



1.	Pb, Cd, Zn,	<sup>90</sup> Sr
<sup>137</sup> Cs		
	1	1.4
	8	-
	33	-
	-	28
	-	2412

6-PGDH ( . . 1.1.1.44), PGI ( . . 5.3.1.9) FDH ( . . 1.2.1.2)

6.4%-(Peacock et al., 1965). (Harris, Hopkinson, 1976).

( . . , 2005; Meirmans et al., 2003),

( ) , ( ) ,

: Est, Gdh, Got, 6-Pgdh, Pgi-1,2 Fdh.

5%.

( ) ,

( ) , 1991).

( ) ,

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1957 .

( . . . , 1990),

( ) .

<sup>90</sup>Sr. Gdh ( ) , Got (18

<sup>137</sup>Cs) 1967 .

(64-69%)

( . . 2).

( ) ,

(//)

30%, 17% - 24%

35%,

-28%.

<sup>90</sup>Sr <sup>137</sup>Cs ( . . 1).

( . . 2).

Got, Pgi-1 6-Pdgh

50-125 . ADH ( . . 1.1.1.1), FEST ( . . 3.1.1.1), GDH ( . . 1.4.1.2), GOT ( . . 2.6.1.1),

## 2.

			-	-	-	-
Pgi-1	1	0.06	0.05	0.01	0.06	0.29
Pgi-1	2	<b>0.92</b>	<b>0.88</b>	<b>0.76</b>	0.19	<b>0.55</b>
Pgi-1	3	0.02	0.07	0.23	<b>0.66</b>	0.04
Pgi-1	5	-	-	-	-	0.06
Pgi-1	6	-	-	-	0.04	0.04
Pgi-1	7	-	-	-	-	0.02
Pgi-1	8	-	-	-	0.02	-
Pgi-1	9	-	-	-	0.02	-
		64	120	91	47	49
Pgi-2	1	-	0.01	-	-	-
Pgi-2	2	<b>0.60</b>	<b>0.95</b>	<b>0.61</b>	<b>0.64</b>	<b>0.57</b>
Pgi-2	3	0.40	0.04	0.30	0.36	0.37
Pgi-2	4	-	-	0.01	-	-
Pgi-2	5	-	-	0.01	-	0.06
Pgi-2	6	-	-	0.07	-	-
		66	124	92	47	49
6-Pdgh	2	0.19	0.06	0.15	-	-
6-Pdgh	3	<b>0.67</b>	<b>0.93</b>	<b>0.61</b>	0.04	<b>0.61</b>
6-Pdgh	4	0.14	0.01	0.22	-	0.10
6-Pdgh	5	-	-	-	0.04	0.12
6-Pdgh	6	-	0.01	-	-	-
6-Pdgh	7	-	-	0.01	-	-
6-Pdgh	8	-	-	0.10	-	0.08
6-Pdgh	9	-	-	-	-	0.02
6-Pdgh	10	-	-	-	<b>0.81</b>	-
6-Pdgh	17	-	-	-	0.04	-
6-Pdgh	19	-	-	-	-	0.06
6-Pdgh	21	-	-	-	0.06	-
		52	121	72	47	49
Gdh	1	<b>1.00</b>	<b>1.00</b>	<b>1.00</b>	<b>0.96</b>	<b>1.00</b>
Gdh	2	0.00	0.00	0.00	0.04	0.00
		69	123	93	47	48
Fdh	1	-	0.01	0.06	-	-
Fdh	2	0.03	0.03	0.14	0.06	0.18
Fdh	3	<b>0.97</b>	<b>0.96</b>	<b>0.79</b>	<b>0.94</b>	<b>0.80</b>
Fdh	6	-	-	-	-	0.02
Fdh	7	-	-	0.01	-	-
		64	93	84	47	49
Est	1	<b>0.91</b>	<b>0.99</b>	<b>0.87</b>	<b>0.62</b>	<b>0.65</b>
Est	2	0.09	-	0.11	0.30	0.20
Est	4	-	0.01	0.02	-	-
Est	7	-	-	-	0.02	-
Est	8	-	-	-	-	0.02
Est	10	-	-	-	-	0.04
Est	12	-	-	-	0.04	-
Est	13	-	-	-	0.02	-
Est	14	-	-	-	-	0.06
Est	15	-	-	-	-	0.02
		69	124	92	47	49

2.

			-	-	-	-
Adh	2	-	0.07	0.06	-	-
Adh	3	-	-	0.02	-	0.15
Adh	4	<b>1.00</b>	<b>0.93</b>	<b>0.92</b>	<b>0.94</b>	<b>0.81</b>
Adh	5	-	-	-	-	0.04
Adh	6	-	-	-	0.04	-
Adh	7	-	-	-	0.02	-
		67	116	50	47	48
Got	1	<b>0.64</b>	-	0.08	-	-
Got	2	0.17	0.08	0.08	-	-
Got	3	0.06	0.01	0.02	-	-
Got	4	0.11	<b>0.56</b>	<b>0.70</b>	-	-
Got	5	0.02	0.05	0.02	-	-
Got	6	-	0.18	-	-	-
Got	7	-	0.05	-	<b>0.79</b>	0.16
Got	8	-	-	-	-	0.02
Got	9	-	-	-	-	0.02
Got	10	-	0.03	-	0.04	-
Got	11	-	-	-	0.02	-
Got	12	-	0.03	0.02	-	-
Got	13	-	-	0.08	-	-
Got	14	-	0.02	-	-	-
Got	15	-	-	-	0.09	0.02
Got	16	-	-	-	0.06	0.14
Got	17	-	-	-	-	<b>0.61</b>
Got	18	-	-	-	-	0.02
		53	120	49	47	49
		3	14	10	14	13

<5%).

Got.

: Pgi- Got (%<sup>2</sup> = 22.2-84.6; df = 7;

< 0.01 X<sup>2</sup> = 57.1-150.3; df= 17; < 0.01

( .1).

Gdh -

(%<sup>2</sup> 2.1 ( > 0.05)

5.3 ( < 0.01); df = 1).

Fdh ( <sup>2</sup> 0.7 ( > 0.05)

12.1 ( < 0.02); df= 4) Pgi-2 ( <sup>2</sup> 0.1

( < 0.02).

( > 0.05) 42.3 ( < 0.01); df= 5).

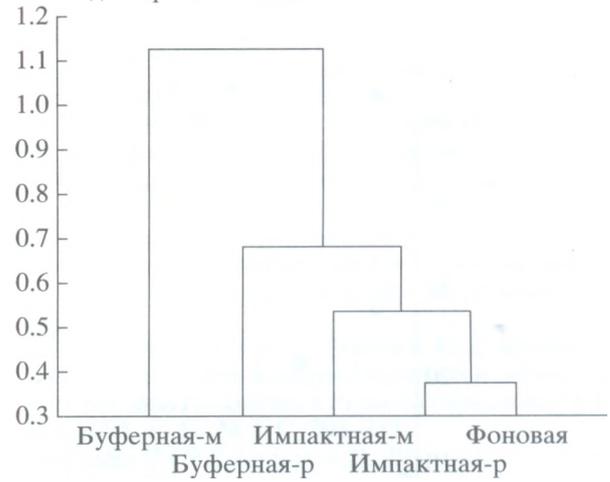
(. . 3).  
 ,  
 ,  
 waski et al., 1999; Keane et al., 2005). (Prus-Glo-

( , Fe, Ni)  
 (Rogstad et al., 2003).

(. ., 2006).

21 ( ),  
 ( . 2):  
 32 10  
 (78%);  
 82 (87%);  
 - 6 (42%).  
 2  
 ,  
 27.8% - 2 (53%  
 ).  
 13  
 ,  
 8 5  
 ( . . 2). , 20%.

Эвклидово расстояние



. 1.

72.3% , 34.7%.

(62.5-71.4%),

10%

20%.

3.

Pgi-1	1.78 ±0.18	2.02 ±0.13	2.12±0.14	4.00 ±0.41*	4.29 ±0.39*
Pgi-2	1.98 ±0.03	1.60 ±0.13*	3.23 ±0.25*	1.96 ±0.04	2.59±0.15*
6-Pgdh	2.64 ±0.14	1.92±0.18*	4.30 ± 0.20*	3.14 ±0.35	4.53 ±0.37*
Fdh	1.35 ± 0.12	1.59±0.16	2.62 ±0.21*	1.49 ±0.13	2.14±0.19*
Est	1.56 ± 0.10	1.18 ±0.09*	1.99±0.15	3.35 ±0.34*	3.98 ±0.41*
Gdh	1	1	1	1.40±0.13*	1
Adh	1	1.51 ±0.08*	1.81 ±0.21*	1.74 ±0.22*	2.21 ±0.19*
Got	3.71 ±0.30	6.06 ± 0.39*	4.49 ±0.48	3.18 ±0.35	4.56 ± 0.48

\* ( < 0.02; ?<sub>St</sub> = 2.2-7.4 df> 45).

