

PUE “INSTITUTE OF RADIATION SAFETY “BELRAD”

APPROVED

Director of PUE “Institute of Radiation
Safety “Belrad”

_____ A.V. Nesterenko

“ ____ ” _____ 20__

SHORT REPORT

**UNDER THE CONTRACT No. 36 (ATLAS-2) DATED TO JUNE 25, 2008
(STAGES 19 AND 20)**

Deputy director
for international cooperation

_____ V.I. Babenko

« ____ » _____ 20__

MINSK

2010

According to the Contract No. 36 dated to June 25, 2008 following actions given in the table 1 were performed in framework of the stages 19 and 20.

Table 1 – Data on the number of measurements and the quantity of the preparation VITAPECT given in framework of the stages 19 and 20 to the Contract No. 36.

Settlement	Date	Number of measurements			Quantity of VITAPECT		Notes
		expected	all	children	expected	actual	
Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region	01.10.2009	141	137	118	282	-	
	22.02.2010	-	-	-	-	282	
	07.04.2010	141	136	123	-	-	
Korma secondary school No. 2 and Korma gymnasium of Gomel region	22-25.09.2009	518	498	475	1036	-	
	22.02.2010	-	-	-	-	1036	
	15-16.04.2010	518	274	265	-	-	
Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region	29.09.2009	100	105	79	200	-	
	22.02.2010	-	-	-	-	200	
	07.04.2010	100	85	70	-	-	
Soboli elementary school of Krasnopolye district of Mogilyov region	01.10.2009	13	33	13	26	-	
	22.02.2010	-	-	-	-	26	
	07.04.2010	13	21	14	-	-	
Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region	30.09.2009	107	79	71	214	-	
	22.02.2010	-	-	-	-	214	
	08.04.2010	107	86	76	-	-	
Yanovka secondary school and kindergarten of Krasnopolye district of Mogilyov region	29.09.2009	96	95	83	192	-	
	22.02.2010	-	-	-	-	192	
	13.05.2010	96	96	93	-	-	
Total:		1950	1645	1480	1950	1950	

Hereafter there is a statistical data processing.

KOZELYE

Characteristics	Value	Source
¹³⁷ Cs contamination density of the territory	3.43 Ci/km ²	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Number of inhabitants	218 persons	Mkhinichi village council, May 2009

External dose	0.41 mSv/a	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Internal dose	0.50 mSv/a	-----<-----
Cumulative dose	0.91 mSv/a	-----<-----

According to the data dated to September 2009 in the Kozelye secondary school there are 123 pupils, 27 teachers and 23 persons of another staff; in the kindergarten there are 18 children and 3 persons of another staff.

Children from following settlements go to the Kozelye kindergarten and secondary school: Yachnaya-Buda, Krasnopolye, Kholmy, Buglai, Romanki, Gorki and Soboli.

October 01, 2009

The first measurement of children in the Kozelye kindergarten and secondary school of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 137 persons (118 children and 19 adults).

Average ^{137}Cs specific activity in the whole group (n = 118): (56.7 ± 3.1) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (132.5 ± 7.1) Bq/kg.

Median value in the whole group: 47.0 Bq/kg.

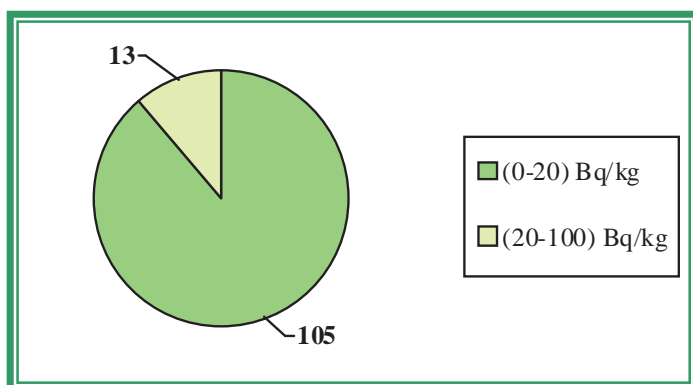
Median value in the critical group: 128.1 Bq/kg.

The table 2 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to October 01, 2009.

Table 2

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	A.V.I.	SCHOOLBOY	F	63	1996	189.6
2.	P.V.A.	SCHOOLBOY	M	35	1998	174.4
3.	S.A.F.	SCHOOLGIRL	F	53	1994	156.8
4.	A.E.M.	SCHOOLGIRL	F	63	1994	149.0
5.	P.M.A.	SCHOOLGIRL	F	44	1995	141.4
6.	T.A.A.	SCHOOLGIRL	F	58	1993	137.1
7.	N.A.M.	SCHOOLBOY	M	40	1995	132.0
8.	S.V.S.	SCHOOLBOY	M	40	1998	128.1
9.	S.A.S.	SCHOOLBOY	M	42	1996	128.0
10.	K.D.I.	SCHOOLBOY	M	42	1996	123.9
11.	Ya.V.I.	SCHOOLBOY	M	31	1997	122.0
12.	F.K.M.	SCHOOLBOY	F	57	1995	116.2
13.	K.A.V.	SCHOOLBOY	M	26	2002	110.9
14.	R.V.M.	SCHOOLBOY	M	21	2001	89.5
15.	M.A.S.	SCHOOLBOY	M	66	1993	89.2

The figure 1 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009.



← Figure 1 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009

On February 22, 2010 282 packings of the pectin preparation VITAPECT were given for children.

April 07, 2010

The second measurement of children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 136 persons (123 children and 13 adults).

Average ^{137}Cs specific activity in the whole group (n = 123): (36.0 ± 6.0) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (138.9 ± 40.5) Bq/kg.

Median value in the whole group: 21.5 Bq/kg.

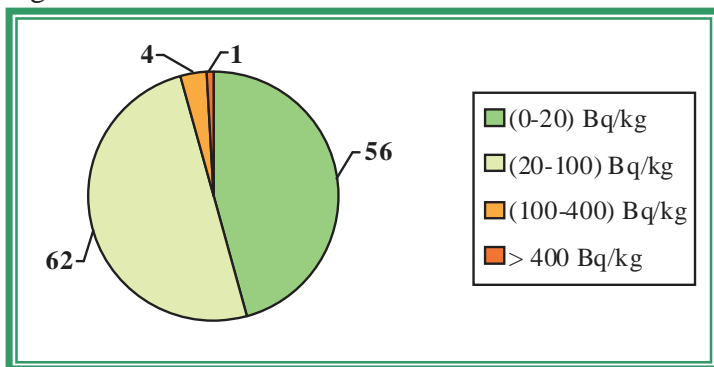
Median value in the critical group: 75.3 Bq/kg.

The table 3 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to April 07, 2010.

Table 3

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	Z.A.V.	SCHOOLBOY	M	67	1995	634.1
2.	K.A.V.	SCHOOLBOY	M	34	1999	306.7
3.	K.V.V.	SCHOOLBOY	M	27	2001	252.8
4.	K.A.V.	SCHOOLBOY	M	25	2002	127.7
5.	P.V.A.	SCHOOLBOY	M	38	1998	105.2
6.	A.A.S.	SCHOOLBOY	M	68	1994	98.0
7.	N.A.S.	SCHOOLBOY	M	53	1997	93.4
8.	A.V.I.	SCHOOLGIRL	F	68	1996	75.3
9.	A.E.M.	SCHOOLGIRL	F	61	1994	72.7
10.	P.V.I.	CHILD PRESCHOOL AGE	F	19	2005	62.5
11.	M.D.S.	CHILD PRESCHOOL AGE	M	14	2006	59.7
12.	P.M.A.	SCHOOLGIRL	F	50	1995	50.3
13.	M.D.M.	SCHOOLBOY	M	36	1999	49.6
14.	Sh.L.F.	CHILD PRESCHOOL AGE	F	15	2004	48.6
15.	A.Z.I.	SCHOOLBOY	M	28	2002	47.3

The figure 2 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 07, 2010.



←Figure 2 – Diagram of the interval ^{137}Cs specific activity distribution in children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 07, 2010

To demonstrate the efficiency of the effects of pectin preparations there are comparative data on interval distribution of the specific activity of ^{137}Cs in children having taken VITAPECT and having passed two WBC measurements (on October 01, 2009 and April 07, 2010). This group consists of 94 children.

October 01, 2009

April 07, 2010

The first measurement of children in the Kozelye kindergarten and secondary school of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 137 persons (118 children and 19 adults).

The second measurement of children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 136 persons (123 children and 13 adults).

The data of statistical processing of the results of measurements of the group of children having passed two WBC measurements and having taken VITAPECT-T (94 children).

Average specific activity of ^{137}Cs :

after the first measurement: (55.7 ± 3.5) Bq/kg,

after the second measurement: (36.7 ± 7.5) Bq/kg.

Decrease of average specific activity of ^{137}Cs was 34%.

Increase of specific activity: in 9% children.

The same level of specific activity: in 5% children.

Reduction of specific activity: in 86% children.

The evaluation of the scientific significance according to T-Student criterion ($n = 94$): $t=3.25$. The received criterion $t > 1.96$; $p < 0.01$.

Median value after the first measurement: 46.3 Bq/kg.

Median value after the second measurement: 21.0 Bq/kg.

Decrease of median value of specific activity of ^{137}Cs was 54%.

The figure 3 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009 and April 07, 2010.

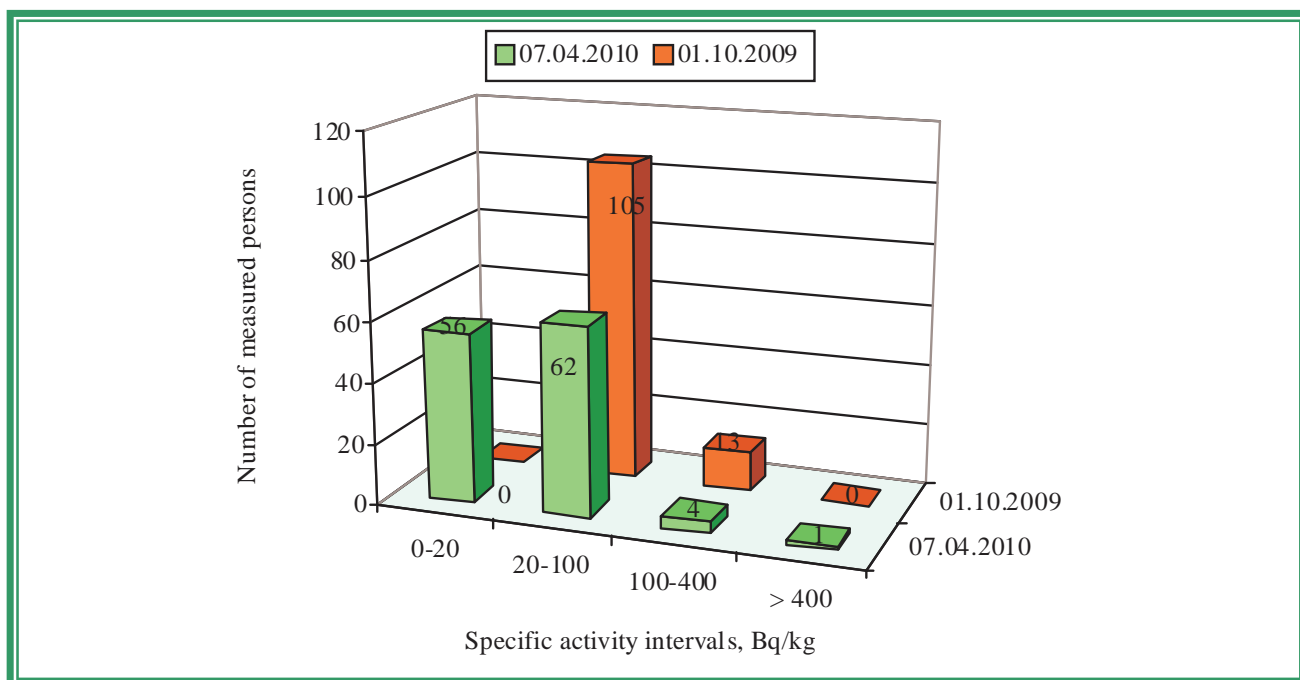


Figure 3 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Kozelye secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009 and April 07, 2010

KORMA, SECONDARY SCHOOL No. 2, GYMNASIUM

Characteristics	Value	Source
^{137}Cs contamination density of the territory	11.52 Ci/km ²	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Number of inhabitants	7500 persons	Korma district executive committee, dated to 01.01.2008
External dose	1.38 mSv/a	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Internal dose	0.30 mSv/a	-----<-----
Cumulative dose	1.68 mSv/a	-----<-----

According to the data dated to September 2009 in the Korma secondary school No.2 there are 493 pupils, 48 teachers and 18 persons of another staff; in the gymnasium there are 108 children.

September 22-25, 2009

The first measurement of children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region was performed in the school building. A total of measured persons was 498 persons (475 children and 23 adults).

Average ^{137}Cs specific activity in the whole group (n = 475): (59.9 ± 1.6) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 30): (149.3 ± 15.0) Bq/kg.

Median value in the whole group: 53.7 Bq/kg.

Median value in the critical group: 121.4 Bq/kg.

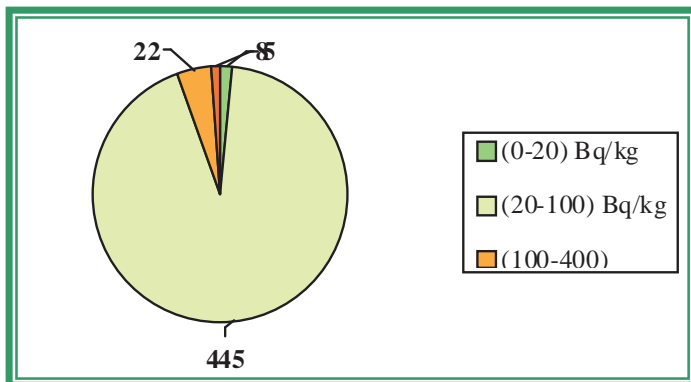
The table 4 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to September 22-25, 2009.

Table 4

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	R.E.V.	SCHOOLGIRL	F	32	1999	391.6
2.	P.S.S.	SCHOOLBOY	M	87	1996	372.0
3.	P.R.A.	SCHOOLBOY	M	31	1998	363.1
4.	S.N.V.	SCHOOLBOY	M	58	1995	208.0
5.	Sh.E.V.	SCHOOLGIRL	F	44	1996	204.4
6.	R.E.N.	SCHOOLBOY	M	29	1997	158.6
7.	G.T.N.	SCHOOLGIRL	F	58	1997	158.5
8.	G.R.A.	SCHOOLBOY	M	42	1997	152.7
9.	R.K.V.	SCHOOLBOY	M	38	1996	152.7
10.	T.E.A.	SCHOOLGIRL	F	27	2002	136.8
11.	Sh.G.L.	SCHOOLGIRL	F	48	1994	135.2
12.	J.D.A.	SCHOOLBOY	M	56	1994	129.6
13.	P.P.V.	SCHOOLBOY	M	46	1997	126.0
14.	Sh.Yu.A.	SCHOOLGIRL	F	55	1995	124.6
15.	T.A.A.	SCHOOLGIRL	F	44	1999	123.1
16.	Z.T.M.	SCHOOLGIRL	F	68	1993	119.7
17.	D.E.A.	SCHOOLGIRL	F	26	1999	118.4
18.	Z.M.N.	SCHOOLBOY	M	54	1996	113.0
19.	P.K.V.	CHILD PRESCHOOL AGE	F	17	2003	110.1
20.	P.D.A.	SCHOOLBOY	M	29	1998	103.0
21.	S.K.N.	CHILD PRESCHOOL AGE	F	21	2003	101.7
22.	M.A.V.	SCHOOLGIRL	F	67	1994	100.1

23.	T.A.V.	SCHOOLGIRL	F	25	2002	99.6
24.	D.S.A.	SCHOOLGIRL	F	38	1995	98.9
25.	I.N.N.	SCHOOLBOY	M	55	1994	98.4
26.	L.K.S.	SCHOOLBOY	M	26	2002	97.9
27.	K.V.A.	SCHOOLBOY	M	44	1998	97.3
28.	K.Ya.S.	SCHOOLBOY	M	28	2000	96.2
29.	R.A.S.	CHILD PRESCHOOL AGE	F	20	2003	94.9
30.	G.A.A.	SCHOOLBOY	M	33	2001	93.7

The figure 4 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region in accordance with the results of measurements dated to September 22-25, 2009.



← Figure 4 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region in accordance with the results of measurements dated to September 22-25, 2009

On February 22, 2010 1036 packings of the pectin preparation VITAPECT were given for children.

April 15-16, 2010

The second measurement of children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region was performed in the school building. A total of measured persons was 274 persons (265 children and 9 adults).

Average ^{137}Cs specific activity in the whole group (n = 265): (20.3 ± 0.9) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 30): (47.9 ± 5.4) Bq/kg.

Median value in the whole group: 17.8 Bq/kg.

Median value in the critical group: 33.2 Bq/kg.

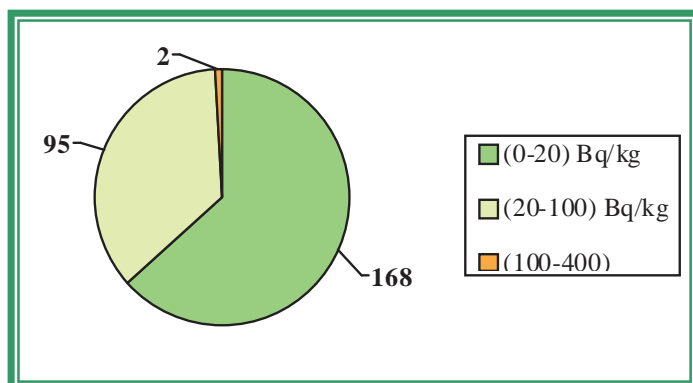
The table 5 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to April 15, 2010 and April 16, 2010.

Table 5

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	H.E.M.	SCHOOLBOY	M	37	1998	151.7
2.	J.R.S.	SCHOOLBOY	M	36	1998	115.1
3.	J.D.A.	SCHOOLBOY	M	60	1994	97.9
4.	Ch.J.I.	SCHOOLGIRL	F	50	1995	92.8
5.	B.V.V.	SCHOOLBOY	M	52	1995	60.5
6.	Z.D.S.	SCHOOLBOY	M	66	1993	60.3
7.	R.E.V.	SCHOOLGIRL	F	40	1999	55.0
8.	S.A.I.	SCHOOLBOY	M	70	1993	52.7
9.	T.A.A.	SCHOOLGIRL	F	48	1999	49.8
10.	G.R.A.	SCHOOLBOY	M	50	1997	49.8
11.	Sh.E.V.	SCHOOLGIRL	F	46	1996	47.6
12.	P.R.A.	SCHOOLBOY	M	36	1998	40.9
13.	A.A.S.	SCHOOLBOY	M	73	1994	37.1
14.	K.A.S.	SCHOOLBOY	M	64	1995	36.5
15.	L.D.Yu.	SCHOOLBOY	M	40	1999	34.0
16.	K.A.V.	SCHOOLBOY	M	45	1999	32.5
17.	D.O.S.	SCHOOLGIRL	F	36	1998	32.2
18.	S.E.S.	SCHOOLBOY	M	40	1999	31.9

19.	L.Ya.S.	SCHOOLGIRL	F	58	1994	31.7
20.	R.K.V.	SCHOOLBOY	M	49	1996	31.6
21.	V.D.A.	SCHOOLBOY	M	30	1999	31.1
22.	B.D.A.	SCHOOLGIRL	F	27	1999	30.4
23.	M.O.N.	SCHOOLGIRL	F	44	1997	30.2
24.	P.A.V.	SCHOOLBOY	M	58	1992	30.2
25.	M.Yu.M.	SCHOOLBOY	M	67	1995	30.1
26.	Z.T.M.	SCHOOLGIRL	F	75	1993	29.3
27.	D.A.I.	SCHOOLBOY	M	35	1999	29.0
28.	K.T.I.	SCHOOLGIRL	F	51	1993	28.4
29.	M.A.Yu.	SCHOOLGIRL	F	32	1999	28.3
30.	Sh.D.A.	SCHOOLBOY	M	32	1999	28.2

The figure 5 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region in accordance with the results of measurements dated to April 15, 2010 and April 16, 2010.



←Figure 5 – Diagram of the interval ^{137}Cs specific activity distribution in children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region in accordance with the results of measurements dated to April 15, 2010 and April 16, 2010

To demonstrate the efficiency of the effects of pectin preparations there are comparative data on interval distribution of the specific activity of ^{137}Cs in children having taken VITAPECT and having passed two WBC measurements (from September 22, 2009 to September 25, 2009 and from April 15, 2010 to April 16, 2010). This group consists of 225 children.

September 22-25, 2009

April 15-16, 2010

The first measurement of children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region was performed in the school building. A total of measured persons was 498 persons (475 children and 23 adults).

The second measurement of children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region was performed in the school building. A total of measured persons was 274 persons (265 children and 9 adults).

The data of statistical processing of the results of measurements of the group of children having passed two WBC measurements and having taken VITAPECT-T (225 children).

Average specific activity of ^{137}Cs :

after the first measurement: (64.1 ± 2.6) Bq/kg,

after the second measurement: (20.9 ± 1.0) Bq/kg.

Decrease of average specific activity of ^{137}Cs was 66%.

Increase of specific activity: in 2% children.

The same level of specific activity: in 1% children.

Reduction of specific activity: in 97% children.

The evaluation of the scientific significance according to T-Student criterion ($n = 225$): $t=20.61$. The received criterion $t > 1.96$; $p < 0.01$.

Median value after the first measurement: 53.3 Bq/kg.

Median value after the second measurement: 17.5 Bq/kg.

Decrease of median value of specific activity of ^{137}Cs was 67%.

The figure 6 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region in accordance with the results of measurements performed to from September 22, 2009 to September 25, 2009 and from April 15, 2010 to April 16, 2010.

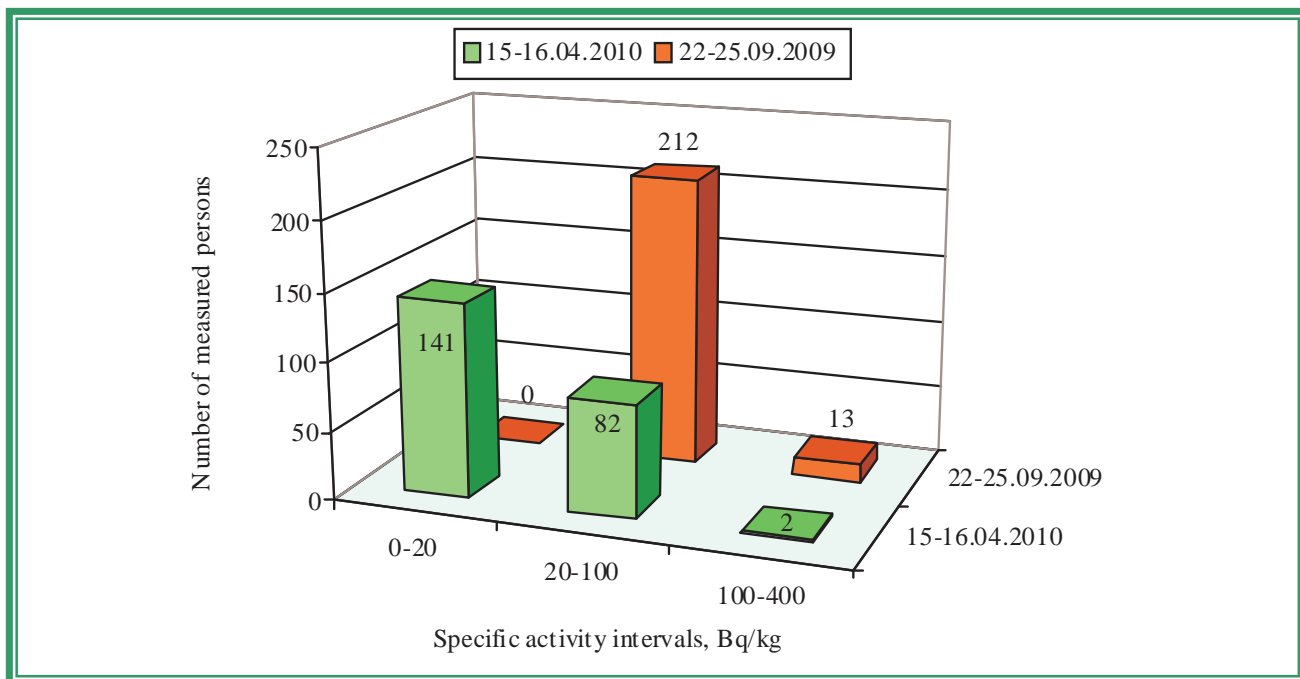


Figure 6 – Diagram of the interval ^{137}Cs specific activity distribution in children in the Korma secondary school No. 2 and Korma gymnasium of Gomel region in accordance with the results of measurements performed to from September 22, 2009 to September 25, 2009 and from April 15, 2010 to April 16, 2010

PALUZH

Characteristics	Value	Source
^{137}Cs contamination density of the territory	5.96 Ci/km ²	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Number of inhabitants	252 persons	-----<-----
External dose	0.71 mSv/a	-----<-----
Internal dose	0.40 mSv/a	-----<-----
Cumulative dose	1.11 mSv/a	-----<-----

According to the data dated to March 2009 in the Paluzh secondary school there are 79 children, 25 teachers and 27 persons of another staff; in the kindergarten there are 21 children and 11 persons of another staff.

September 29, 2009

The first measurement of children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 105 persons (79 children and 26 adults).

Average ^{137}Cs specific activity in the whole group (n = 79): (63.9 ± 3.3) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (107.1 ± 10.1) Bq/kg.

Median value in the whole group: 53.5 Bq/kg.

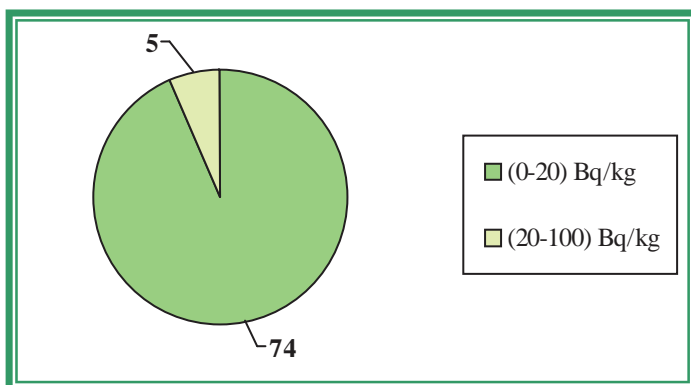
Median value in the critical group: 91.9 Bq/kg.

The table 6 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to September 29, 2009.

Table 6

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	L.E.P.	SCHOOLGIRL	F	55	1993	236.9
2.	S.A.S.	SCHOOLGIRL	F	52	1994	137.4
3.	K.N.S.	SCHOOLGIRL	F	57	1992	115.9
4.	E.T.I.	SCHOOLGIRL	F	45	1994	113.8
5.	A.P.A.	CHILD PRESCHOOL AGE	F	11	2007	112.7
6.	V.N.V.	SCHOOLGIRL	F	49	1994	94.6
7.	S.S.S.	SCHOOLBOY	M	51	1996	92.9
8.	A.T.M.	SCHOOLBOY	M	35	1998	91.9
9.	Sh.K.S.	SCHOOLGIRL	F	29	2000	91.6
10.	L.A.N.	CHILD PRESCHOOL AGE	F	16	2003	87.9
11.	K.M.S.	SCHOOLGIRL	F	43	1997	87.8
12.	Ch.I.N.	CHILD PRESCHOOL AGE	M	18	2004	86.3
13.	L.A.A.	SCHOOLGIRL	F	53	1996	85.6
14.	Ya.K.V.	CHILD PRESCHOOL AGE	M	17	2004	85.5
15.	B.A.A.	CHILD PRESCHOOL AGE	F	19	2005	85.5

The figure 7 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 29, 2009.



←Figure 7 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 29, 2009

On February 22, 2010 200 packings of the pectin preparation VITAPECT were given for children.

April 07, 2010

The second measurement of children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 85 persons (70 children and 15 adults).

Average ^{137}Cs specific activity in the whole group (n = 70): (33.3 ± 4.1) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (84.2 ± 11.3) Bq/kg.

Median value in the whole group: 25.8 Bq/kg.

Median value in the critical group: 74.6 Bq/kg.

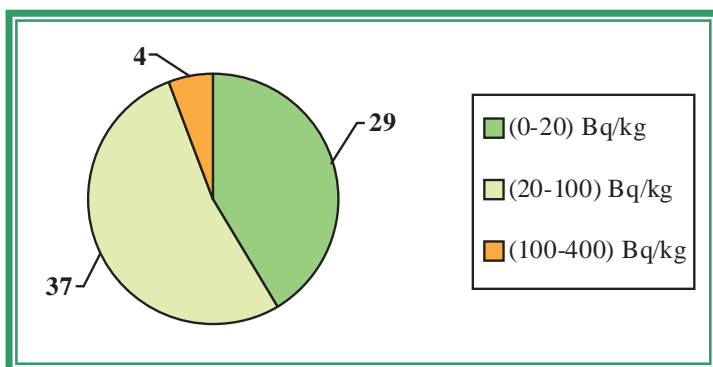
The table 7 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to April 07, 2010.

Table 7

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	Sh.K.S.	SCHOOLGIRL	F	30	2000	181.8
2.	A.V.S.	SCHOOLBOY	M	47	1997	156.0
3.	Sh.E.S.	SCHOOLGIRL	F	55	1994	131.5
4.	G.I.V.	SCHOOLGIRL	F	49	1996	111.2
5.	A.V.A.	SCHOOLBOY	M	25	2000	94.4
6.	L.M.P.	SCHOOLGIRL	F	27	2001	89.5
7.	A.N.Yu.	SCHOOLBOY	M	36	1999	75.6
8.	A.E.I.	SCHOOLGIRL	F	35	1998	74.6

9.	G.I.V.	SCHOOLGIRL	F	67	1993	64.1
10.	E.T.I.	SCHOOLGIRL	F	46	1994	63.6
11.	A.A.I.	SCHOOLBOY	M	29	2001	48.6
12.	A.M.S.	SCHOOLGIRL	F	19	2003	47.7
13.	A.T.I.	SCHOOLGIRL	F	40	1997	46.7
14.	G.E.A.	SCHOOLGIRL	F	24	2000	39.9
15.	K.M.A.	SCHOOLGIRL	F	25	2002	38.2

The figure 8 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 07, 2010.



← Figure 8 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 07, 2010

To demonstrate the efficiency of the effects of pectin preparations there are comparative data on interval distribution of the specific activity of ^{137}Cs in children having taken VITAPECT and having passed two WBC measurements (on September 29, 2009 and on April 07, 2010). This group consists of 58 children.

September 29, 2009 September 07, 2010

The first measurement of children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 105 persons (79 children and 26 adults).

The second measurement of children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 85 persons (70 children and 15 adults).

The data of statistical processing of the results of measurements of the group of children having passed two WBC measurements and having taken VITAPECT-T (58 children).

Average specific activity of ^{137}Cs :

after the first measurement: (60.8 ± 2.5) Bq/kg,

after the second measurement: (32.7 ± 4.3) Bq/kg.

Decrease of average specific activity of ^{137}Cs was 46%.

Increase of specific activity: in 12% children.

The same level of specific activity: in 2% children.

Reduction of specific activity: in 86% children.

The evaluation of the scientific significance according to T-Student criterion (n = 58): $t=8.02$. The received criterion $t > 1.96$; $p < 0.01$.

Median value after the first measurement: 54.9 Bq/kg.

Median value after the second measurement: 25.8 Bq/kg.

Decrease of median value of specific activity of ^{137}Cs was 53%.

The figure 9 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov

region in accordance with the results of measurements dated to September 29, 2009 and April 07, 2010.

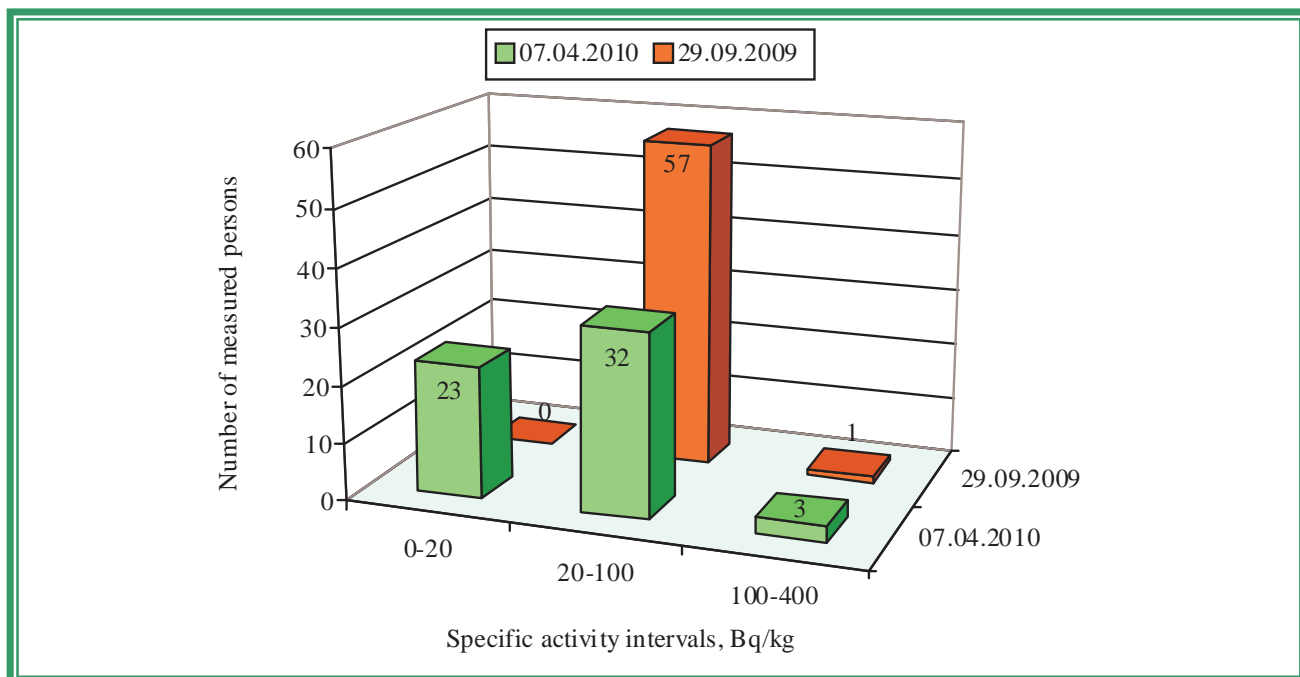


Figure 9 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Paluzh secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 29, 2009 and April 07, 2010

SOBOLI

Characteristics	Value	Source
^{137}Cs contamination density of the territory	8.55 Ci/km ²	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Number of inhabitants	84 persons	-----<-----
External dose	1.02 mSv/a	-----<-----
Internal dose	0.30 mSv/a	-----<-----
Cumulative dose	1.32 mSv/a	-----<-----

According to the data dated to October 2009 in the Soboli elementary school there are 13 children, 4 teachers and 9 persons of another staff.

Children from following settlements go to the Soboli elementary school: Vydrenka, Ovchinets, Krasnopolye and Berezuga.

October 01, 2009

The first measurement of children in the Soboli elementary school of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 33 persons (13 children and 20 adults).

Average ^{137}Cs specific activity in the whole group (n = 13): (65.3 ± 7.8) Bq/kg.

Median value in the whole group: 53.5 Bq/kg.

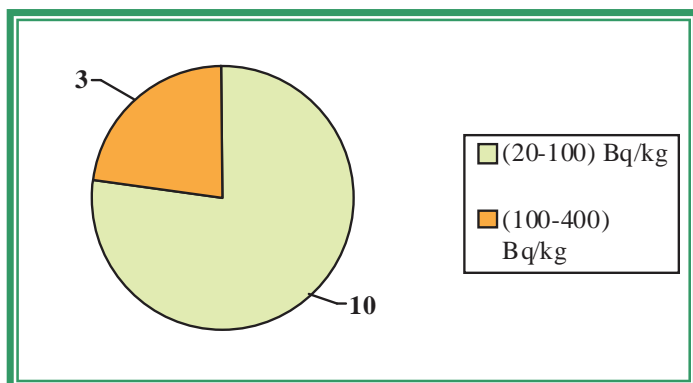
The table 8 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to October 01, 2009.

Table 8

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	K.A.S.	CHILD PRESCHOOL AGE	M	17	2005	110.6
2.	G.A.A.	CHILD PRESCHOOL AGE	M	18	2004	105.5

3.	M.Yu.V.	CHILD PRESCHOOL AGE	F	17	2004	101.4
4.	K.A.S.	CHILD PRESCHOOL AGE	M	15	2006	77.2
5.	Yu.Yu.P.	SCHOOLGIRL	F	29	2001	74.8
6.	K.P.L.	SCHOOLBOY	M	29	2002	66.1
7.	S.P.V.	CHILD PRESCHOOL AGE	F	22	2003	65.8
8.	K.L.L.	SCHOOLGIRL	F	22	2001	61.9
9.	S.E.V.	SCHOOLBOY	M	27	2001	50.3
10.	K.A.V.	SCHOOLGIRL	F	36	2001	41.1
11.	K.V.G.	SCHOOLGIRL	F	24	2000	34.4
12.	K.A.L.	SCHOOLGIRL	F	29	2001	33.6
13.	S.N.N.	SCHOOLGIRL	F	39	1999	25.9

The figure 10 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Soboli elementary school of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009.



←Figure 10 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Soboli elementary school of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009

On February 22, 2010 26 packings of the pectin preparation VITAPECT were given for children.

April 07, 2010

The second measurement of children in the Soboli elementary school of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 21 persons (14 children and 7 adults).

Average ^{137}Cs specific activity in the whole group (n = 14): (24.6 ± 2.6) Bq/kg.

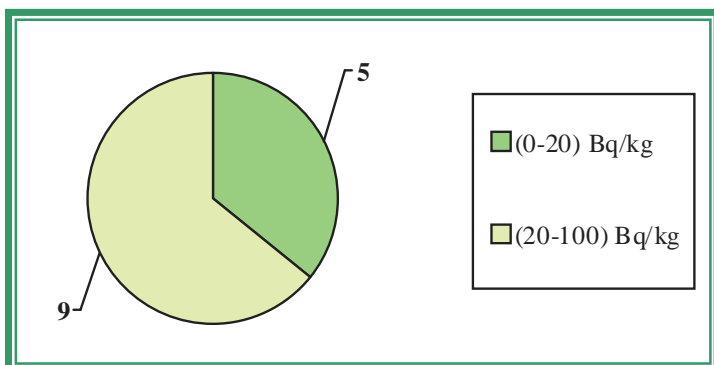
Median value in the whole group: 23.6 Bq/kg.

The table 9 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to April 07, 2010.

Table 9

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	K.A.S.	CHILD PRESCHOOL AGE	M	16	2006	45.1
2.	K.P.L.	SCHOOLBOY	M	30	2002	41.0
3.	K.M.S.	CHILD PRESCHOOL AGE	F	12	2007	31.2
4.	K.A.V.	SCHOOLGIRL	F	35	2001	27.7
5.	S.P.S.	SCHOOLGIRL	F	22	2003	26.9
6.	K.L.L.	SCHOOLGIRL	F	23	2001	25.0
7.	S.N.L.	SCHOOLGIRL	F	39	1999	24.0
8.	K.A.L.	SCHOOLGIRL	F	30	2001	23.1
9.	K.A.S.	CHILD PRESCHOOL AGE	M	18	2005	22.0
10.	G.A.A.	CHILD PRESCHOOL AGE	M	19	2004	18.9
11.	S.E.V.	SCHOOLBOY	M	27	2001	16.9
12.	Yu.Yu.P.	SCHOOLGIRL	F	29	2001	14.7
13.	S.A.Yu.	SCHOOLBOY	M	30	2002	14.2
14.	M.Yu.V.	CHILD PRESCHOOL AGE	F	18	2004	13.2

The figure 11 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Soboli elementary school of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 07, 2010.



← Figure 11 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Soboli elementary school of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 07, 2010

To demonstrate the efficiency of the effects of pectin preparations there are comparative data on interval distribution of the specific activity of ^{137}Cs in children having taken VITAPECT and having passed two WBC measurements (on October 01, 2009 and on April 07, 2010). This group consists of 12 children.

October 01, 2009

April 07, 2010

The first measurement of children in the Soboli elementary school of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 33 persons (13 children and 20 adults).

The second measurement of children in the Soboli elementary school of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 21 persons (14 children and 7 adults).

The data of statistical processing of the results of measurements of the group of children having passed two WBC measurements and having taken VITAPECT-T (12 children).

Average specific activity of ^{137}Cs :

after the first measurement: (67.8 ± 8.0) Bq/kg,

after the second measurement: (24.9 ± 2.8) Bq/kg.

Decrease of average specific activity of ^{137}Cs was 63%.

Increase of specific activity: in 0% children.

The same level of specific activity: in 8% children.

Reduction of specific activity: in 92% children.

The evaluation of the scientific significance according to T-Student criterion ($n = 12$): $t=7.15$. The received criterion $t > 1.96$; $p < 0.01$.

Median value after the first measurement: 65.9 Bq/kg.

Median value after the second measurement: 23.6 Bq/kg.

Decrease of median value of specific activity of ^{137}Cs was 64%.

The figure 12 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Soboli elementary school of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009 and April 07, 2010.

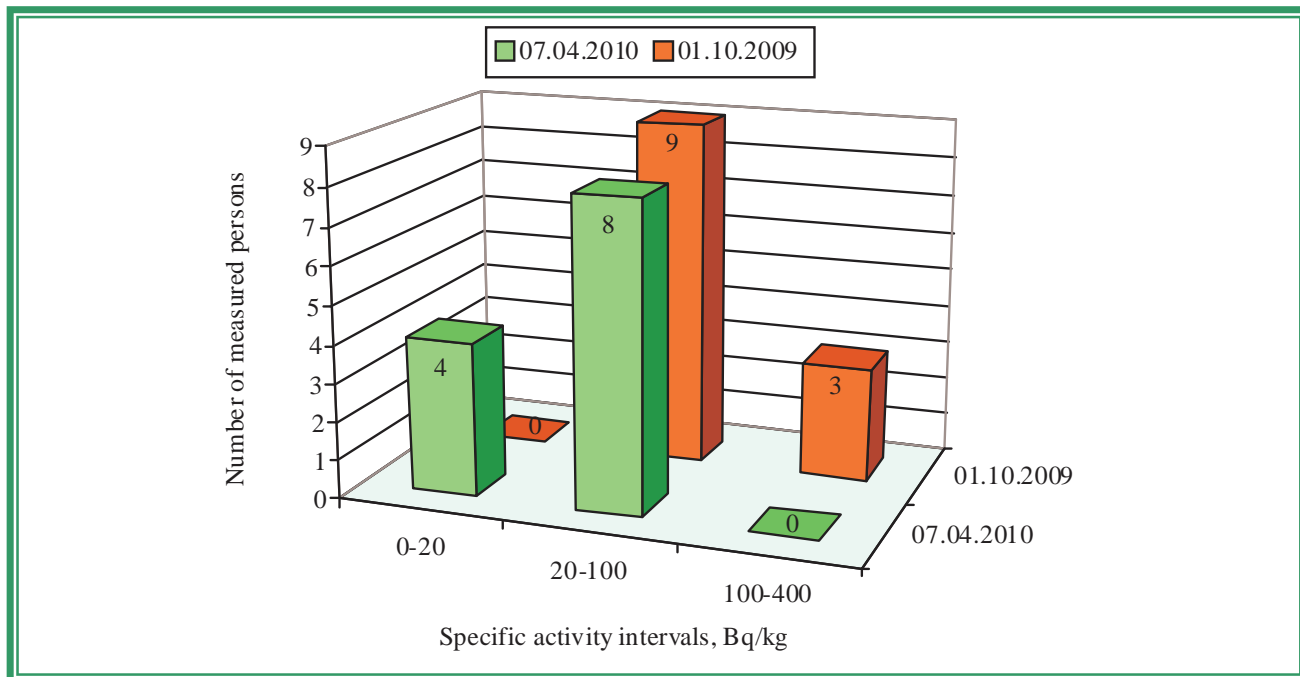


Figure 12 – Diagram of the interval ^{137}Cs specific activity distribution in children in the Soboli elementary school of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to October 01, 2009 and April 07, 2010

TURUYA

Characteristics	Value	Source
^{137}Cs contamination density of the territory	4.55 Ci/km ²	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Number of inhabitants	360 persons	Turya village council, dated to September 2008
External dose	0.54 mSv/a	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Internal dose	0.10 mSv/a	-----<-----
Cumulative dose	0.64 mSv/a	-----<-----

According to the data dated to September 2009 in the Turya kindergarten and secondary school there are 91 children, 18 teachers and 24 persons of another staff.

September 30, 2009

The first measurement of children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 79 persons (71 children and 8 adults).

Average ^{137}Cs specific activity in the whole group (n = 71): (28.8 ± 1.9) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (46.9 ± 2.4) Bq/kg.

Median value in the whole group: 31.6 Bq/kg.

Median value in the critical group: 43.7 Bq/kg.

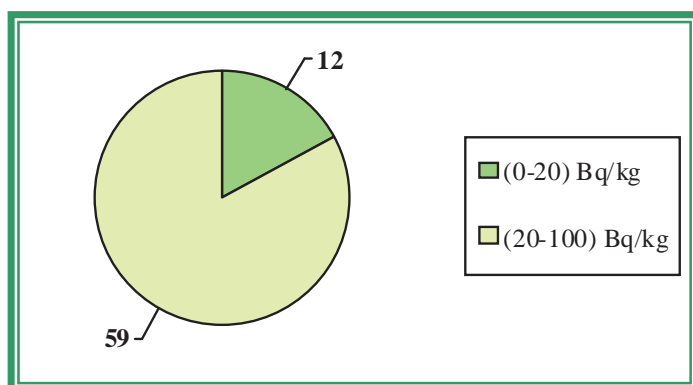
The table 10 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to September 30, 2009.

Table 10

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg

1.	Ya.A.A.	SCHOOLBOY	M	70	1993	76.2
2.	V.A.Yu.	SCHOOLGIRL	F	34	1996	52.3
3.	S.M.V.	SCHOOLBOY	M	65	1992	51.5
4.	L.E.M.	SCHOOLBOY	M	36	1998	51.0
5.	P.V.G.	SCHOOLBOY	M	62	1992	50.2
6.	K.A.S.	SCHOOLBOY	M	33	1999	48.6
7.	P.I.V.	SCHOOLBOY	M	47	1996	45.5
8.	M.E.V.	SCHOOLGIRL	F	60	1993	43.7
9.	V.V.Yu.	SCHOOLBOY	M	59	1995	42.8
10.	N.D.N.	SCHOOLBOY	M	38	1995	42.0
11.	K.D.S.	SCHOOLBOY	M	40	1998	41.8
12.	K.A.V.	SCHOOLGIRL	F	39	1999	40.3
13.	L.I.V.	SCHOOLGIRL	F	24	2002	39.9
14.	K.D.S.	SCHOOLGIRL	F	22	2002	39.2
15.	S.N.S.	SCHOOLGIRL	F	53	1995	39.2

The figure 13 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 30, 2009..



←Figure 13 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 30, 2009

On February 22, 2010 214 packings of the pectin preparation VITAPECT were given for children.

April 08, 2010

The second measurement of children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 86 persons (77 children and 9 adults).

Average ^{137}Cs specific activity in the whole group (n = 77): (14.8 ± 1.0) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (28.4 ± 1.5) Bq/kg.

Median value in the whole group: 12.3 Bq/kg.

Median value in the critical group: 26.0 Bq/kg.

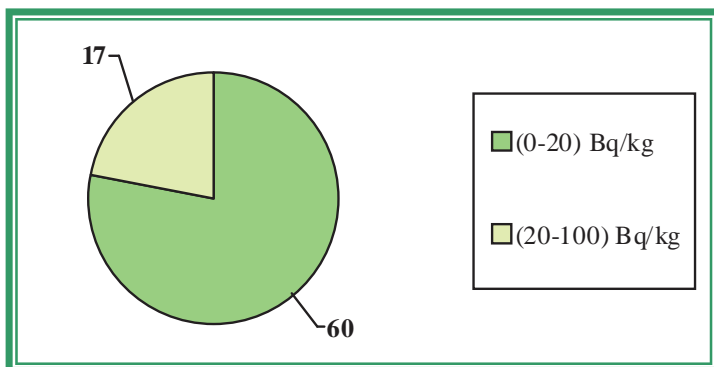
The table 11 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to April 08, 2010.

Table 11

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	T.M.O.	SCHOOLGIRL	F	20	2003	41.4
2.	K.N.V.	SCHOOLBOY	M	35	1997	36.8
3.	K.A.V.	SCHOOLGIRL	F	37	1998	32.2
4.	S.A.O.	SCHOOLGIRL	F	54	1997	32.1
5.	L.A.M.	SCHOOLGIRL	F	32	2000	32.0
6.	H.K.A.	CHILD PRESCHOOL AGE	F	18	2004	30.4
7.	S.M.S.	SCHOOLGIRL	F	70	1993	30.3
8.	K.A.V.	SCHOOLGIRL	F	32	2000	26.0
9.	K.M.V.	SCHOOLGIRL	F	31	1998	25.7
10.	G.N.N.	SCHOOLBOY	M	47	1997	24.9
11.	K.D.A.	SCHOOLBOY	M	27	2000	24.8
12.	Ya.A.A.	SCHOOLBOY	M	70	1993	22.7

13.	M.D.G.	SCHOOLBOY	M	44	1998	22.5
14.	S.N.S.	SCHOOLGIRL	F	54	1995	21.9
15.	V.M.V.	SCHOOLGIRL	F	61	1998	21.7

The figure 14 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 08, 2010.



←Figure 14 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to April 08, 2010

To demonstrate the efficiency of the effects of pectin preparations there are comparative data on interval distribution of the specific activity of ^{137}Cs in children having taken VITAPECT and having passed two WBC measurements (on September 30, 2009 and on April 08, 2010). This group consists of 55 children.

September 30, 2009 April 08, 2010

The first measurement of children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 79 persons (71 children and 8 adults).

The second measurement of children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 86 persons (77 children and 9 adults).

The data of statistical processing of the results of measurements of the group of children having passed two WBC measurements and having taken VITAPECT-T (55 children).

Average specific activity of ^{137}Cs :

after the first measurement: (30.8 ± 2.3) Bq/kg,

after the second measurement: (14.2 ± 1.1) Bq/kg.

Decrease of average specific activity of ^{137}Cs was 53%.

Increase of specific activity: in 14% children.

The same level of specific activity: in 4% children.

Reduction of specific activity: in 82% children.

The evaluation of the scientific significance according to T-Student criterion ($n = 55$): $t=9.08$. The received criterion $t > 1.96$; $p < 0.01$.

Median value after the first measurement: 31.8 Bq/kg.

Median value after the second measurement: 13.0 Bq/kg.

Decrease of median value of specific activity of ^{137}Cs was 59%.

The figure 15 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 30, 2009 and April 08, 2010.

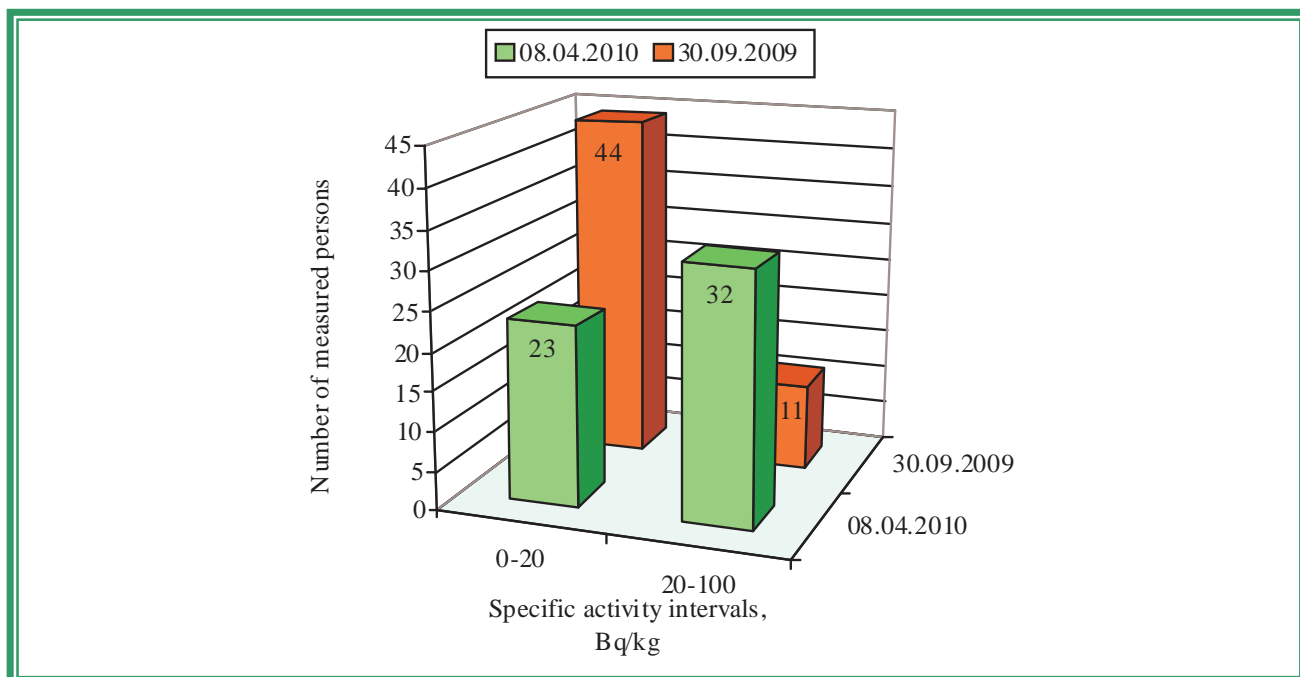


Figure 15 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Turya secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 30, 2009 and April 08, 2010

YANOVKA

Characteristics	Value	Source
^{137}Cs contamination density of the territory	4.12 Ci/km ²	Dose catalogue of the Ministry for Public Health Services of the Republic of Belarus, 2004
Number of inhabitants	440 persons	-----«-----
External dose	0.49 mSv/a	-----«-----
Internal dose	0.20 mSv/a	-----«-----
Cumulative dose	0.69 mSv/a	-----«-----

According to the data dated to September 2009 in the Janovka secondary school there are 96 pupils, 21 teachers and 37 persons of another staff; in the Janovka kindergarten there are 22 children and 5 persons of another staff.

September 29, 2009

The first measurement of children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 95 persons (83 children and 12 adults).

Average ^{137}Cs specific activity in the whole group (n = 83): (25.8 ± 1.2) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (42.4 ± 3.3) Bq/kg.

Median value in the whole group: 24.6 Bq/kg.

Median value in the critical group: 39.1 Bq/kg.

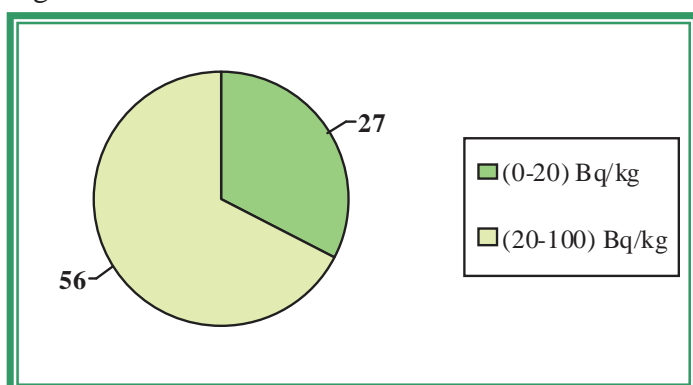
The table 12 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to September 29, 2010.

Table 12

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	F.E.N.	SCHOOLGIRL	F	55	1994	84.8
2.	O.A.D.	SCHOOLBOY	M	22	2001	50.6
3.	S.V.A.	SCHOOLGIRL	F	16	2001	48.3

4.	Ch.E.F.	SCHOOLBOY	M	40	1998	41.6
5.	P.D.V.	SCHOOLGIRL	F	24	2000	41.0
6.	K.P.V.	SCHOOLBOY	M	23	2000	40.7
7.	Ch.I.V.	SCHOOLBOY	M	24	2001	40.4
8.	L.A.N.	SCHOOLGIRL	F	54	1993	39.1
9.	Ch.M.F.	SCHOOLBOY	M	60	1995	38.2
10.	P.A.V.	SCHOOLBOY	M	28	2000	37.3
11.	B.A.A.	SCHOOLBOY	M	46	1997	36.5
12.	V.K.V.	SCHOOLBOY	M	34	1998	35.6
13.	E.V.V.	SCHOOLGIRL	F	25	2001	34.5
14.	V.O.V.	SCHOOLGIRL	F	34	1996	34.3
15.	V.D.V.	SCHOOLBOY	M	37	1998	33.8

The figure 16 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 29, 2009.



← Figure 16 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 29, 2009

On February 22, 2010 192 packings of the pectin preparation VITAPECT were given for children.

May 13, 2010

The second measurement of children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 96 persons (93 children and 6 adults).

Average ^{137}Cs specific activity in the whole group (n = 93): (26.8 ± 5.1) Bq/kg.

Average ^{137}Cs specific activity in the critical group (n = 15): (89.8 ± 26.8) Bq/kg.

Median value in the whole group: 16.3 Bq/kg.

Median value in the critical group: 43.4 Bq/kg.

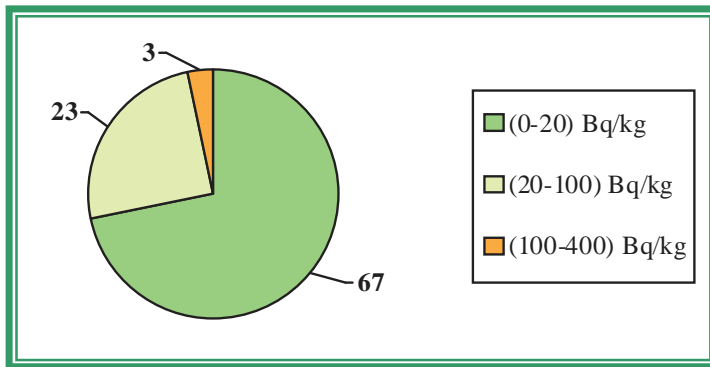
The table 13 demonstrates the maximal levels of ^{137}Cs specific activity (the critical group) according to the results of measurements dated to May 13, 2010.

Table 13

No.	Surname Name Patronymic	Occupation	Sex	Weight, kg	Year of birth	Sp. activity, Bq/kg
1.	Ch.A.A.	SCHOOLGIRL	F	32	2000	342.5
2.	Ch.M.A.	SCHOOLGIRL	F	19	2002	287.2
3.	E.A.A.	SCHOOLGIRL	F	58	1996	215.9
4.	Ch.A.V.	SCHOOLBOY	M	45	1999	89.1
5.	Ch.E.F.	SCHOOLBOY	M	45	1998	63.4
6.	V.D.V.	SCHOOLBOY	M	40	1998	53.3
7.	E.K.A.	SCHOOLBOY	M	31	2002	45.6
8.	K.E.M.	CHILD PRESCHOOL AGE	M	18	2005	43.4
9.	F.E.N.	SCHOOLGIRL	F	55	1994	34.9
10.	J.A.A.	SCHOOLBOY	M	23	2003	30.9
11.	P.A.V.	SCHOOLBOY	M	29	2000	30.0
12.	K.D.M.	CHILD PRESCHOOL AGE	F	22	2004	28.1
13.	P.D.V.	SCHOOLGIRL	F	26	2000	28.0
14.	V.N.N.	SCHOOLGIRL	F	68	1994	28.0

15.	J.I.A.	CHILD PRESCHOOL AGE	M	16	2005	27.1
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The figure 17 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to May 13, 2010.



← Figure 17 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to May 13, 2010

To demonstrate the efficiency of the effects of pectin preparations there are comparative data on interval distribution of the specific activity of ^{137}Cs in children having taken VITAPECT and having passed two WBC measurements (on September 29, 2009 and on May 13, 2010). This group consists of 72 children.

September 29, 2009

May 13, 2010

The first measurement of children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 95 persons (83 children and 12 adults)

The second measurement of children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region was performed in the school building. A total of measured persons was 96 persons (93 children and 6 adults).

The data of statistical processing of the results of measurements of the group of children having passed two WBC measurements and having taken VITAPECT-T (72 children).

Average specific activity of ^{137}Cs :

after the first measurement: (26.2 ± 1.3) Bq/kg,

after the second measurement: (24.1 ± 5.4) Bq/kg.

Decrease of average specific activity of ^{137}Cs was 8%.

Increase of specific activity: in 1% children.

The same level of specific activity: in 17% children.

Reduction of specific activity: in 82% children.

The evaluation of the scientific significance according to T-Student criterion ($n = 72$): $t=0.54$. The received criterion $t < 1.96$; $p > 0.01$.

Median value after the first measurement: 25.1 Bq/kg.

Median value after the second measurement: 14.6 Bq/kg.

Decrease of median value of specific activity of ^{137}Cs was 42%.

The figure 18 contains the diagram of the interval ^{137}Cs specific activity distribution in children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 2009 and May 13, 2010.

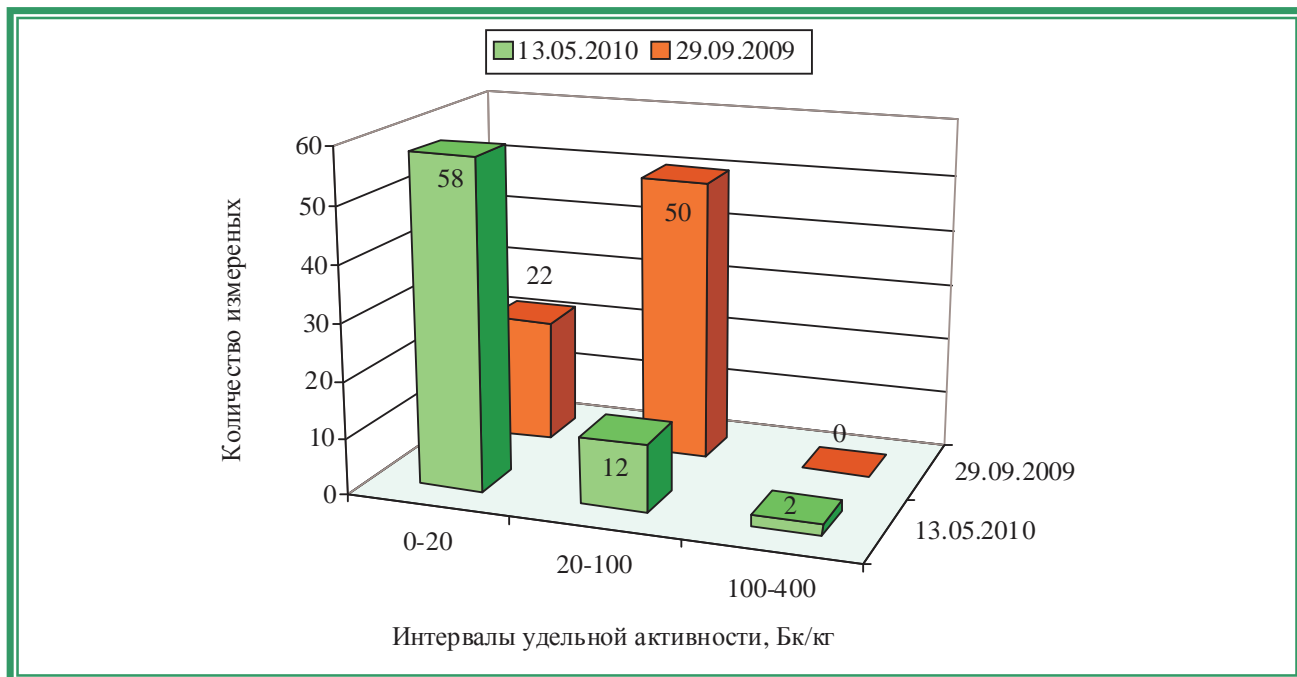


Figure 18 - Diagram of the interval ^{137}Cs specific activity distribution in children in the Janovka secondary school and kindergarten of Krasnopolye district of Mogilyov region in accordance with the results of measurements dated to September 2009 and May 13, 2010

Junior research assistant

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