

MONITORING OF TICK-BORNE INFECTIONS NATURAL FOCI

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F.tularensis

**Tick-borne encephalitis
virus**

Babesia

**Ehrlichia muris,
chaffeensis**

B. burgdorferi sl

Rickettsia

Anaplasma phagocytophillum

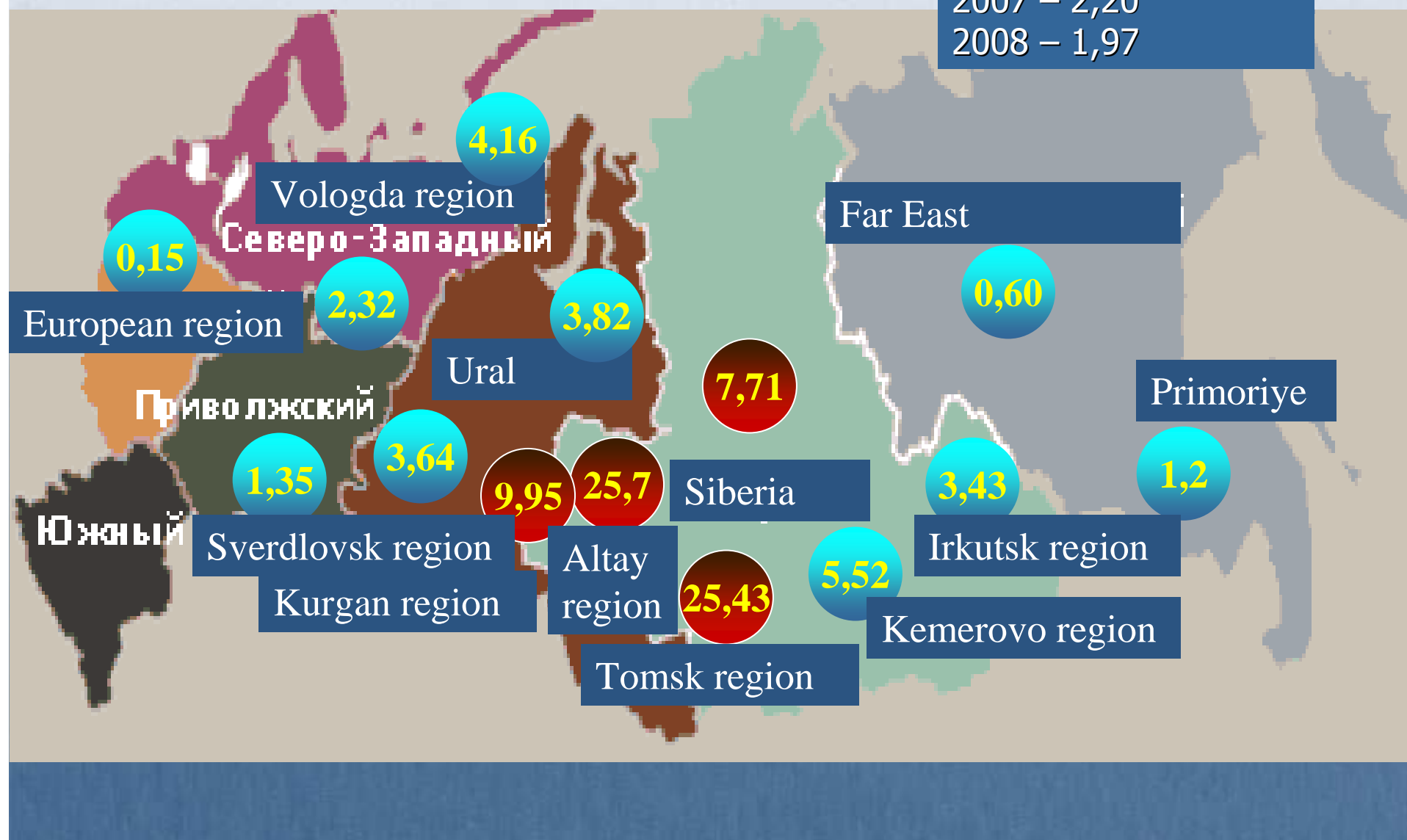
C.burnetii

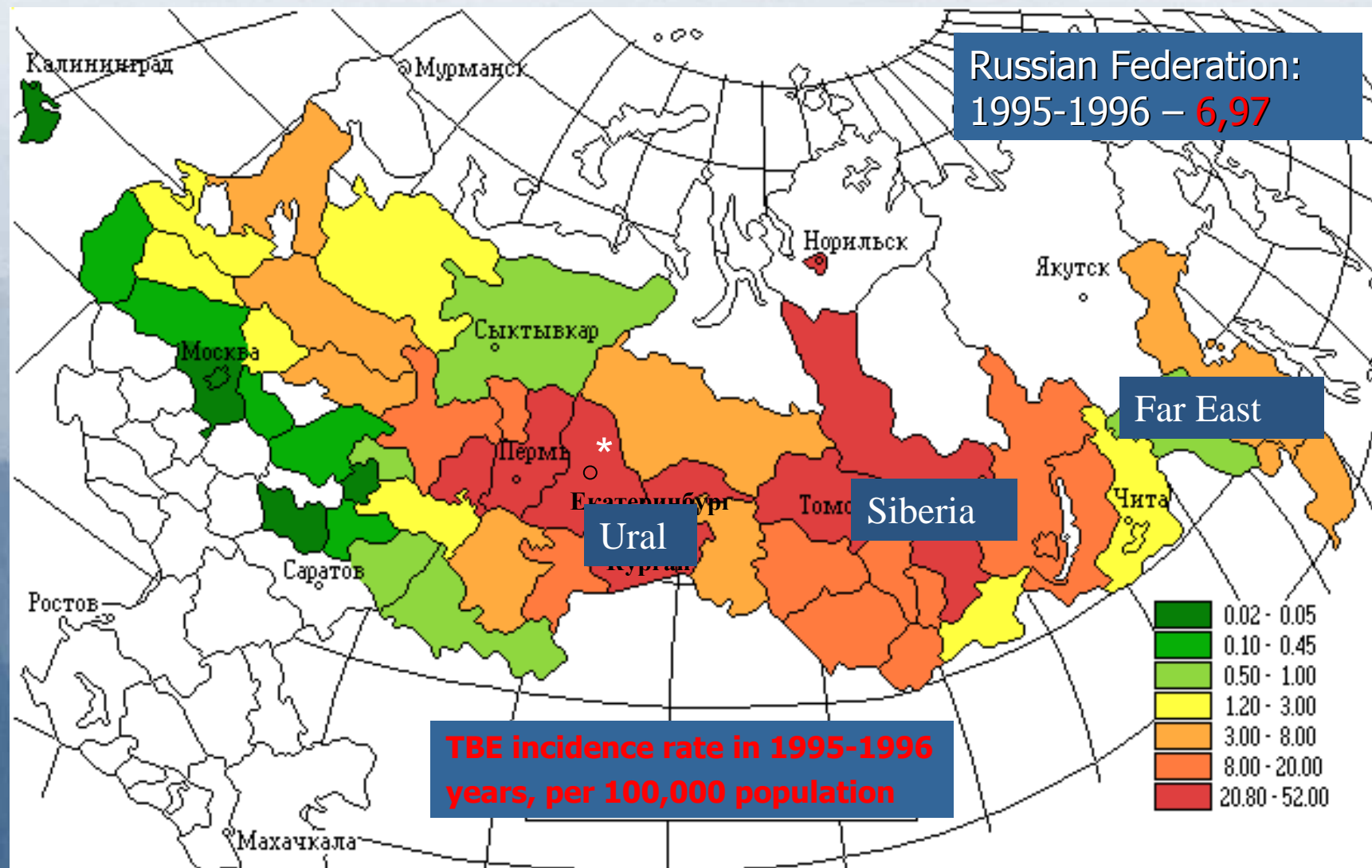
A photograph of a forest path. The path is a narrow, light-colored trail that winds through a dense forest. Tall, slender trees with green needles line both sides of the path. Sunlight filters through the canopy, creating bright patches on the path and casting long, dark shadows. The ground is covered with green grass and some autumn-colored foliage. The overall atmosphere is peaceful and natural.

TICK-BORNE ENCEPHALITIS VIRUS

TBE incidence rate in last years, per 100,000 population

Russian Federation:
2007 – 2,20
2008 – 1,97



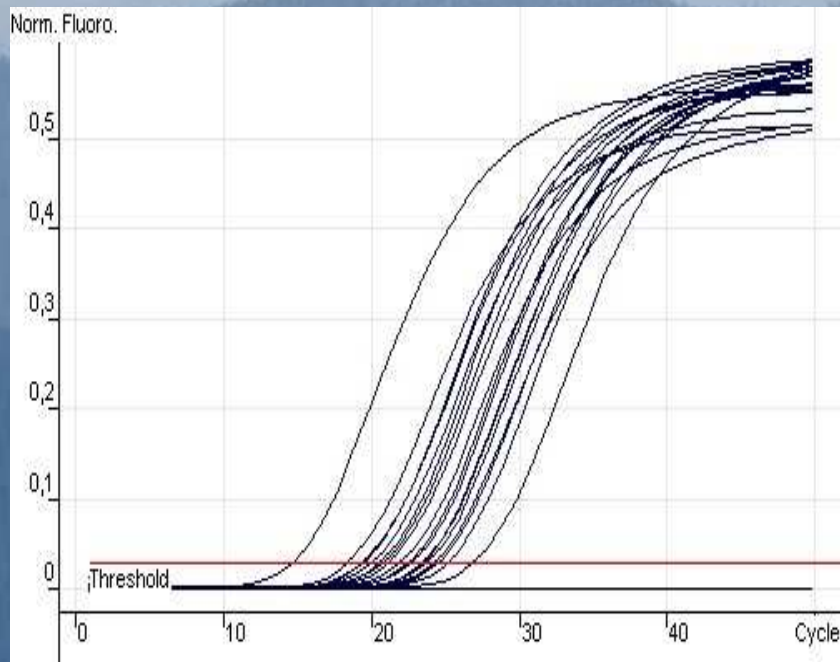


Ural – 42,2%
Western Siberia– 32,2%
Eastern Siberia – 17,4%

Detection of TBE virus RNA by real-time PCR

We have studied approximately 400 strains TBE virus and 4000 ticks from 8 endemic regions of Russia (European region, Ural, Volga region, Western Siberia, Eastern Siberia)

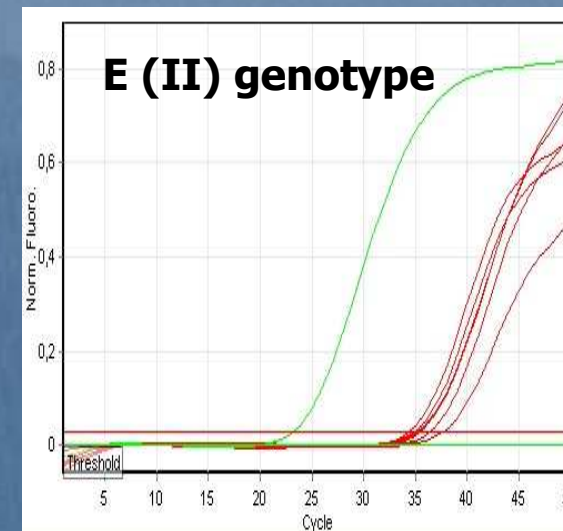
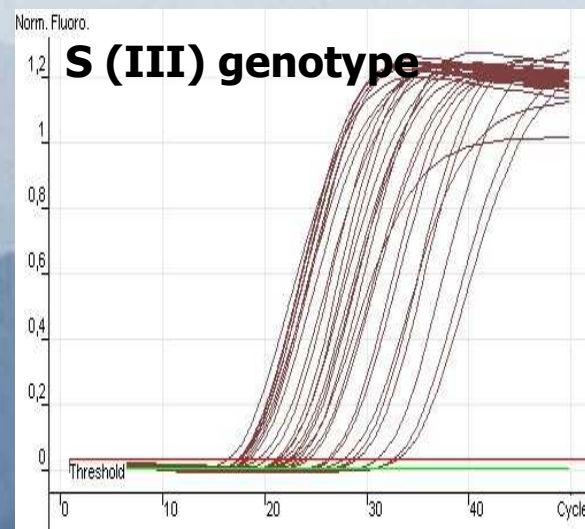
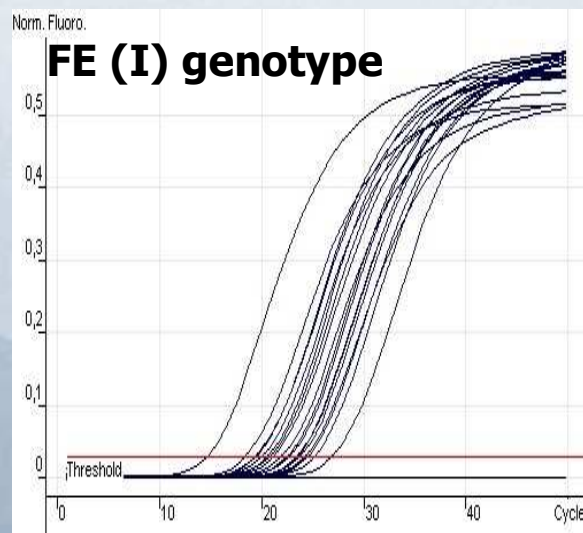
Sensitivity is 10^3 copies/ml



Rotor-Gene 3000/6000

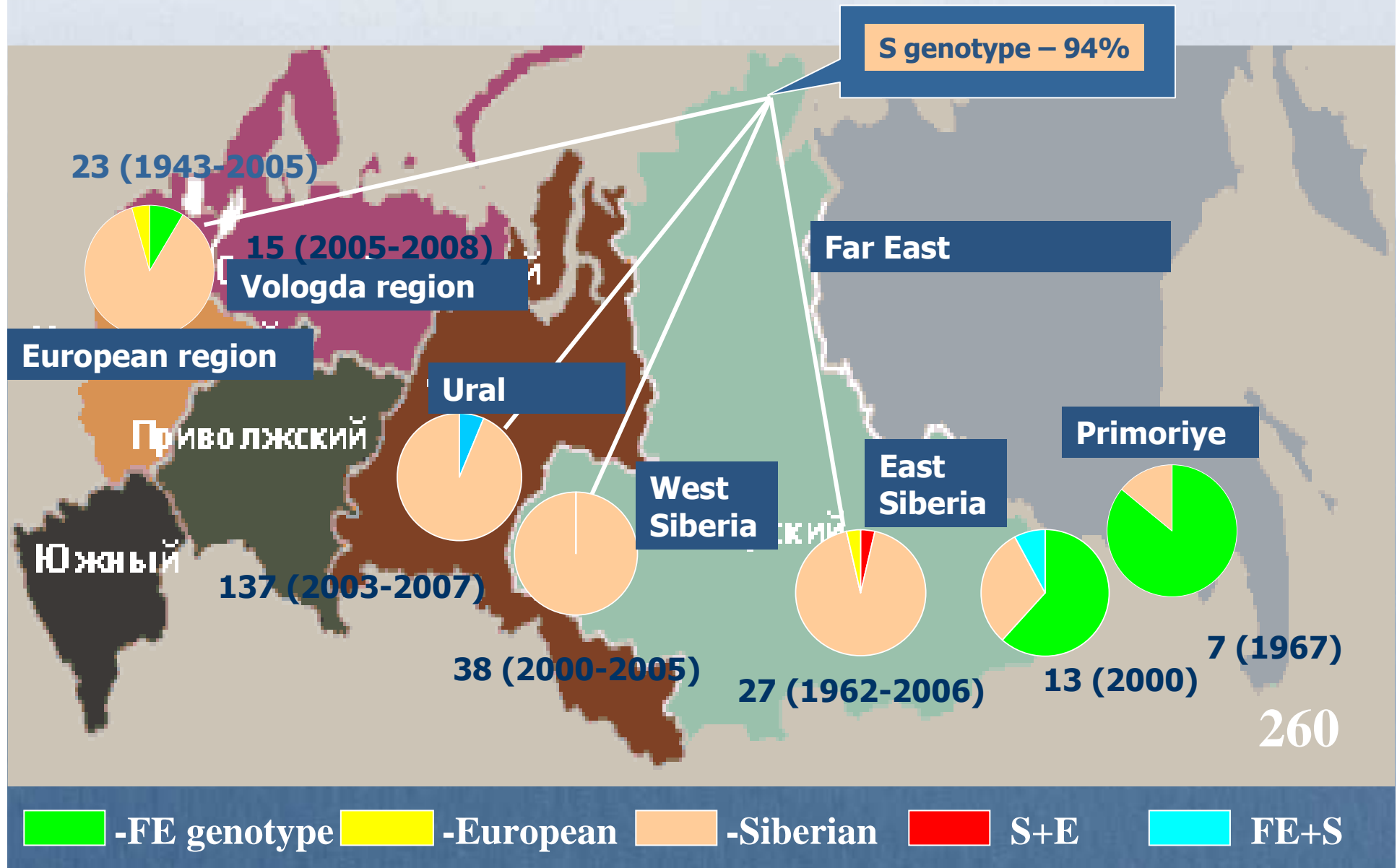


Real-time PCR for genotyping TBE virus

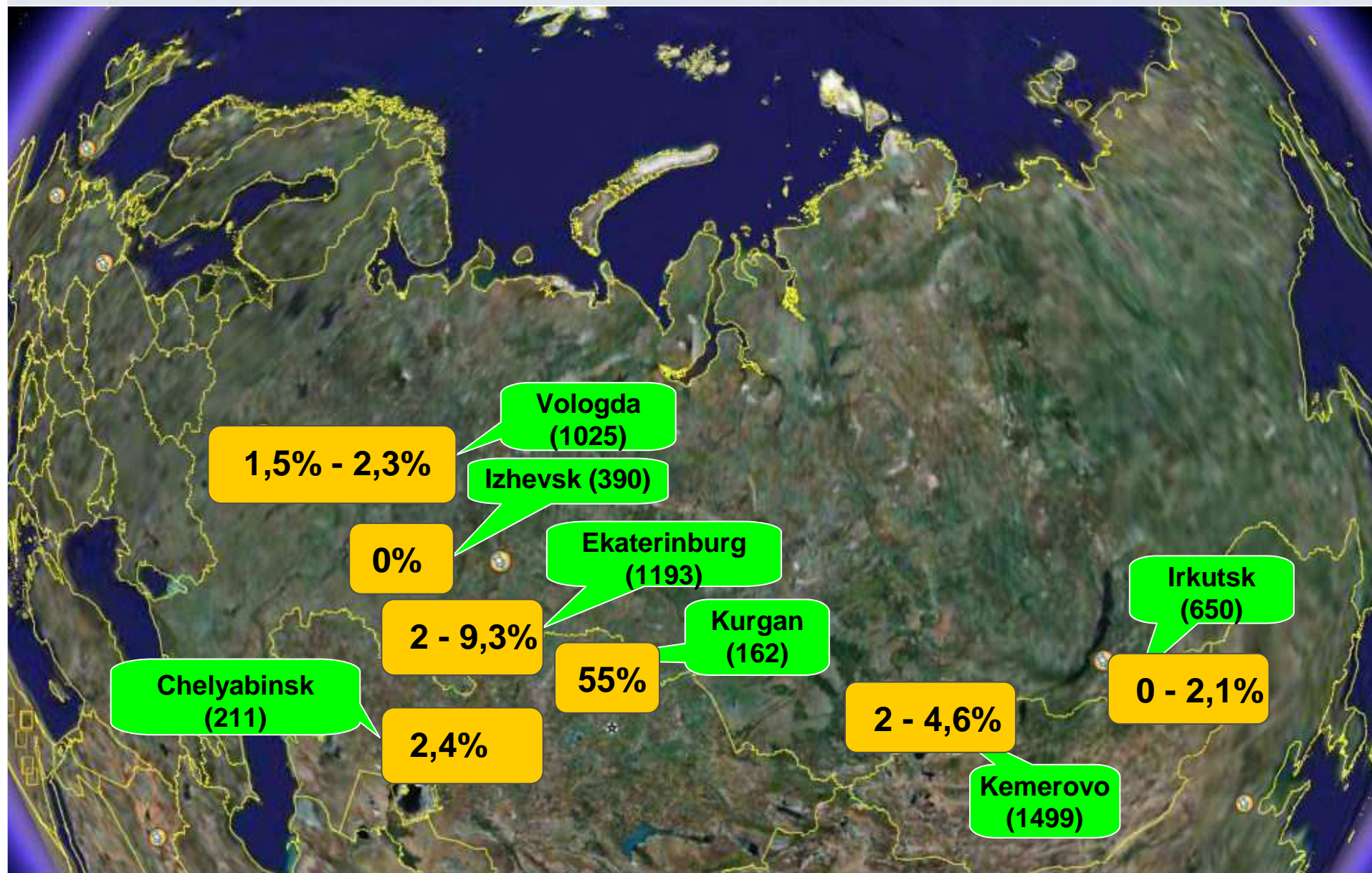


We have studied approximately 300 strains
and RNA isolates TBE virus

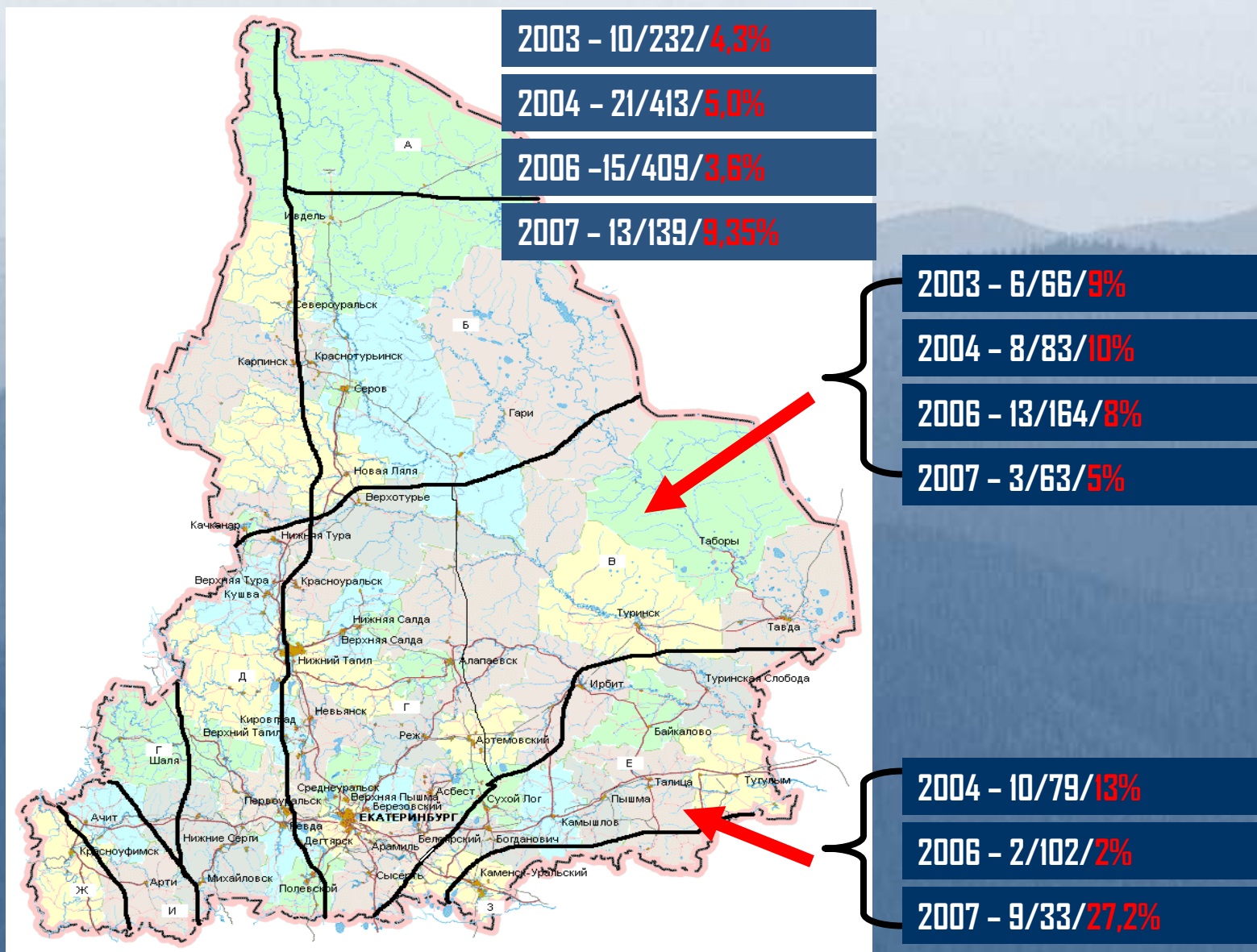
Distribution of TBE genotypes along studied regions



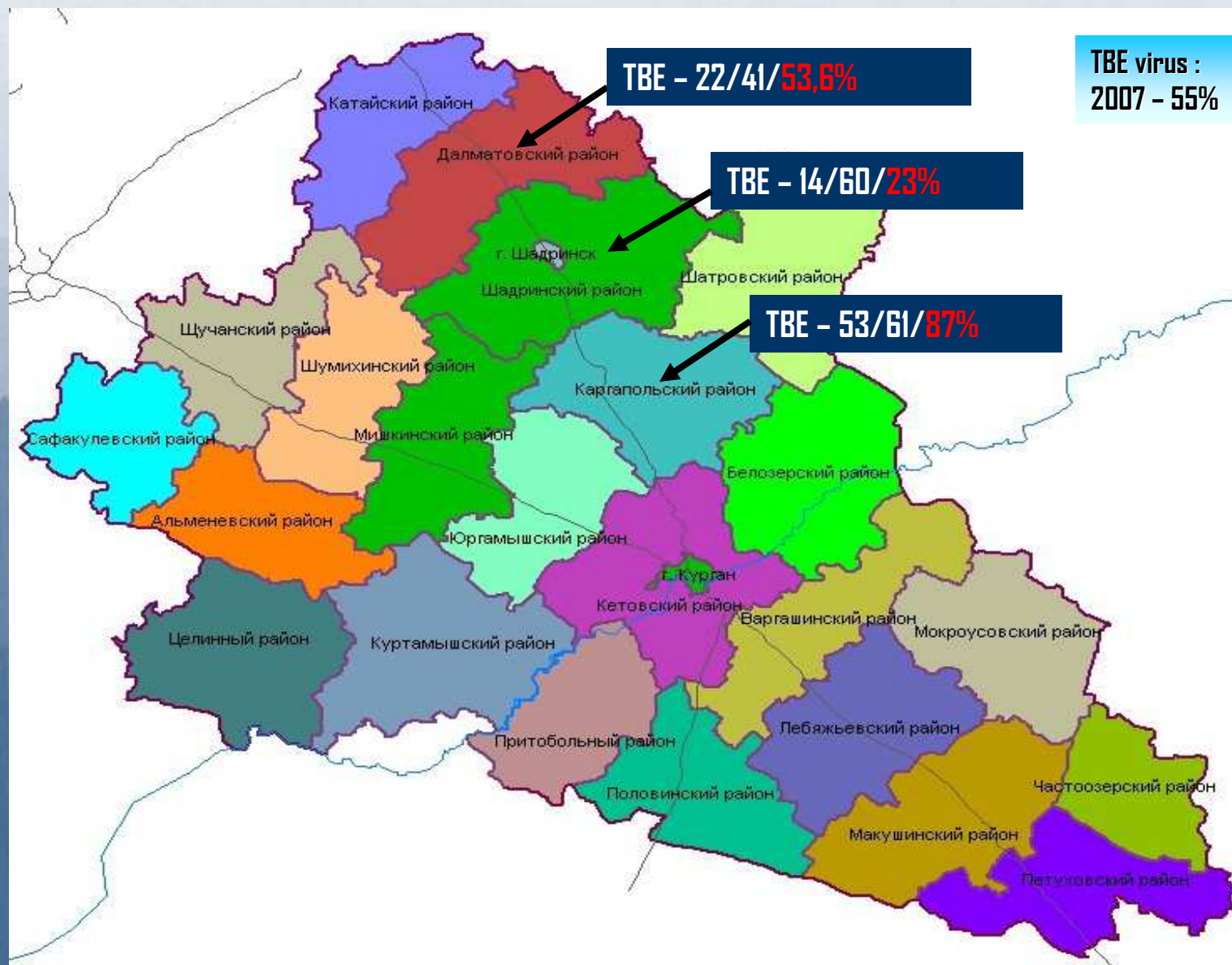
Detection of TBE virus in ticks *I.persulcatus* along studied regions Russia (2003-2008)



Prevalence of TBE virus in ticks *I.persulcatus* in natural foci of Sverdlovsk region (2003-2007)

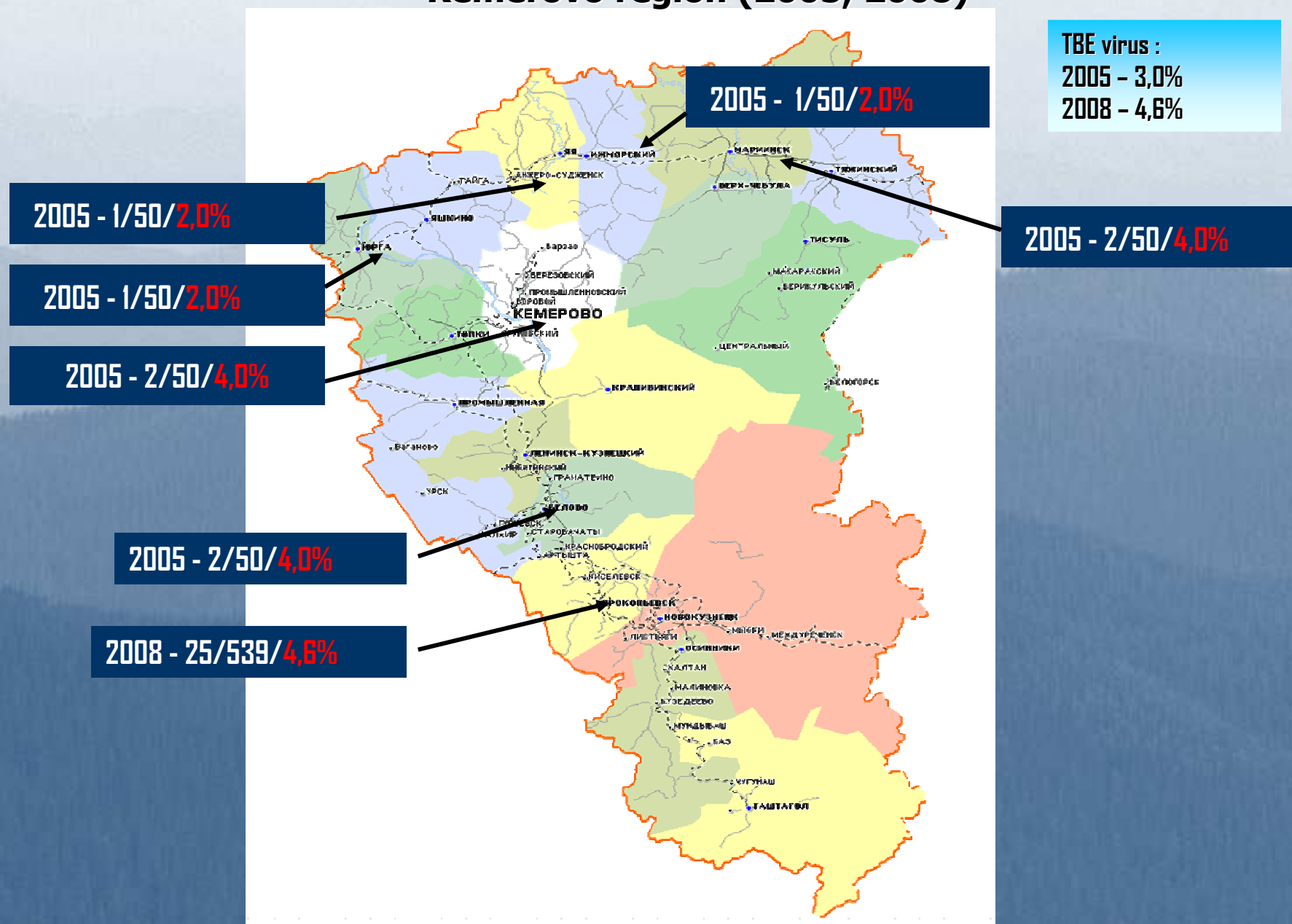


Prevalence of TBE virus in ticks *I.persulcatus* in natural foci of Kurgan region (2007)

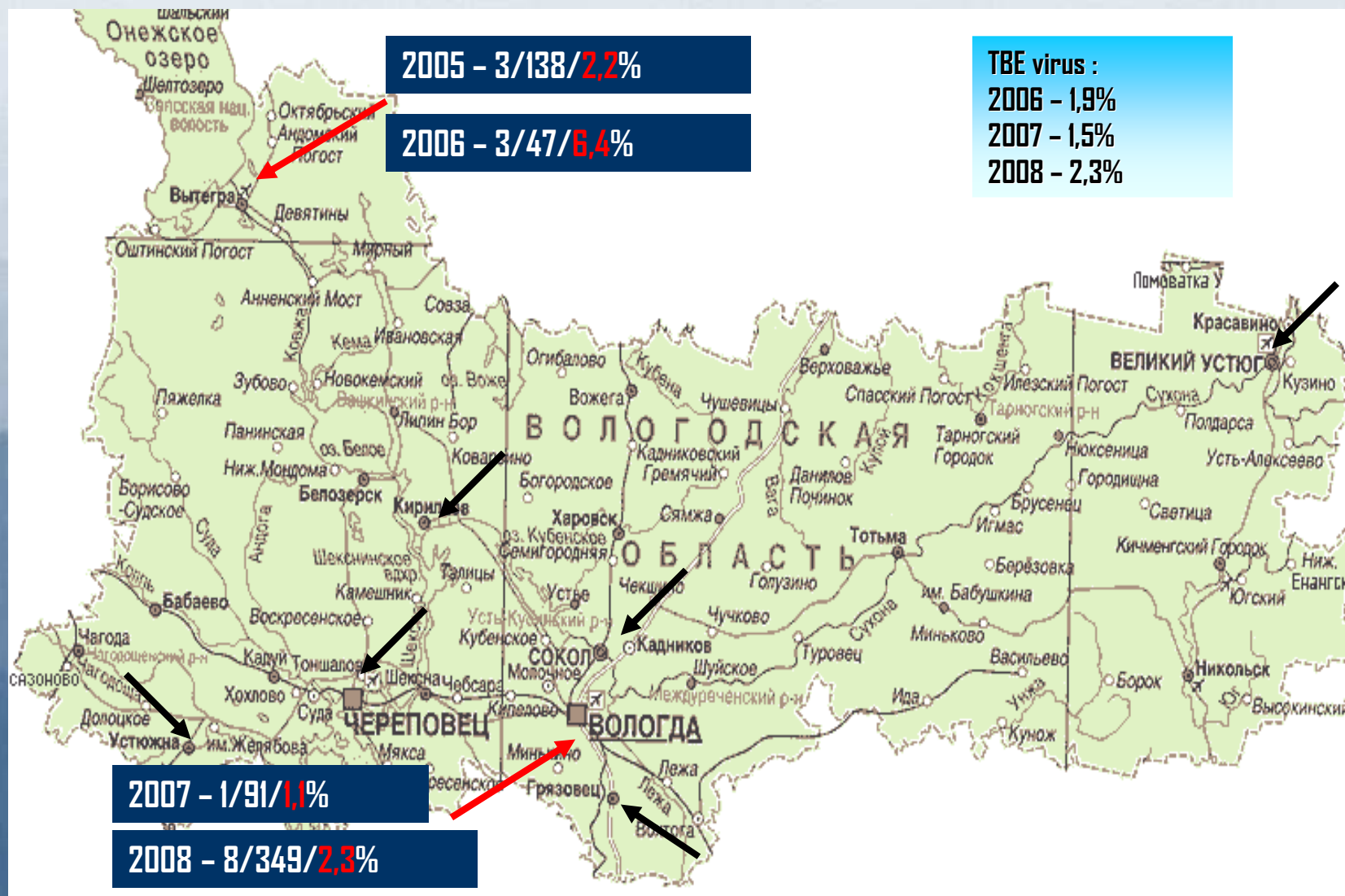


Prevalence of TBE virus in ticks *I.persulcatus* in natural foci of Kemerovo region (2005, 2008)

TBE virus :
2005 – 3,0%
2008 – 4,6%



Prevalence of TBE virus in ticks *I.persulcatus* in natural foci of Vologda region (2005 - 2008)

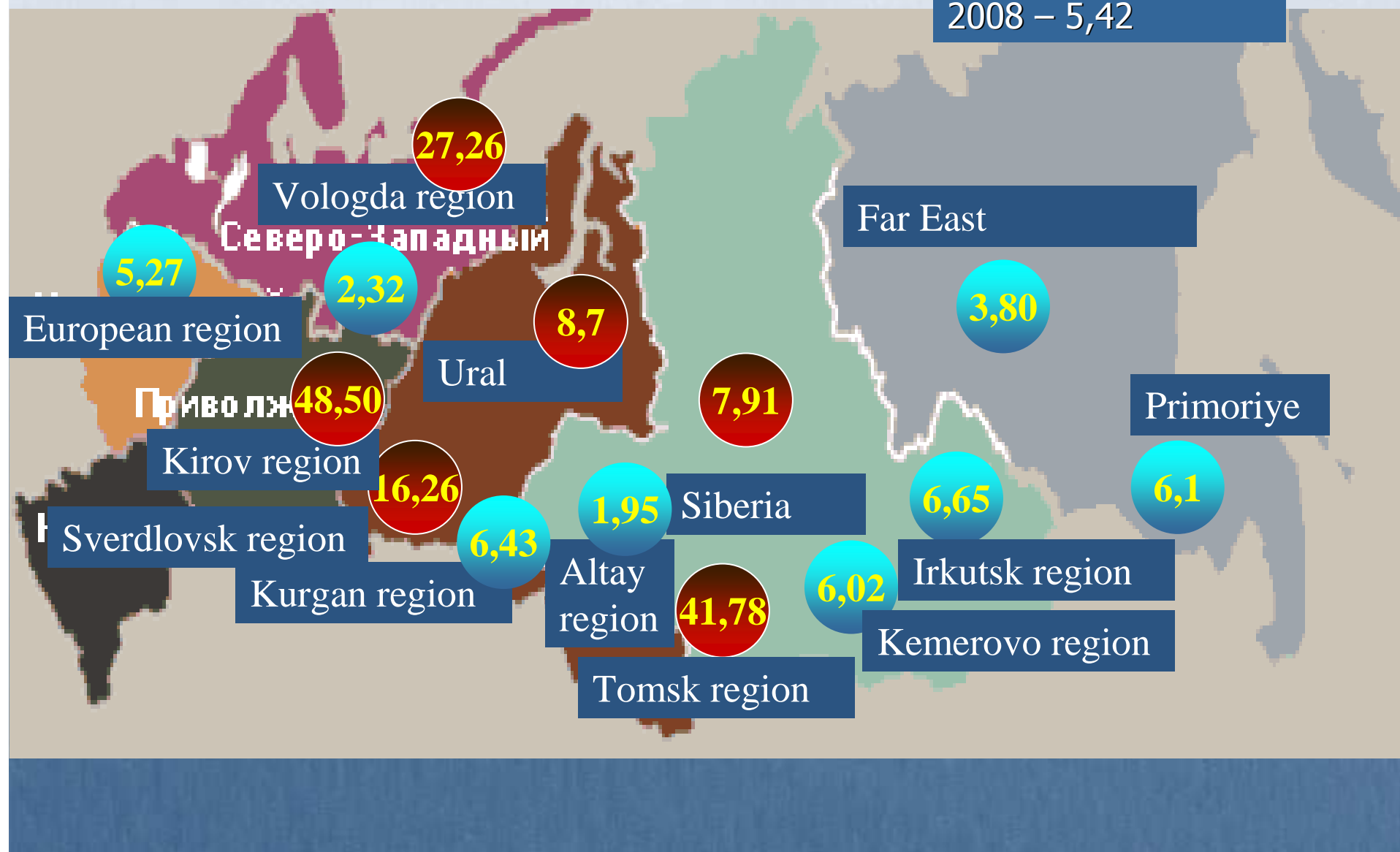




B.BURGDORFERI SENSU LATO

Borreliosis incidence rate in last years, per 100,000 population

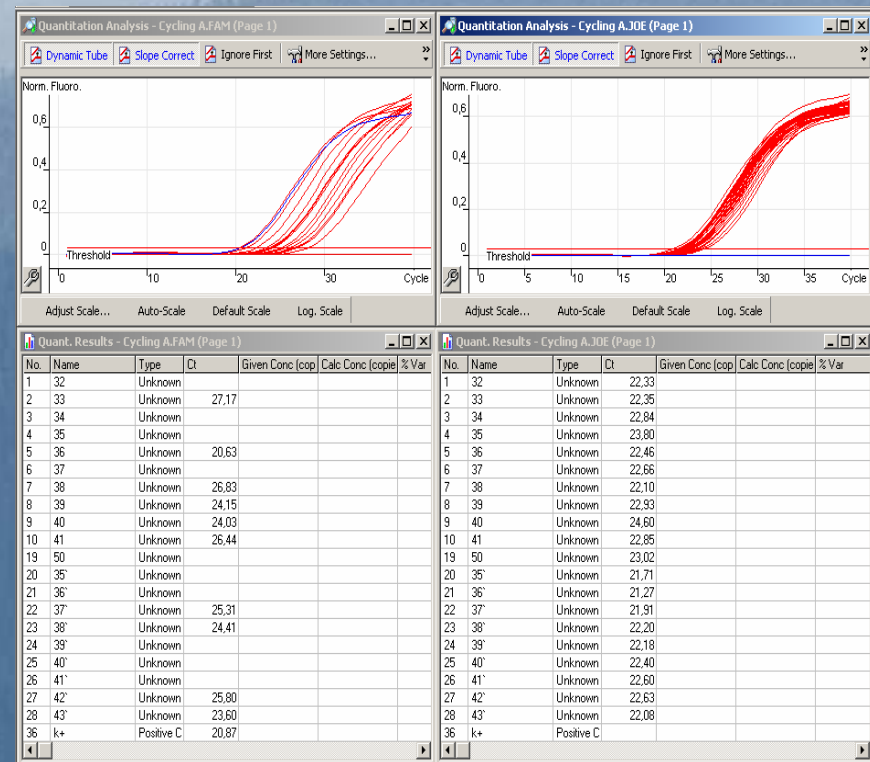
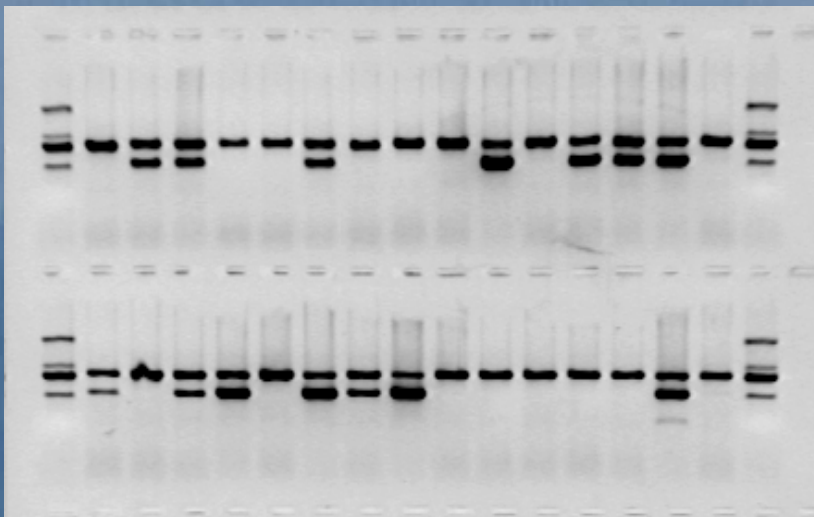
Russian Federation:
2008 – 5,42



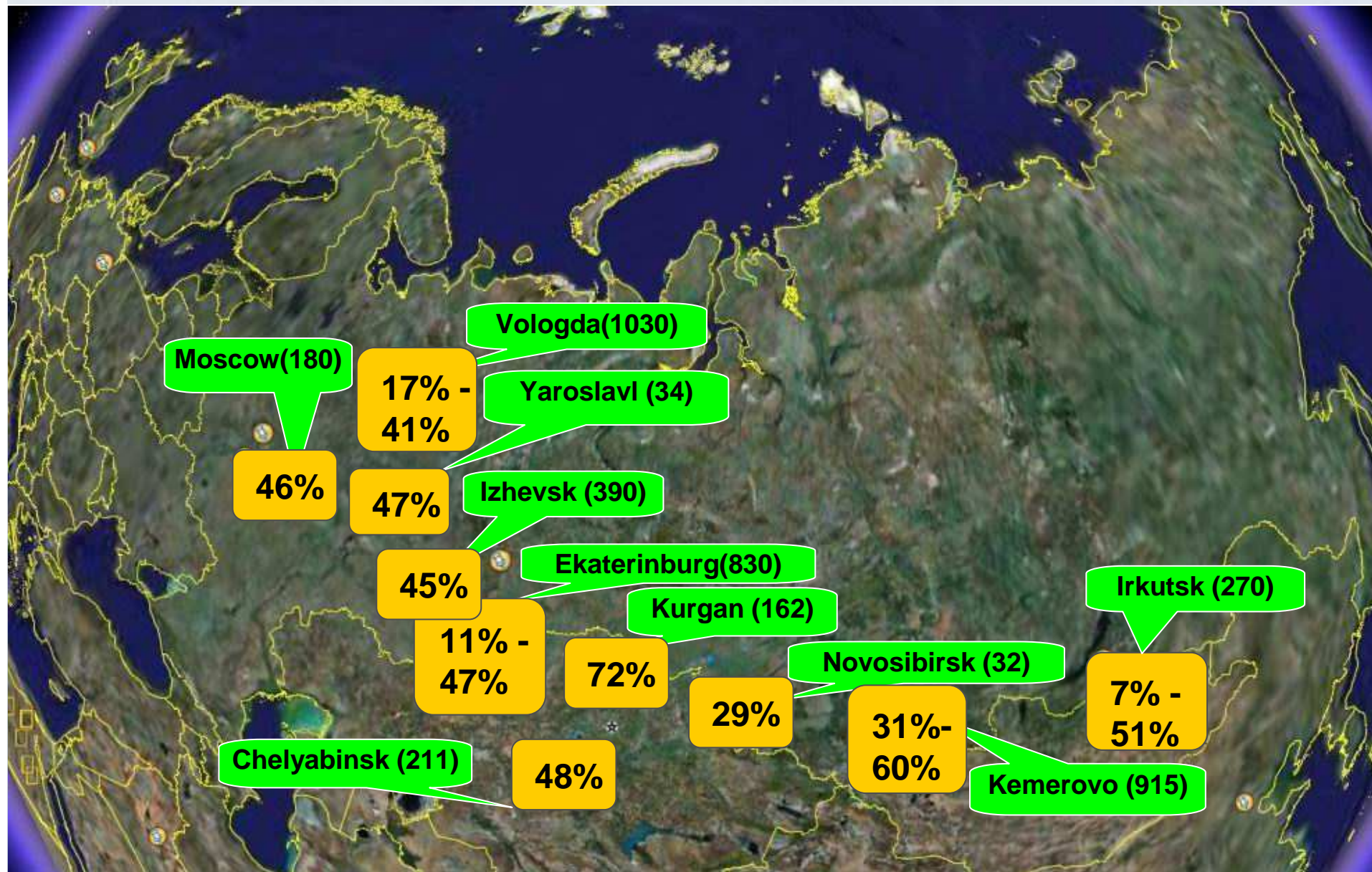
Detection of *B.burgdorferi* sl isolated from *I. persulcatus*

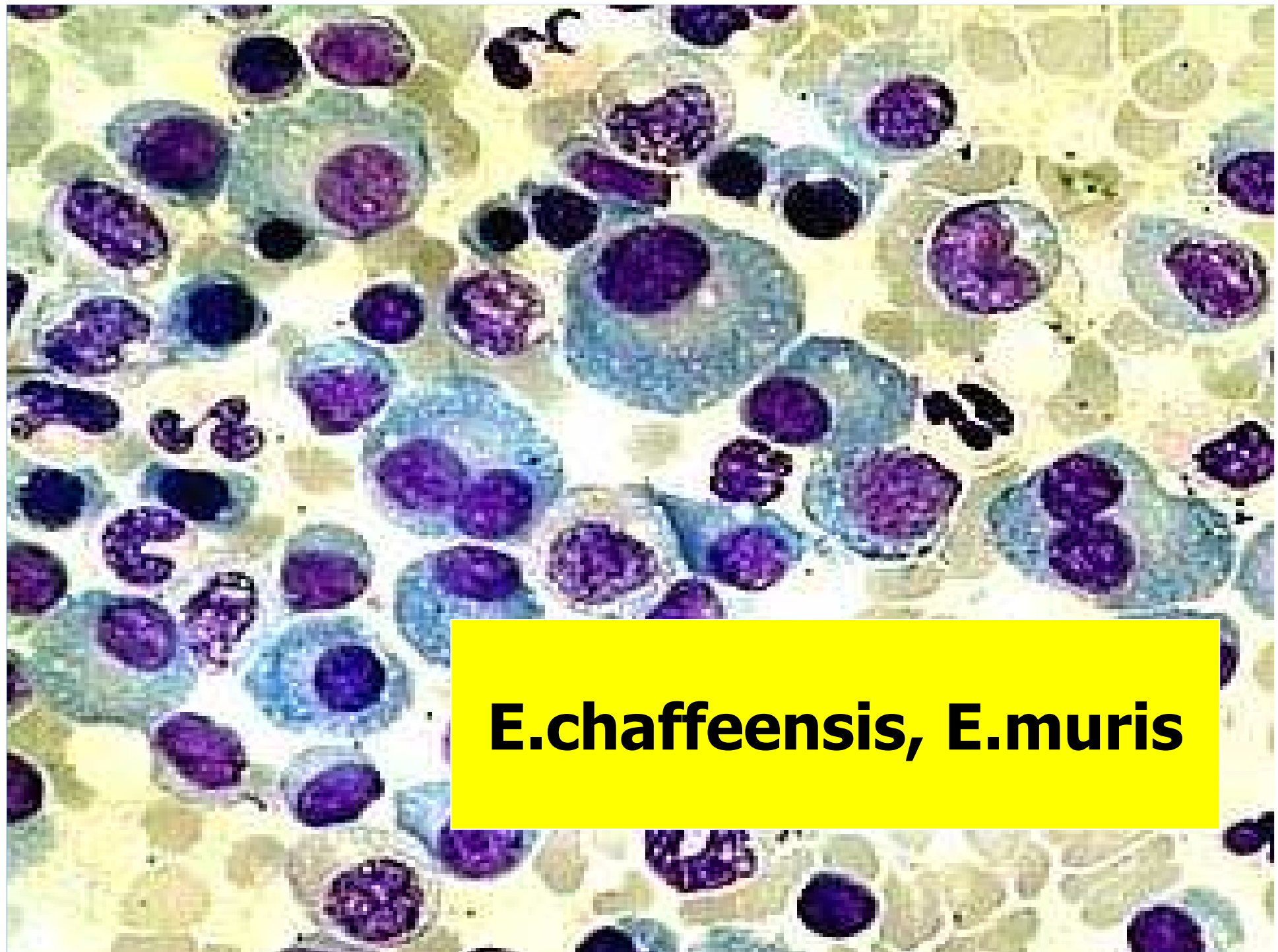
Test-system «**Amplisens**
B.burgdorferi sl-FI» by real-time PCR
with fluorescent hybridization probes
and end point

Test-system «**Amplisens**
B.burgdorferi sl-Eph»
sensitivity is 10^4 copies/ml



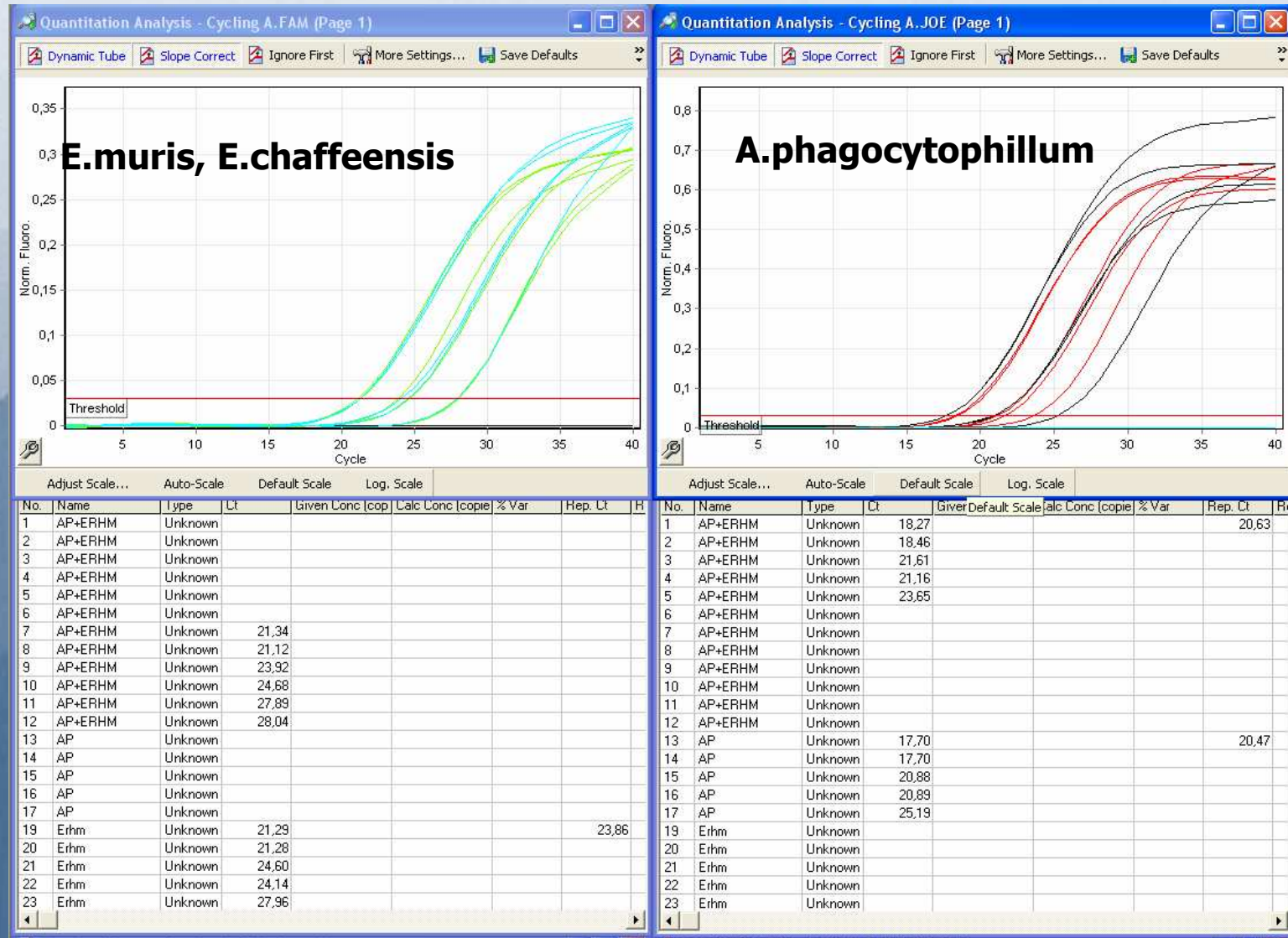
Detection of *B. burgdorferi* sl extracted from *I. persulcatus* in Russia (2002-2008)



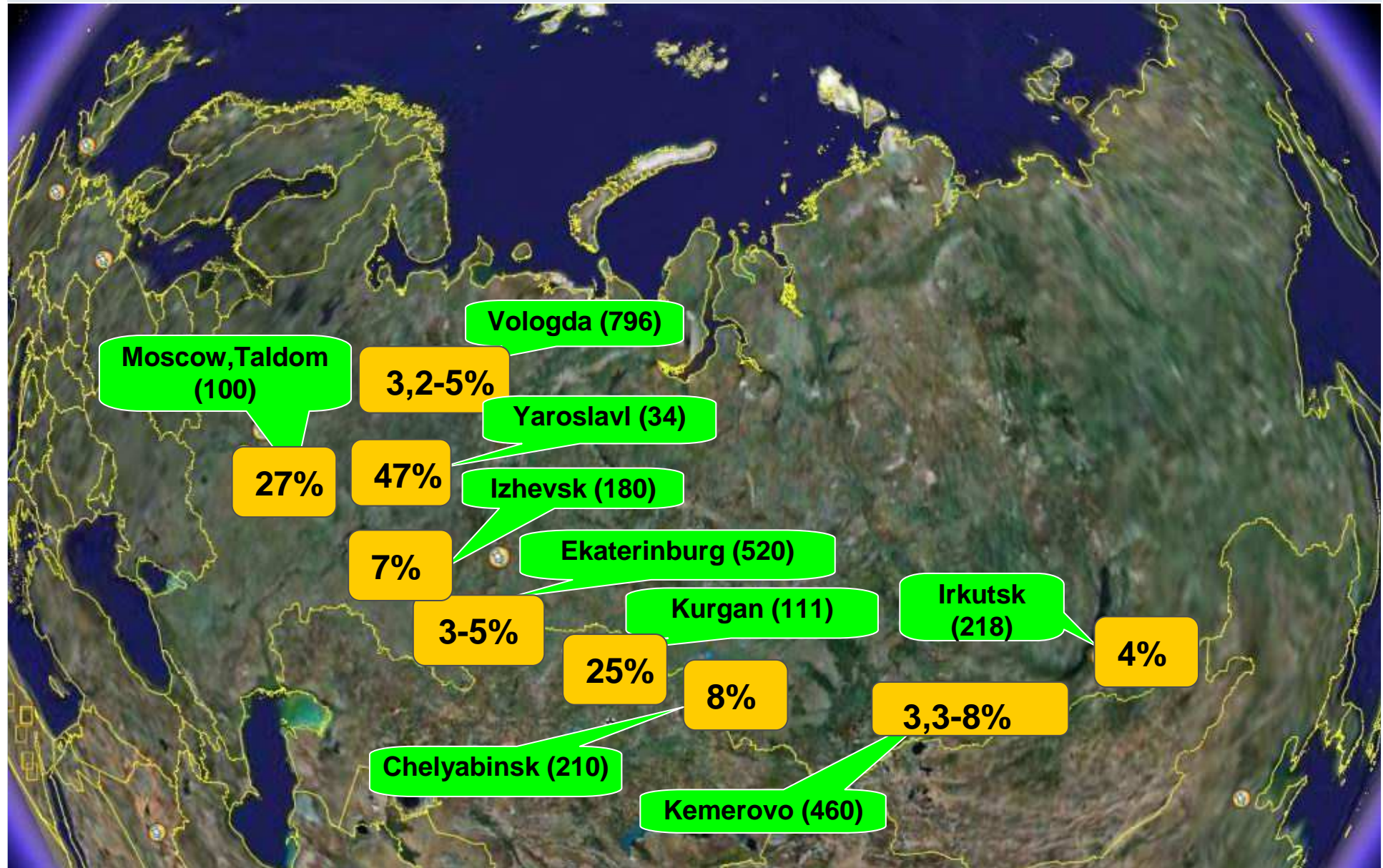


E.chaffeensis, E.muris

Detection of E.muris, E.chaffeensis/A.phagocytophillum



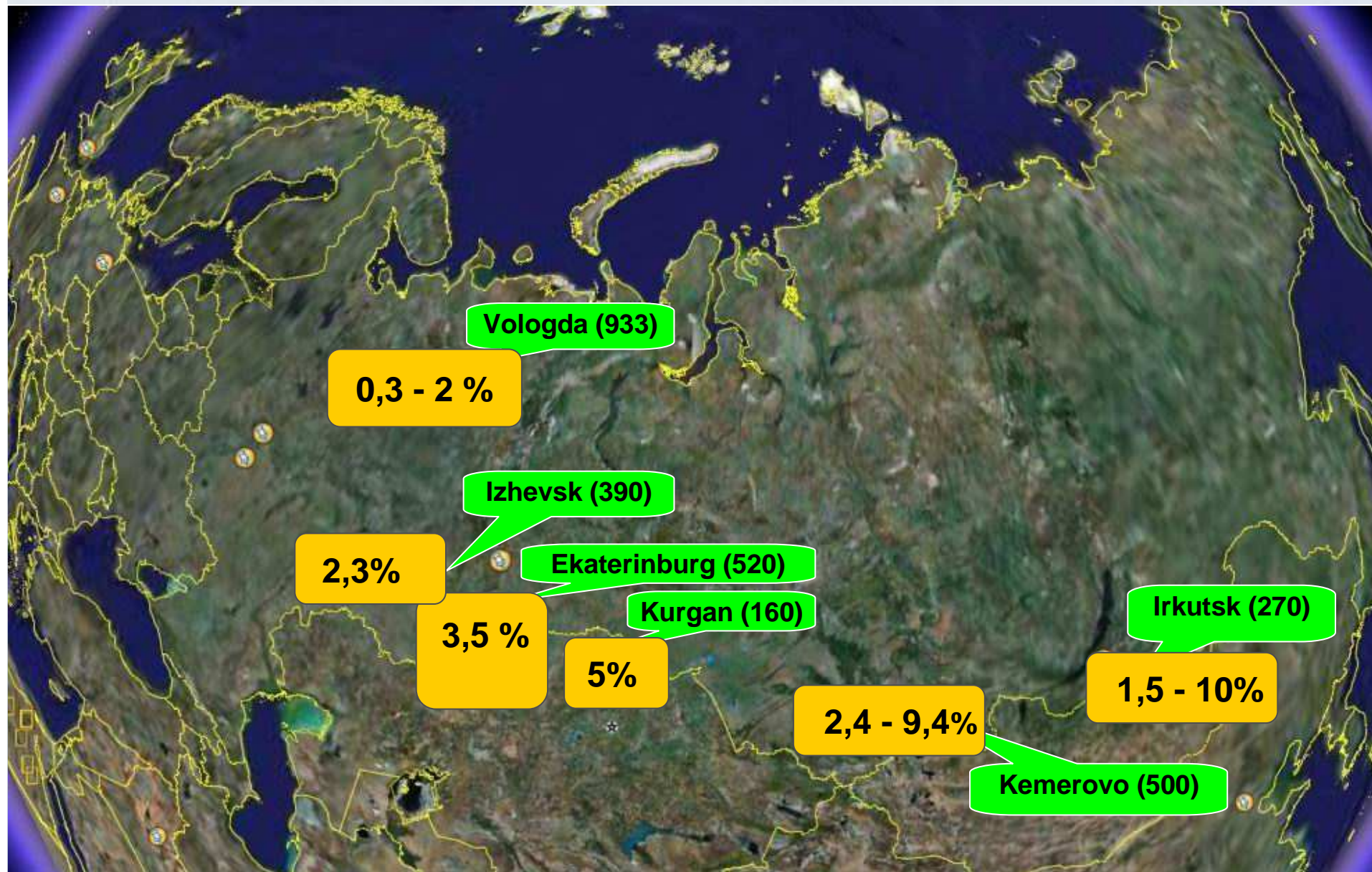
Detection of *E.muris* in *I.persulcatus* in natural foci of Russia



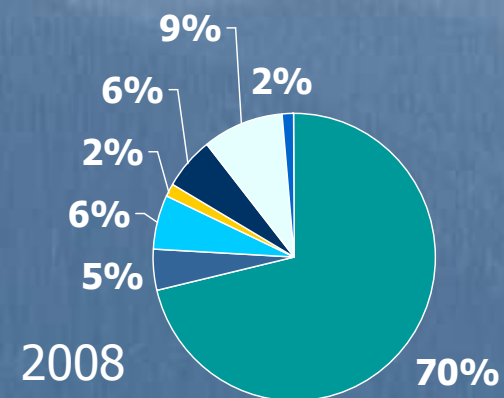
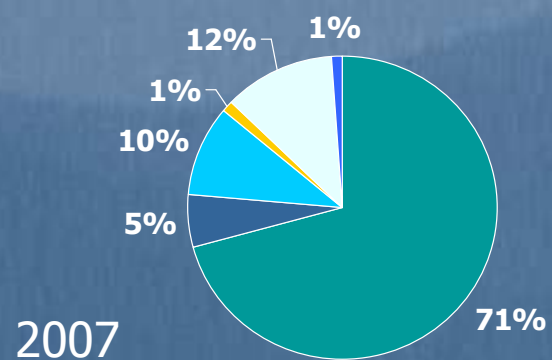
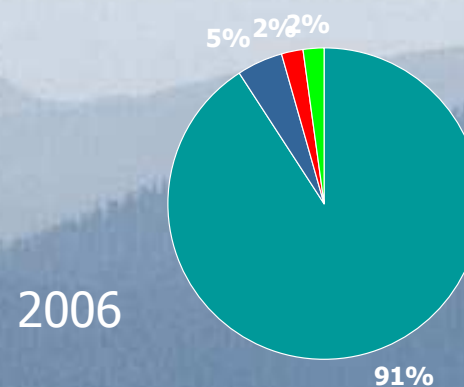
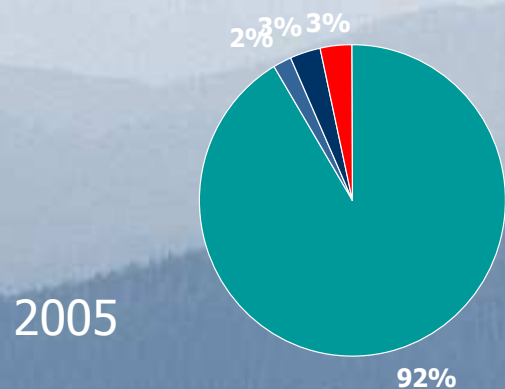
A microscopic image showing several red blood cells (erythrocytes) and a central green, textured structure. The red blood cells are large, oval-shaped, and have a reddish-orange hue. The green structure is smaller, roughly spherical, and has a granular or textured appearance. The background is dark, and there are some blueish, irregular shapes scattered around, possibly representing other cellular components or debris. The text "Anaplasma phagocytophilum" is overlaid in white, bold font across the center of the image.

Anaplasma phagocytophilum

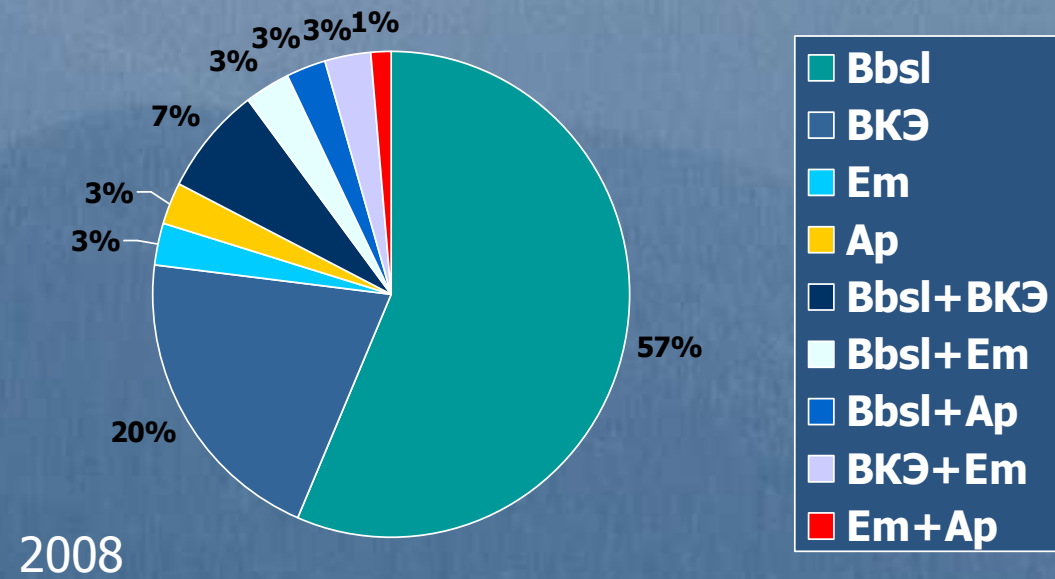
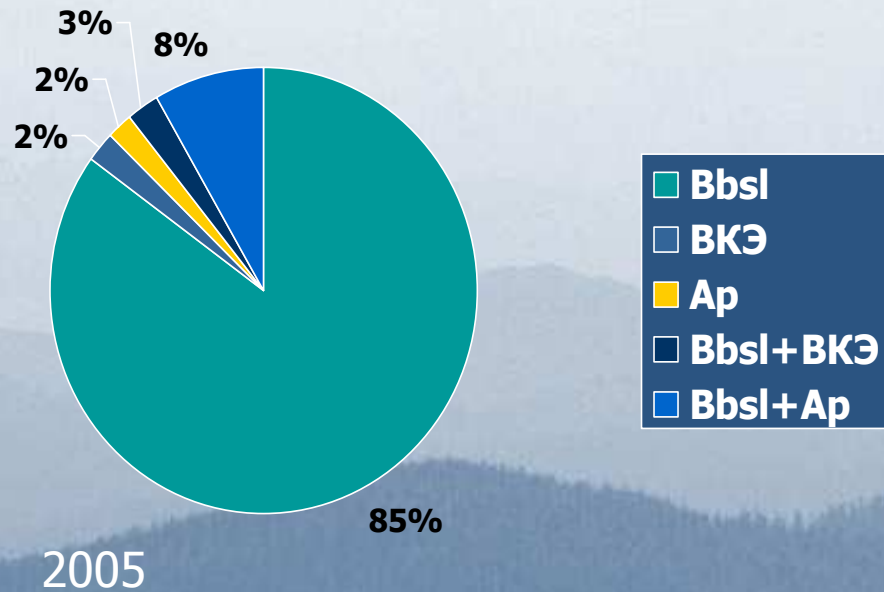
Detection of *A.phagocytophillum* in *I.persulcatus* in natural foci of Russia



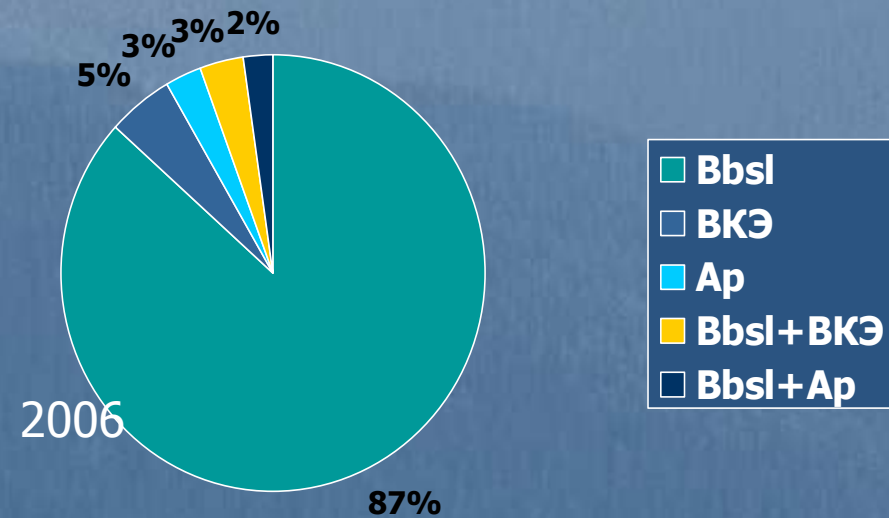
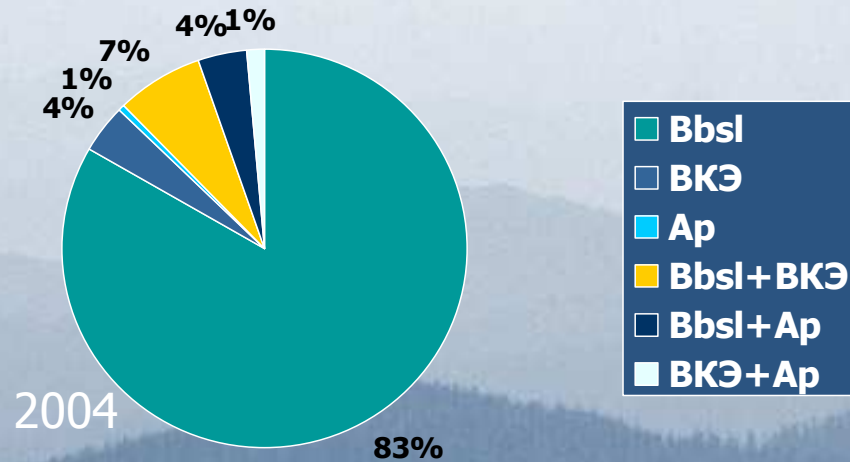
Mixed infection in ticks *I.persulcatus*, Vologda region



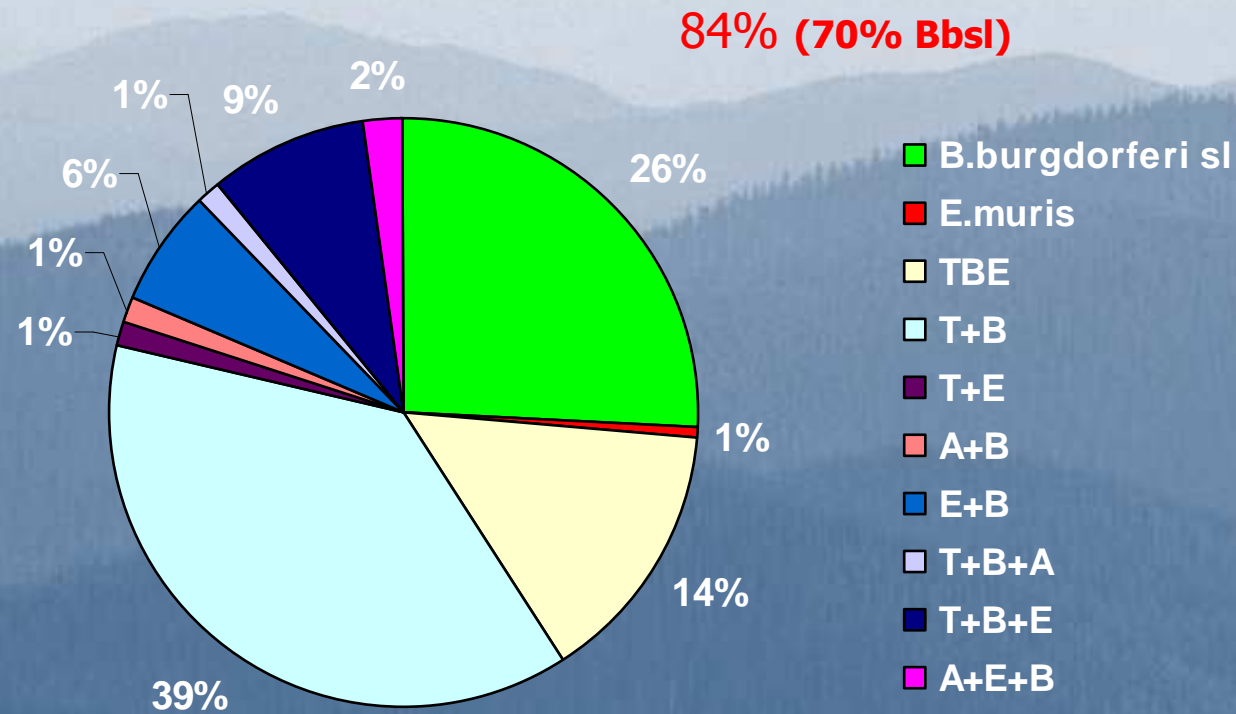
Mixed infection in ticks *I.persulcatus*, Kemerovo region



Mixed infection in ticks *I.persulcatus*, Sverdlovsk region



Mixed infection in ticks *I.persulcatus*, Kurgan region





THANK YOU FOR YOUR ATTENTION