	Date of inspection (mm-dd-yyyy)	Reported to Study Director and to Management (mm-dd-yyyy)
Study Plan:	03-13-2001	03-13-2001
Conduct of study:	03-14-2001	03-14-2001
Report:	06-28-2001	06-28-2001

Ludwigshafen, 25 July 2001

Vetter

Vetter

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6 DESCRIPTION OF THE TEST METHOD

Test organism

The clone of *Daphnia magna* STRAUS 1820 used was supplied by the Institut National de Recherche Chimique Appliquée, France, in 1978. From this date on this clone was cultured and bred continuously in the Laboratory of Ecology of BASF AG in Ludwigshafen.

Daphnia magna is geographically widely distributed and is an important part of aquatic food webs where it can be grouped between primary producers and decomposers, on the one hand, and, predators, on the other. *Daphnia magna* is recommended as a test organism all over the world.

This study investigated the influence of the test substance on the reproduction and the swimming ability (mobility) of *Daphnia magna*. The test substance was suspended in water. The daphnids were exposed to various concentrations of the test substance and compared to a control.

The daphnid tests are performed under the same environmental conditions as the culture itself. Therefore a phase of adaptation for the young is not necessary.

Definitions

Parent animals are those animals stocked at the start of the test.

Young are the progeny produced by the parent animals.

Parthenogenetic eggs are parthenogenatically produced eggs which develop without fertilization to young daphnids. Parthenogenetic eggs which fail to develop to embryos are called **aborted eggs**.

The **LOEC** (lowest observed effect concentration) for reproduction is the lowest tested concentration at which - compared to an untreated control - the mean cumulative number of live young produced per parent animal that survived the test is significantly ($\alpha \leq 0.05$) less than in the control. Each tested higher concentration must have at least an effect equal or stronger than the LOEC.

The **NOEC** (no observed effect concentration) is the tested concentration immediately below the LOEC.

The **LC_0** is the highest concentration tested at which no difference in mortality of the parent animals was observed in relation to the control.

7 TEST METHODS

EEC GuidelineXI/691/86, Draft 4: "Prolonged toxicity study with *Daphnia magna*: Effects on reproduction".

Deutsches Institut für Normung: Bestimmung der biologischen Wirkung von Wasserinhaltsstoffen auf Kleinkrebse (Reproduktionstest mit *Daphnia magna*), DIN 38 412 (Entwurf) (1981)

OECD-Guideline for testing of chemicals, No. 202, 4. April 1984: Daphnia sp., Akute Inmobilisation Test and Reproduction Test. Part.II –Reproduction Test.

Committee on Methods for Toxicity Testing with Aquatic Organisms: Methods for Acute Toxicity Tests with Fish, Macroinvertebrates and Amphibians. EPA-660/3-75-009 (1975)

Müller, P. H.: Lexikon der Stochastik. Wissenschaftliche Buchgesellschaft, 2nd edition, (1975)

Elendt, B.-P.: Untersuchungen zur Ernährung von Daphnien; Dissertation, Heidelberg University (1990)

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ED_006308_00000281-00005

8 ORDER INFORMATION

Sponsor:	Dr. Thömel	Telephone:	49665
Department code:	CZN/EZ - E 100	Date of order:	07 Dez 2000

9 SPECIFICATION OF THE TEST SUBSTANCE

Name of test substance		:	N-Methylpyrrolidon
Chemical name		:	1-Methyl-2-pyrrolidon
Other names		:	NMP
Batch number		:	continuous production from tank 53
Date of production		:	12 Oct 1993
Product number		:	no details
CAS number		:	872-50-4
Molecular formular		:	C_5H_9NO
Molecular weight	[g/mol]	:	99.1
Aggregate state		:	liquid
Density	[g/ml]	:	1.028 (at25°C)
Water-solubility		:	miscible up to 10g/l
Colour		:	colourless
Purity of the test substance		:	98,8 area-% [see 2]
Impurities		:	0,8% N-methyl-succinimide [see 2]
Homogeneity		:	yes
Instability against		:	oxygen, acid, alkali
Storage conditions		:	under N2, ambient
Expiry date:		:	June 2007 [see 2]
Further remarks		:	none

Origin of data of purity and homogeneity:

1) Observation of the Laboratory of experimental Toxicology and Ecology :
2) Report of the Analytical Laboratory ZAX No: 00L00368
3) Report of the sponsor No:
4) Report of the APD-Projekt:
5) Other Reports:

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10 PRELIMINARY INVESTIGATIONS

In an acute preliminary test with daphnids the value for the EC_{50} (48h) was > 100 mg/l.
(Project-No.: 00/0969/50/v1, from 08 Jan 2001, non GLP)

11 TEST INFORMATION

Water composition

A synthetic fresh water was used for culture and test purposes. This water was prepared on the basis of an ultrapure, demineralized water with a conductivity < 0.05 µS/cm. For the composition of this M4 medium see ISO 10706.

Properties of this medium:

Total hardness	:	2,20 - 3,20 mmol/l
Alkalinity up to pH 4.3	:	0,80 - 1,00 mmol/l
Molar ratio Ca:Mg	:	about 4 : 1
pH value	:	7,5 - 8,5
Conductivity	:	550 - 650 µS/cm

After preparation the M4 medium is aerated for approximately 24 h until saturation with oxygen is reached. The measured minimum and maximum values of the physical and chemical parameters are given under clause 13 account of the test results.

Feeding

During the test daphnids were fed live green algae (Scenedesmus subspicatus (= Desmodesmus subspicatus), cultured in a synthetic medium) daily. The algae were separated from culture medium by centrifugation, resuspended in daphnid's medium (M4) and daphnids were fed this concentrate. The algae were stored in a refrigerator (dark, about 4-8°C) for maximum 14 days. Through feeding the concentrate (maximum: 0.3 ml / 50 ml / day) the test solution was diluted in the worst case (Friday-Monday, 3 feedings) by 0.9 ml / 50 ml (= 1.8%).

Feeding schedule:

Day of Test	Amount of food per parent animal and day [mg COD] *
0-1	0,22
2-3	0,25
4-5	0,35
6-7	0,43
8 ff	0,75

*COD: chemical oxygen demand

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Performance of the test

Experimental phase	:	14 Mar 2001 – 04 Apr 2001
Begin of the study	:	08 Mar 2001
Duration of the test	:	21 days
Test temperature	:	18 - 22 °C (max. temperature difference 2 °C)
Test vessel	:	numbered glass beakers, nominal volume 100 ml, covered with numbered glass caps.
Test volume	:	50 ml
Loading	:	1 parent animal / 50 ml
Number of animals/vessel	:	1
Total number of animals/conc.	:	10
Number of replicates/conc.	:	10
Number of replicates/control	:	10
Number of replicates for the measurement of pH and O_2	:	1
Number of parallels without animals	:	1 per test concentration and control for concentration control analysis.
Age of the animals at the start of the test	:	2 - 24 h (starting with the 3rd breed of parent animals)
Age of stock animals	:	2 - 4 weeks
Illumination	:	artificial light, type warm white (e.g. OSRAM L58 W31) day:night rhythm = 16 : 8 h
Light intensity	:	about 2 - 7 $\mu E/(m^2 \cdot s)$ at a wave length of 400 - 700 nm
Change of test solution	:	each Monday, Wednesday and Friday
Removal of young from test beakers and counting	:	daily
Check of the study and recording (mortality, embryos, aborted eggs)	:	daily
Feeding	:	daily, according to feeding schedule (see page 7)
Measurement of temperature	:	Continuously during the whole test period in a separate vessel close to the test vessels.
Measurement of pH and oxygen	:	at the start of the test and at each change of test solution in the 48- or 72-hour-old solution in one parallel at each concentration

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Preparation of the stock solution and dilution

The test substance was stirred in M4 medium for about 30 minutes at 20 ± 2 °C.

The nominal concentration of the stock solution was 100 mg/l.

By diluting this stock solution with M4 medium the following nominal concentrations (mg/l) were prepared:

Control	100	50	25	12,5	6,25	3,13	1,56	0,78	0,39

Statistics

For the statistical evaluation of the LOEC and NOEC Duncan's multiple range test was used.

Concentration control analyses

The concentration control analyses were performed with test solutions of the following nominal concentrations (mg/l) of the test substance:

control	100	12,5	1,56						

Samples for analysis were taken in the 1st, the 2nd and the 3rd week of the test. For each concentration the freshly prepared test solution (unstocked) and the corresponding 48 h or 72 h old test solution (unstocked) were analyzed.

Detailed information on the methods of the concentration control analyses is given in the separate analytical test report (Annex).

12 VALIDITY CRITERIA

- In the control the mortality of parent animals up to the end of the test was ≤ 10%.
- In the control no animals should be captured in the surface layer.
- In the control the first young animals should be observed till day 9.
- In the control the mean number of living young per parent animal that survived the test was ≥ 60.
- In the control the coefficient of variation for the mean number of living young per parent animal that survived the test was ≤ 25%.
- The pH-value in the test solutions did not vary within more than one unit.
- The EC_{50}(24h) of the control substance potassium dichromate was 0,92 mg/l (Date of the last control experiment: 14 Mar 2001, project number: 97/0242/50/55).

The test is valid.

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13 ACCOUNT OF THE TEST RESULTS

Table 1

Summary of the NOEC and LOEC values for reproduction and LC_0 (mortality) after 21 d exposure.*

NOEC = 12,5 mg/l

LOEC = 25 mg/l

LC_0 = 25 mg/l

* see tables 4, 5, 6 and 7, for more detailed information

In the control the first young were observed at day 8. In the highest tested concentration, in which the daphnids produced young (100 mg/l), the first young were observed at day 8

Table 2

Minimum and maximum values of the chemical and physical characteristics of the test solutions during the test period.

Parameter	Minimum	Maximum
pH value **	7,4	8,2
Oxygen content [mg/l] **	2,2	9,1
Temperature [°C] *	20,3	21,0

* measured in a separate vessel close to the test vessels
** see tables 8 and 9 for more detailed information

Table 3

Analytically measured relative minimum and maximum concentrations of the test substance in the test solutions. The values are given in percent of the nominal concentrations*.

Time [h]	Stocked with daphnids	Minimum [%]	Maximum [%]
0	No	92,3	111
48/72	no	86,2**	126

* The results are described in more detail in the separate analytical test report (Annex).

** By preparing the reserve sample from concentration 12,5 mg/l (day 19) by mistake the sample was bottled wrong (recovery rate 0%). Because the recovery rate from the lowest (1,56 mg/l) and the highest concentration (100 mg/l) was within 100 ± 20 % the other concentrations including 12,5 mg/l have to be in the same rage.

With an analytical recovery rate of > 80% no transformation of the nominal EC-values into the values of the concentration control analysis occurs.

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Table 4

Total number of living young per surviving parent animal after the 21 day exposure period. Base for the data are the values standardized on the number of surviving parent animals of each of the ten parallels.

concentration [mg/l]	Par. 1	Par. 2	Par. 3	Par. 4	Par. 5	Par. 6	Par. 7	Par. 8	Par. 9	Par. 10	sum	mean	sd	vc [%]
0	149	171	165	158	163	170	183	153	174	161	1657	165,7	8,9	5,4
0,39	169	163	167	172	159	170	163	137	181	182	1663	166,3	12,0	7,2
0,78	173	160	153	165	166	89	166	173	194	185	1604	160,4	32,5	20,2
1,56	166	205	169	183	T	170	160	173	139	164	1531	170,1	16,7	9,8
3,13	171	157	151	154	173	163	146	153	176	148	1592	159,2	10,3	6,5
6,25	174	169	147	144	142	T	160	187	151	180	1454	161,6	15,7	9,7
12,5	156	162	172	159	161	T	162	171	161	188	1492	165,8	9,3	5,6
25	121	110	126	146	134	104	141	136	159	131	1306	130,6	15,6	11,9
50	T	132	133	T	99	100	107	T	98	T	669	111,5	15,1	13,6
100	T	T	102	T	T	T	98	T	93	T	293	97,7	3,7	3,8

Table 5

Total number of dead young per surviving parent animal after the 21 day exposure period. Base for the data are the values standardized on the number of surviving parent animals of each of the ten parallels.

concentration [mg/l]	Par. 1	Par. 2	Par. 3	Par. 4	Par. 5	Par. 6	Par. 7	Par. 8	Par. 9	Par. 10	sum	mean	sd	vc [%]
0	0	0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0
0,39	0	0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0
0,78	0	0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0
1,56	0	0	0	0	T	0	0	0	0	0	0,0	0,0	0,0	0,0
3,13	0	0	0	0	0	0	0	0	0	0	0,0	0,0	0,0	0,0
6,25	0	0	0	0	0	T	0	0	2	0	2,0	0,2	0,6	282,8
12,5	0	0	0	0	0	T	0	0	0	0	0,0	0,0	0,0	0,0
25	0	0	2	0	3	13	0	0	0	0	18,0	1,8	3,9	214,9
50	T	0	0	T	4	1	11	T	0	T	16,0	2,7	4,0	149,5
100	T	T	0	T	T	T	0	T	3	T	3,0	1,0	1,4	141,4

T = Parent animal died during the test period
cv = coefficient of variance
sd = standard deviation

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Table 6

Total number of aborted subitane eggs per surviving parent animal after the 21 day exposure period. Base for the data are the values standardized on the number of surviving parent animals of each of the four parallels.

concentration [mg/l]	Par. 1	Par. 2	Par. 3	Par. 4	Par. 5	Par. 6	Par. 7	Par. 8	Par. 9	Par. 10	sum	mean	sd	vc [%]
0	4	0	0	1	2	1	1	0	0	0	9	0,9	1,2	135,6
0,39	0	0	2	1	1	1	0	3	1	2	11	1,1	0,9	85,8
0,78	0	0	0	0	6	2	1	2	1	0	12	1,2	1,8	148,1
1,56	1	0	5	0	T	0	0	0	0	2	8	0,9	1,6	179,4
3,13	1	0	0	2	3	0	0	0	1	0	7	0,7	1,0	143,6
6,25	0	0	0	1	2	T	2	1	0	0	6	0,7	0,8	122,5
12,5	1	1	0	0	0	T	1	0	1	1	5	0,6	0,5	89,4
25	3	2	1	1	1	1	1	5	3	1	19	1,9	1,3	68,4
50	T	12	0	T	3	1	8	T	11	T	35	5,8	4,7	81,3
100	T	T	1	T	T	T	0	T	5	T	6	2,0	2,2	108,0

T = Parent animal died during the test period
cv = coefficient of variance
sd = standard deviation

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Table 7
Total number of surviving parent animals at various concentrations of the test substance and all days of the test.

concentration [mg/l]	day of the test 0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21
0	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
0,39	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
0,78	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
1,56	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	*9	9
3,13	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
6,25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	9	9
12,5	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9
25	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
50	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	7	6	6
100	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	7	4	4	3

* died because of mechanical injury during change of test solution

Table 8
Measured values for the oxygen content [mg/l], measured in one sample per test concentration.

concentration [mg/l]	day of the test 0	2	5	7	9	12	14	16	19	21
0	8,9	8,9	8,5	8,3	8,6	8,4	8,7	8,3	8,5	8,2
0,39	9,1	9,0	8,5	8,4	8,5	8,4	8,6	8,1	8,3	8,1
0,78	9,0	9,0	8,6	8,3	8,4	8,3	8,7	8,0	8,1	8,2
1,56	9,0	9,0	8,5	8,2	8,5	8,0	8,8	8,0	8,1	8,0
3,13	9,0	8,9	8,7	8,4	8,1	8,2	8,7	8,1	8,5	8,1
6,25	9,0	8,9	8,7	8,3	8,1	8,1	8,6	7,8	8,2	7,7
12,5	9,0	8,9	8,4	8,1	8,1	8,0	8,5	7,4	8,3	7,0
25	9,0	8,9	8,5	8,4	7,8	8,2	8,2	7,0	8,9	5,8
50	9,0	8,8	8,8	8,3	7,6	8,1	7,5	5,8	6,1	7,3
100	9,0	9,0	8,6	8,6	8,3	5,0	7,2	5,8	3,5	2,2

Table 9
pH-values, measured in one sample per test concentration.

concentration [mg/l]	day of the test 0	2	5	7	9	12	14	16	19	21
0	8,2	8,2	7,9	8,0	8,0	8,0	8,1	7,9	7,9	7,6
0,39	8,2	8,2	7,9	8,0	8,0	8,0	8,1	7,9	7,8	7,6
0,78	8,1	8,2	7,9	8,0	8,0	7,9	8,0	7,9	7,8	7,6
1,56	8,1	8,2	7,9	7,9	8,0	7,9	8,0	7,8	7,8	7,6
3,13	8,1	8,2	7,9	7,9	7,9	7,9	8,0	7,8	7,8	7,6
6,25	8,1	8,1	7,9	7,9	7,9	7,9	8,0	7,8	7,8	7,6
12,5	8,1	8,1	7,9	7,9	8,0	7,9	8,0	7,7	7,8	7,6
25	8,1	8,1	7,9	7,9	7,4	7,9	8,0	7,7	7,9	7,5
50	8,1	8,1	7,9	7,9	7,6	7,9	7,9	7,6	7,9	7,5
100	8,1	8,1	7,9	7,9	7,7	7,8	7,9	7,6	7,5	7,4

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Table 10

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 100 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	11	0	0	0	23	0	0	35	0	0	33	0	0	0	102
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	11	0	0	0	23	0	0	35	0	0	33	0	0	0	102
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
2	Y_{total}	0	0	0	0	0	0	0	0	0	0	12	0	0	21	0	0	0	0	0	0	0	0	33
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
	Y_{alive}	0	0	0	0	0	0	0	0	0	0	12	0	0	18	0	0	0	0	0	0	0	0	30
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	
3	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	26	0	0	28	0	0	6	27	0	0	0	102
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	26	0	0	28	0	0	6	27	0	0	0	102
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	24	0	0	25	0	0	0	0	0	0	0	65
	Y_{dead}	0	0	0	0	0	0	0	0	4	0	0	0	0	0	3	0	0	0	0	0	0	0	7
	Y_{alive}	0	0	0	0	0	0	0	0	12	0	0	24	0	0	22	0	0	0	0	0	0	0	58
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	5	0	0	0	0	0	0	0	6
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	
5	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	25	0	0	11	0	0	0	0	0	0	0	51
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	0	0	0	5
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	25	0	0	6	0	0	0	0	0	0	0	46
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	28	0	0	0	29
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	
6	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	22	0	0	0	0	0	0	0	0	0	0	36
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	22	0	0	0	0	0	0	0	0	0	0	36
	$S_{aborted}$	0	0	0	0	0	0	0	0	2	0	0	0	0	0	28	0	0	0	0	0	0	0	30
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	0	
7	Y_{total}	0	0	0	0	0	0	0	0	10	0	0	23	0	0	34	0	0	6	25	0	0	0	98
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	10	0	0	23	0	0	34	0	0	6	25	0	0	0	98
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	19	0	0	0	0	0	0	22	0	0	0	55
	Y_{dead}	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	Y_{alive}	0	0	0	0	0	0	0	0	12	0	0	19	0	0	0	0	0	0	22	0	0	0	53
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	0	0	0	0	0	22
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	
9	Y_{total}	0	0	0	0	0	0	0	0	0	15	0	0	0	17	0	0	34	0	0	0	30	0	96
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	3
	Y_{alive}	0	0	0	0	0	0	0	0	0	15	0	0	0	14	0	0	34	0	0	0	30	0	93
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	2	0	0	0	3	0	0	0	0	0	0	0	0	5
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	16	0	0	20	0	0	0	30	0	0	0	82
	Y_{dead}	0	0	0	0	0	0	0	0	8	0	0	0	0	0	2	0	0	0	4	0	0	0	14
	Y_{alive}	0	0	0	0	0	0	0	0	8	0	0	16	0	0	18	0	0	0	26	0	0	0	68
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	7	0	0	0	1	0	0	0	9
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	111	15	12	155	23	38	118	35	34	12	137	0	30	0	720
	Y_{dead}	0	0	0	0	0	0	0	0	14	0	0	0	0	6	10	0	0	0	4	0	0	0	34
	Y_{alive}	0	0	0	0	0	0	0	0	97	15	12	155	23	32	108	35	34	12	133	0	30	0	686
	$S_{aborted}$	0	0	0	0	0	0	0	0	5	2	1	0	1	4	63	0	0	0	29	0	0	0	105
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	7	4	4	3	

P = Parent animal, S = Subitane egg, Y = Young

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Table 11

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 50 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	31	0	0	18	0	0	9	0	0	0	0	73
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	7
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	31	0	0	18	0	0	2	0	0	0	0	66
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	
2	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	36	0	0	35	0	0	14	5	132
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	36	0	0	35	0	0	14	5	132
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	1	8	12
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	30	0	0	0	31	0	0	31	133
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	30	0	0	0	31	0	0	31	133
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	9	0	0	26	0	0	35	0	0	30	0	0	0	0	100
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	9	0	0	26	0	0	35	0	0	30	0	0	0	0	100
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
5	Y_{total}	0	0	0	0	0	0	0	0	12	0	0	27	0	0	38	0	0	20	6	0	0	0	103
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	4
	Y_{alive}	0	0	0	0	0	0	0	0	12	0	0	27	0	0	38	0	0	20	2	0	0	0	99
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	10	0	0	23	0	0	35	0	0	22	11	0	0	0	101
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	Y_{alive}	0	0	0	0	0	0	0	0	10	0	0	23	0	0	34	0	0	22	11	0	0	0	100
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	26	0	0	21	0	0	22	0	0	28	5	118
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	0	0	11
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	26	0	0	21	0	0	11	0	0	28	5	107
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	2	0	0	0	0	8
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	29	0	0	19	0	0	0	0	0	0	0	64
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	29	0	0	19	0	0	0	0	0	0	0	64
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	0	7
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	
9	Y_{total}	0	0	0	0	0	0	0	0	17	0	0	26	0	0	6	0	0	0	34	0	0	15	98
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	17	0	0	26	0	0	6	0	0	0	34	0	0	15	98
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	0	0	0	0	4	11
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	24	0	0	0	0	0	0	0	0	0	0	38
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	24	0	0	0	0	0	0	0	0	0	0	38
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	16	0	0	0	0	0	0	0	16
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	140	0	0	264	0	0	238	0	0	138	82	0	42	56	960
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	18	4	0	0	0	23
	Y_{alive}	0	0	0	0	0	0	0	0	140	0	0	264	0	0	237	0	0	120	78	0	42	56	937
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	0	0	3	2	0	1	12	58
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	7	7	6	6	

P = Parent animal, S = Subitane egg, Y = Young

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Table 12

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 25 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	17	0	0	25	0	0	29	0	0	39	0	0	11	0	121
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	17	0	0	25	0	0	29	0	0	39	0	0	11	0	121
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	2	0	0	0	0	3
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	24	0	0	14	0	0	35	0	0	21	0	110
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	24	0	0	14	0	0	35	0	0	21	0	110
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	22	0	0	27	0	0	28	0	0	34	0	0	17	0	128
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	Y_{alive}	0	0	0	0	0	0	0	0	22	0	0	27	0	0	26	0	0	34	0	0	17	0	126
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	28	0	0	30	0	0	38	0	0	36	0	146
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	28	0	0	30	0	0	38	0	0	36	0	146
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	23	0	0	34	0	0	25	0	0	40	0	137
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	3
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	23	0	0	34	0	0	22	0	0	40	0	134
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	6	0	0	25	0	0	33	0	0	18	0	0	35	0	117
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	0	0	13
	Y_{alive}	0	0	0	0	0	0	0	0	6	0	0	25	0	0	33	0	0	5	0	0	35	0	104
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	27	0	0	26	0	0	34	0	0	36	0	141
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	27	0	0	26	0	0	34	0	0	36	0	141
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	28	0	0	26	0	0	30	0	0	38	0	136
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	28	0	0	26	0	0	30	0	0	38	0	136
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	5
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	31	0	0	32	0	0	39	0	0	0	39	159
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	31	0	0	32	0	0	39	0	0	0	39	159
	$S_{aborted}$	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	3
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	0	23	0	0	35	0	0	0	35	0	0	38	0	0	131
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	0	23	0	0	35	0	0	0	35	0	0	38	0	0	131
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	140	23	0	238	35	0	252	0	35	292	0	38	234	39	1326
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	16	0	0	0	0	18
	Y_{alive}	0	0	0	0	0	0	0	0	140	23	0	238	35	0	250	0	35	276	0	38	234	39	1308
	$S_{aborted}$	0	0	0	0	0	0	0	0	7	0	0	0	0	0	2	0	0	9	0	1	0	0	19
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

P = Parent animal, S = Subitane egg, Y = Young

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Table 13

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted sublitane eggs and the living parent animals.

Concentration of the test substance: 12,5 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	13	0	0	24	0	27	8	0	39	0	0	45	0	0	156
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	13	0	0	24	0	27	8	0	39	0	0	45	0	0	156
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	36	0	0	46	0	0	38	0	162
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	36	0	0	46	0	0	38	0	162
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	29	0	0	35	0	0	48	0	0	42	0	172
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	29	0	0	35	0	0	48	0	0	42	0	172
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	25	0	0	33	0	0	45	0	0	41	0	159
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	25	0	0	33	0	0	45	0	0	41	0	159
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	31	0	0	34	0	0	44	0	0	38	0	161
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	31	0	0	34	0	0	44	0	0	38	0	161
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	17	0	0	29	0	0	35	0	0	48	0	14	6	0	149
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
	Y_{alive}	0	0	0	0	0	0	0	0	17	0	0	29	0	0	35	0	0	48	0	14	1	0	144
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	
7	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	24	0	38	0	0	35	7	0	0	42	0	162
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	24	0	38	0	0	35	7	0	0	42	0	162
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	8	0	0	32	0	40	0	0	47	0	0	43	0	0	171
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	8	0	0	32	0	40	0	0	47	0	0	43	0	0	171
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	16	0	29	0	0	23	17	0	0	35	0	0	41	0	161
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	29	0	0	23	17	0	0	35	0	0	41	0	161
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	0	27	0	0	23	0	0	44	0	0	41	0	0	53	188
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	0	27	0	0	23	0	0	44	0	0	41	0	0	53	188
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	133	27	29	221	23	128	198	44	121	273	41	102	248	53	1841
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	5
	Y_{alive}	0	0	0	0	0	0	0	0	133	27	29	221	23	128	198	44	121	273	41	102	243	53	1836
	$S_{aborted}$	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	1	0	1	0	0	0	0	5
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	

P = Parent animal, S = Sublitane egg, Y = Young

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Table 14

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 6,25 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	29	0	0	35	0	0	46	0	0	48	0	174
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	29	0	0	35	0	0	46	0	0	48	0	174
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	20	0	0	28	0	0	27	0	26	19	0	23	26	0	169
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	20	0	0	28	0	0	27	0	26	19	0	23	26	0	169
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	22	0	0	25	0	0	43	0	0	42	0	147
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	22	0	0	25	0	0	43	0	0	42	0	147
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	29	0	7	14	0	36	0	0	43	0	0	144
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	29	0	7	14	0	36	0	0	43	0	0	144
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	12	0	0	23	0	0	9	0	33	14	0	51	0	0	142
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	12	0	0	23	0	0	9	0	33	14	0	51	0	0	142
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	11	0	0	23	0	0	29	0	38	3	0	0	0	0	104
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	11	0	0	23	0	0	29	0	38	3	0	0	0	0	104
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	30	0	0	0	0	33
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0	
7	Y_{total}	0	0	0	0	0	0	0	0	15	0	22	4	0	25	0	0	42	0	0	52	0	0	160
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	22	4	0	25	0	0	42	0	0	52	0	0	160
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	0	27	0	0	25	0	0	39	0	0	43	0	0	53	187
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	0	27	0	0	25	0	0	39	0	0	43	0	0	53	187
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	20	0	0	28	0	0	22	0	0	43	0	0	40	0	153
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	Y_{alive}	0	0	0	0	0	0	0	0	20	0	0	28	0	0	20	0	0	43	0	0	40	0	151
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	17	0	0	32	0	0	38	0	0	48	0	0	45	0	180
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	17	0	0	32	0	0	38	0	0	48	0	0	45	0	180
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	141	27	22	218	25	32	199	39	175	216	43	169	201	53	1560
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	Y_{alive}	0	0	0	0	0	0	0	0	141	27	22	218	25	32	197	39	175	216	43	169	201	53	1558
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	1	0	0	0	0	6	0	2	30	0	0	0	0	39
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	9	9	

P = Parent animal, S = Subitane egg, Y = Young

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Table 15

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 3,13 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	30	0	0	35	0	0	46	0	0	44	0	171
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	30	0	0	35	0	0	46	0	0	44	0	171
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	26	0	0	34	0	0	41	0	0	38	0	157
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	26	0	0	34	0	0	41	0	0	38	0	157
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	13	0	0	24	0	0	27	0	0	44	0	0	43	0	151
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	13	0	0	24	0	0	27	0	0	44	0	0	43	0	151
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	26	0	0	25	0	0	44	0	0	45	0	154
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	26	0	0	25	0	0	44	0	0	45	0	154
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	21	0	0	23	0	0	31	0	0	50	0	0	48	0	173
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	21	0	0	23	0	0	31	0	0	50	0	0	48	0	173
	$S_{aborted}$	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	3
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	32	0	0	34	0	40	0	0	37	6	0	163
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	32	0	0	34	0	40	0	0	37	6	0	163
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	30	0	16	0	0	37	0	0	45	0	0	146
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	30	0	16	0	0	37	0	0	45	0	0	146
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	28	0	40	0	0	44	0	0	153
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	28	0	40	0	0	44	0	0	153
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	32	0	0	38	0	0	45	0	0	43	0	176
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	32	0	0	38	0	0	45	0	0	43	0	176
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	11	0	0	29	0	0	32	0	0	41	0	0	35	0	148
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	11	0	0	29	0	0	32	0	0	41	0	0	35	0	148
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	159	0	0	277	0	16	284	0	117	311	0	126	302	0	1592
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	159	0	0	277	0	16	284	0	117	311	0	126	302	0	1592
	$S_{aborted}$	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	2	0	7
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

P = Parent animal, S = Subitane egg, Y = Young

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Table 16

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 1,56 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	31	0	0	25	0	0	47	0	0	50	0	168
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	31	0	0	25	0	0	47	0	0	50	0	168
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	0	26	0	0	37	0	0	45	0	0	48	0	0	49	205
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	0	26	0	0	37	0	0	45	0	0	48	0	0	49	205
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	14	0	21	0	0	28	3	0	48	0	0	37	18	0	169
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	21	0	0	28	3	0	48	0	0	37	18	0	169
	$S_{aborted}$	0	0	0	0	0	0	0	0	3	0	0	0	0	0	2	0	0	0	0	0	0	0	5
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	31	0	0	37	0	0	50	0	0	49	0	183
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	31	0	0	37	0	0	50	0	0	49	0	183
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	12	0	0	29	0	0	39	0	0	44	0	0	8	0	132
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	12	0	0	29	0	0	39	0	0	44	0	0	8	0	132
	$S_{aborted}$	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	
6	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	28	0	0	36	0	0	48	0	0	44	0	170
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	28	0	0	36	0	0	48	0	0	44	0	170
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	Y_{total}	0	0	0	0	0	0	0	0	5	0	0	28	0	0	38	0	0	43	0	0	46	0	160
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	5	0	0	28	0	0	38	0	0	43	0	0	46	0	160
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	27	0	0	39	0	0	46	0	0	45	0	173
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	27	0	0	39	0	0	46	0	0	45	0	173
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	19	0	0	33	0	0	33	0	0	24	0	0	30	0	139
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	19	0	0	33	0	0	33	0	0	24	0	0	30	0	139
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	17	0	0	25	0	0	34	0	0	47	0	0	41	0	164
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	17	0	0	25	0	0	34	0	0	47	0	0	41	0	164
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	128	26	21	232	37	28	284	45	48	349	48	37	331	49	1663
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	128	26	21	232	37	28	284	45	48	349	48	37	331	49	1663
	$S_{aborted}$	0	0	0	0	0	0	0	0	5	0	0	0	0	0	5	0	0	0	0	0	0	0	10
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	9	9	

P = Parent animal, S = Subitane egg, Y = Young

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Table 17

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 0,78 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	19	0	0	27	0	0	35	0	0	49	0	0	43	0	173
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	19	0	0	27	0	0	35	0	0	49	0	0	43	0	173
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	13	0	0	28	0	0	34	0	0	44	0	0	41	0	160
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	13	0	0	28	0	0	34	0	0	44	0	0	41	0	160
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	13	0	0	23	0	0	33	0	0	44	0	0	40	0	153
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	13	0	0	23	0	0	33	0	0	44	0	0	40	0	153
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	37	0	0	44	0	0	43	0	165
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	37	0	0	44	0	0	43	0	165
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	13	0	0	23	0	0	37	0	0	45	0	0	48	0	186
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	13	0	0	23	0	0	37	0	0	45	0	0	48	0	186
	$S_{aborted}$	0	0	0	0	0	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	0	0	6
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	22	0	0	32	0	0	0	0	0	0	0	69
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	22	0	0	32	0	0	0	0	0	0	0	69
	$S_{aborted}$	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	Y_{total}	0	0	0	0	0	0	0	0	13	0	0	25	0	0	38	0	0	47	0	0	43	0	166
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	13	0	0	25	0	0	38	0	0	47	0	0	43	0	166
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	24	0	0	40	0	0	47	0	0	47	0	173
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	24	0	0	40	0	0	47	0	0	47	0	173
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	28	0	0	40	0	0	53	0	0	57	0	194
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	28	0	0	40	0	0	53	0	0	57	0	194
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	17	0	0	31	0	0	41	0	0	50	0	0	46	0	185
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	17	0	0	31	0	0	41	0	0	50	0	0	46	0	185
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	150	0	0	256	0	0	367	0	0	423	0	0	408	0	1604
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	150	0	0	256	0	0	367	0	0	423	0	0	408	0	1604
	$S_{aborted}$	0	0	0	0	0	0	0	0	11	0	0	0	0	0	0	0	0	0	0	0	1	0	12
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

P = Parent animal, S = Subitane egg, Y = Young

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Table 16

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 0,39 mg/l

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	17	0	0	22	0	0	37	0	0	47	0	0	46	0	169
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	17	0	0	22	0	0	37	0	0	47	0	0	46	0	169
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	13	0	0	26	0	0	34	0	52	0	0	0	36	0	163
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	13	0	0	26	0	0	34	0	52	0	0	0	36	0	163
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	31	0	0	45	0	0	50	0	167
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	25	0	0	31	0	0	45	0	0	50	0	167
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	12	0	0	27	0	0	34	0	0	53	0	0	46	0	172
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	12	0	0	27	0	0	34	0	0	53	0	0	46	0	172
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	21	0	0	33	0	0	47	0	0	42	0	159
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	21	0	0	33	0	0	47	0	0	42	0	159
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	21	0	0	26	0	0	34	0	0	43	0	0	46	0	170
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	21	0	0	26	0	0	34	0	0	43	0	0	46	0	170
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	30	0	0	44	0	0	47	0	163
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	30	0	0	44	0	0	47	0	163
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	12	0	0	15	0	0	21	0	0	45	0	0	44	0	137
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	12	0	0	15	0	0	21	0	0	45	0	0	44	0	137
	$S_{aborted}$	0	0	0	0	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	3
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	31	0	0	38	0	0	50	0	0	46	0	181
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	31	0	0	38	0	0	50	0	0	46	0	181
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	28	0	0	44	0	0	50	0	0	44	0	182
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	26	0	0	44	0	0	50	0	0	44	0	182
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	154	0	0	246	0	0	336	0	52	424	0	0	449	0	1663
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	154	0	0	246	0	0	336	0	52	424	0	0	449	0	1663
	$S_{aborted}$	0	0	0	0	0	0	0	0	6	0	0	2	0	0	2	0	0	0	0	0	1	0	11
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

P = Parent animal, S = Subitane egg, Y = Young

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Table 19

Table and summarized evaluation of the daily single values of the amount of young (total, alive and dead), of the aborted subitane eggs and the living parent animals.

Concentration of the test substance: 0 mg/l (Control)

vessel No.	day	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	sum
1	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	13	0	20	12	0	44	0	0	20	24	0	149
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	13	0	20	12	0	44	0	0	20	24	0	149
	$S_{aborted}$	0	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	0	4
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
2	Y_{total}	0	0	0	0	0	0	0	0	19	0	0	26	0	0	38	0	0	42	0	0	46	0	171
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	19	0	0	26	0	0	38	0	0	42	0	0	46	0	171
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
3	Y_{total}	0	0	0	0	0	0	0	0	21	0	0	23	0	0	34	0	0	46	0	0	41	0	165
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	21	0	0	23	0	0	34	0	0	46	0	0	41	0	165
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
4	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	27	0	0	33	0	0	42	0	0	42	0	158
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	27	0	0	33	0	0	42	0	0	42	0	158
	$S_{aborted}$	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
5	Y_{total}	0	0	0	0	0	0	0	0	14	0	0	29	0	0	34	0	0	38	0	0	48	0	163
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	14	0	0	29	0	0	34	0	0	38	0	0	48	0	163
	$S_{aborted}$	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	2
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
6	Y_{total}	0	0	0	0	0	0	0	0	16	0	0	27	0	0	38	0	0	43	0	0	46	0	170
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	16	0	0	27	0	0	38	0	0	43	0	0	46	0	170
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
7	Y_{total}	0	0	0	0	0	0	0	0	0	26	0	0	31	0	0	42	0	0	41	0	0	43	183
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	0	26	0	0	31	0	0	42	0	0	41	0	0	43	183
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
8	Y_{total}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	37	0	0	41	0	0	43	0	183
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	15	0	0	27	0	0	37	0	0	41	0	0	43	0	183
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
9	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	26	0	0	38	0	0	41	0	0	51	0	174
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	26	0	0	38	0	0	41	0	0	51	0	174
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
10	Y_{total}	0	0	0	0	0	0	0	0	18	0	0	25	0	0	34	0	0	39	0	0	45	0	161
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	18	0	0	25	0	0	34	0	0	39	0	0	45	0	161
	$S_{aborted}$	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	P_{alive}	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	
SUMMARY	Y_{total}	0	0	0	0	0	0	0	0	151	26	0	223	31	20	298	42	44	332	41	20	386	43	1857
	Y_{dead}	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	Y_{alive}	0	0	0	0	0	0	0	0	151	26	0	223	31	20	298	42	44	332	41	20	386	43	1857
	$S_{aborted}$	0	0	0	0	0	0	0	0	6	0	0	0	1	0	0	0	0	0	0	0	2	0	9
	P_{alive}	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	

P = Parent animal, S = Subitane egg, Y = Young

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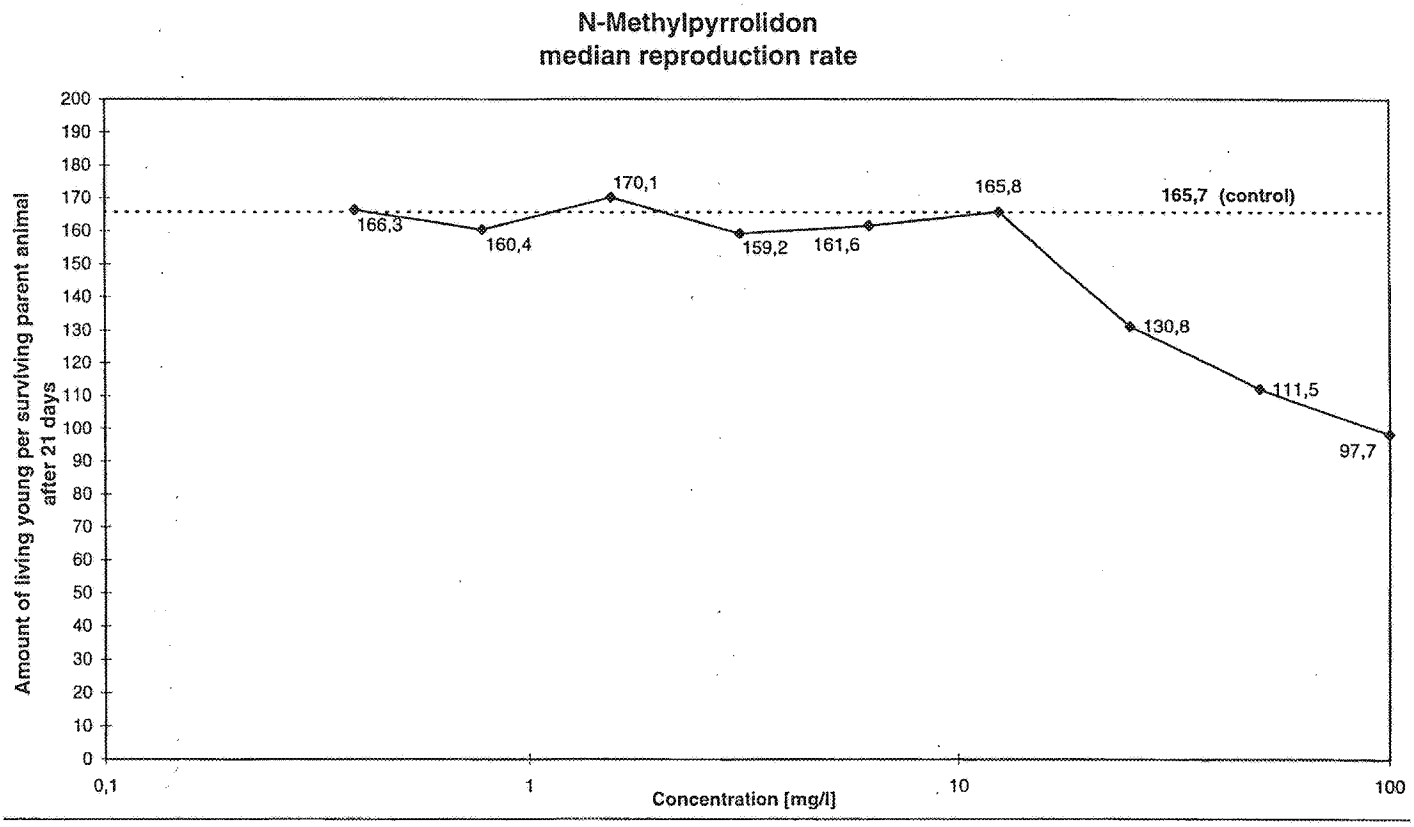

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ANALYTICAL REPORT

No. 00/0969/51/1

Test substance: **N-Methylpyrrolidon**
Results: **Values of days 0,2,7,9,16 and 19**

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Concentration Control Analysis of N-Methylpyrrolidon in M4-Medium

1. SENDER

Sender:	Dr. Jatzek
Project No.:	00/0969/51/1
Test substance:	N-Methylpyrrolidon
Batch No.:	Continuous production from tank 53

2. SAMPLE DATA

2.1. CONCENTRATION CONTROL ANALYSIS

Vehicle:	M4-Medium
Storage conditions of the samples until analysis:	refrigerator

3. MATERIAL AND METHODS

3.1. SAMPLE PREPARATION FOR ANALYSIS

Aliquots of the samples were directly used for HPLC-analysis.

3.2. ANALYTICAL METHOD

HPLC with external calibration

Column:	Nucleosil 100 5 CN 250x4mm
Eluant:	10% Methanol 90% Natriumacetat pH 11
Flow rate:	1.0 ml/min
Detection:	UV, 210 nm

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4. RESULTS AND DISCUSSION

4.1. CONCENTRATION CONTROL ANALYSIS

The results obtained for the concentration control analysis of N-Methylpyrrolidon in M4-Medium are summarized in the following table:

Date of sample preparation: Mar. 14, 2001

Date of receipt of sample in analytical laboratory: Mar. 14, 2001

Date of analytical determination: Mar. 14, 2001

Sample No.	Nominal concen-tration [mg/l]	Analytical concentration [mg/l]			% of nominal concentration
		Sample I	Sample II	Mean	
00/0969/51/1/a/d0/0	0	n.d.	n.d.	n.d.	
00/0969/51/1/a/d0/1.56	1.56	1.52	1.72	1.62	103.8
00/0969/51/1/a/d0/12.5	12.5	14.10	13.76	13.93	111.4
00/0969/51/1/a/d0/100	100	107.0	107.6	107.3	107.3

n.d. = non-detectable

Date of sample preparation: Mar. 16, 2001

Date of receipt of sample in analytical laboratory: Mar. 16, 2001

Date of analytical determination: Mar. 16, 2001

Sample No.	Nominal concen-tration [mg/l]	Analytical concentration [mg/l]			% of nominal concentration
		Sample I	Sample II	Mean	
00/0969/51/1/a/d2/0	0	n.d.	n.d.	n.d.	
00/0969/51/1/a/d2/1.56	1.56	1.65	1.56	1.61	103.2
00/0969/51/1/a/d2/12.5	12.5	12.83	12.97	12.90	103.2
00/0969/51/1/a/d2/100	100	99.9	100.0	100.0	100.0

n.d. = non-detectable

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Date of sample preparation: Mar. 21, 2001

Date of receipt of sample in analytical laboratory: Mar. 21, 2001

Date of analytical determination: Mar. 21, 2001

Sample No.	Nominal concen-tration [mg/l]	Analytical concentration [mg/l]			% of nominal concentration
		Sample I	Sample II	Mean	
00/0969/51/1/a/d7/0	0	n.d.	n.d.	n.d.	
00/0969/51/1/a/d7/1.56	1.56	1.45	1.43	1.44	92.3
00/0969/51/1/a/d7/12.5	12.5	12.70	12.91	12.81	102.5
00/0969/51/1/a/d7/100	100	100.6	99.7	100.2	100.2

n.d. = non-detectable

Date of sample preparation: Mar. 23, 2001

Date of receipt of sample in analytical laboratory: Mar. 23, 2001

Date of analytical determination: Mar. 27, 2001

Sample No.	Nominal concen-tration [mg/l]	Analytical concentration [mg/l]			% of nominal concentration
		Sample I	Sample II	Mean	
00/0969/51/1/a/d9/0	0	n.d.	n.d.	n.d.	
00/0969/51/1/a/d9/1.56	1.56	1.54	1.51	1.53	98.1
00/0969/51/1/a/d9/12.5	12.5	12.55	13.08	12.82	102.6
00/0969/51/1/a/d9/100	100	126.0	126.7	126.4	126.4

n.d. = non-detectable

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Date of sample preparation: Mar. 30, 2001

Date of receipt of sample in analytical laboratory: Mar. 30, 2001

Date of analytical determination: Apr. 02, 2001

Sample No.	Nominal concen-tration [mg/l]	Analytical concentration [mg/l]			% of nominal concentration
		Sample I	Sample II	Mean	
00/0969/51/1/a/d16/0	0	n.d.	n.d.	n.d.	
00/0969/51/1/a/d16/1.56	1.56	1.59	1.49	1.54	98.7
00/0969/51/1/a/d16/12.5	12.5	13.41	13.34	13.38	107.0
00/0969/51/1/a/d16/100	100	99.8	98.6	99.2	99.2

n.d. = non-detectable

Date of sample preparation: Apr. 02, 2001

Date of receipt of sample in analytical laboratory: Apr. 02, 2001

Date of analytical determination: Apr. 02, 2001

Sample No.	Nominal concen-tration [mg/l]	Analytical concentration [mg/l]			% of nominal concentration
		Sample I	Sample II	Mean	
00/0969/51/1/a/d19/0	0	n.d.	n.d.	n.d.	
00/0969/51/1/a/d19/0/R	0	n.d.	n.d.	n.d.	
00/0969/51/1/a/d19/1.56	1.56	1.69	1.60	1.65	105.8
00/0969/51/1/a/d19/12.5	12.5	n.d.	n.d.	n.d.	---
00/0969/51/1/a/d19/12.5/R	12.5	n.d.	n.d.	n.d.	---
00/0969/51/1/a/d19/100	100	87.4	87.0	87.2	87.2
00/0969/51/1/a/d19/100/R	100	85.5	86.8	86.2	86.2

n.d. = non-detectable

Except for the sample of the intermediate concentration of a single timepoint (April 02, 2001), the mean values of N-Methylpyrrolidon in M4-Medium were found to be in the range of 86.2 – 126.4 % of the nominal concentration.
Except for this single sample, the results demonstrated the correctness of the concentrations of N-Methylpyrrolidon in M4-Medium.

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Dr. Leibold
(Head of analytical laboratory)

13/07/2007
Date
(dd/mm/yyyy)

Note: The data given are part of Project 00/0969/51/1 which was performed in compliance with GLP and the results were audited by the QAU.

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