

nébih

termőföldtől
az asztalig

*Genetic characterization of
Echinococcus spp. in cattle, sheep and
swine in Hungary*

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Materials and methods

Organs of 206 animals with suspected hydatidosis were collected by veterinarians during routine meat inspection at 44 slaughterhouses and sent to the NRLP.

Cyst contents were examined for the presence of protoscoleces.

DNA was extracted, and *cox1* gene PCR amplification was performed (Bowles et al., 1992).

Sequence analyses were done with programs included in the DNASTAR Lasergene program, and drawing of the haploid network was performed with the PopART software.

Results

Echinococcus infection was confirmed in 62 animals.

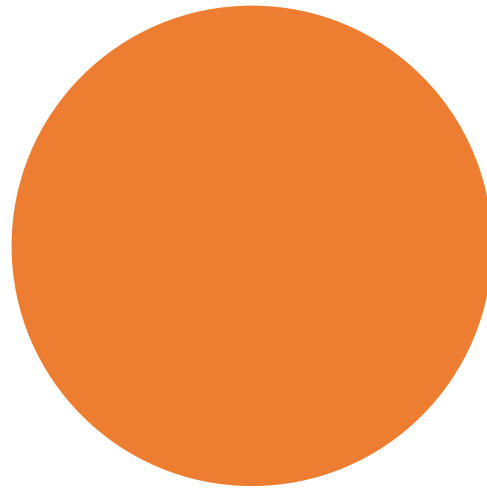
The rest of the organs were infected with other parasites (e.g. *Taenia hydatigena*), or were livers with other lesions.

Echinococcus infected organs of 34 swine, 20 cattle and 9 sheep were received from 17 slaughterhouses.

E. granulosus sensu lato was detected in 61 animals.

E. multilocularis was identified in the liver of a pig raised outdoor on a farm in an area, where the prevalence of *E. multilocularis* is high in red foxes.

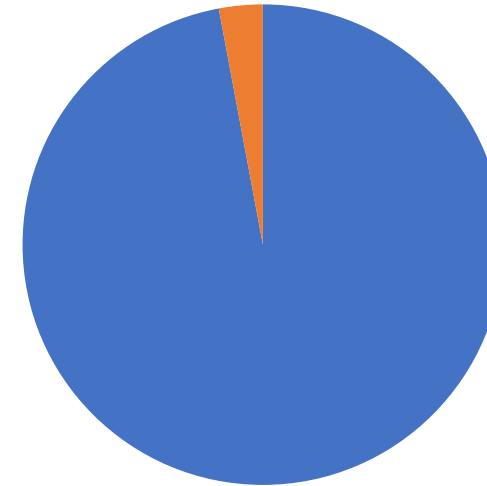
Results



■ E. granulosus s.s. (G1, G3)

Cyst fertility: 15%

CATTLE

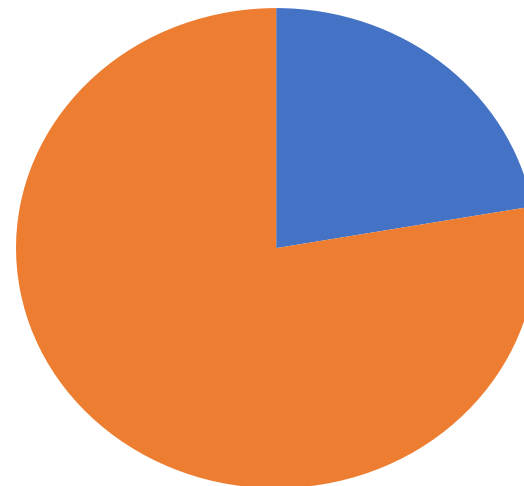


■ E. intermedius (G7)

■ E. granulosus s.s. (G1)

Cyst fertility: 65%

SWINE



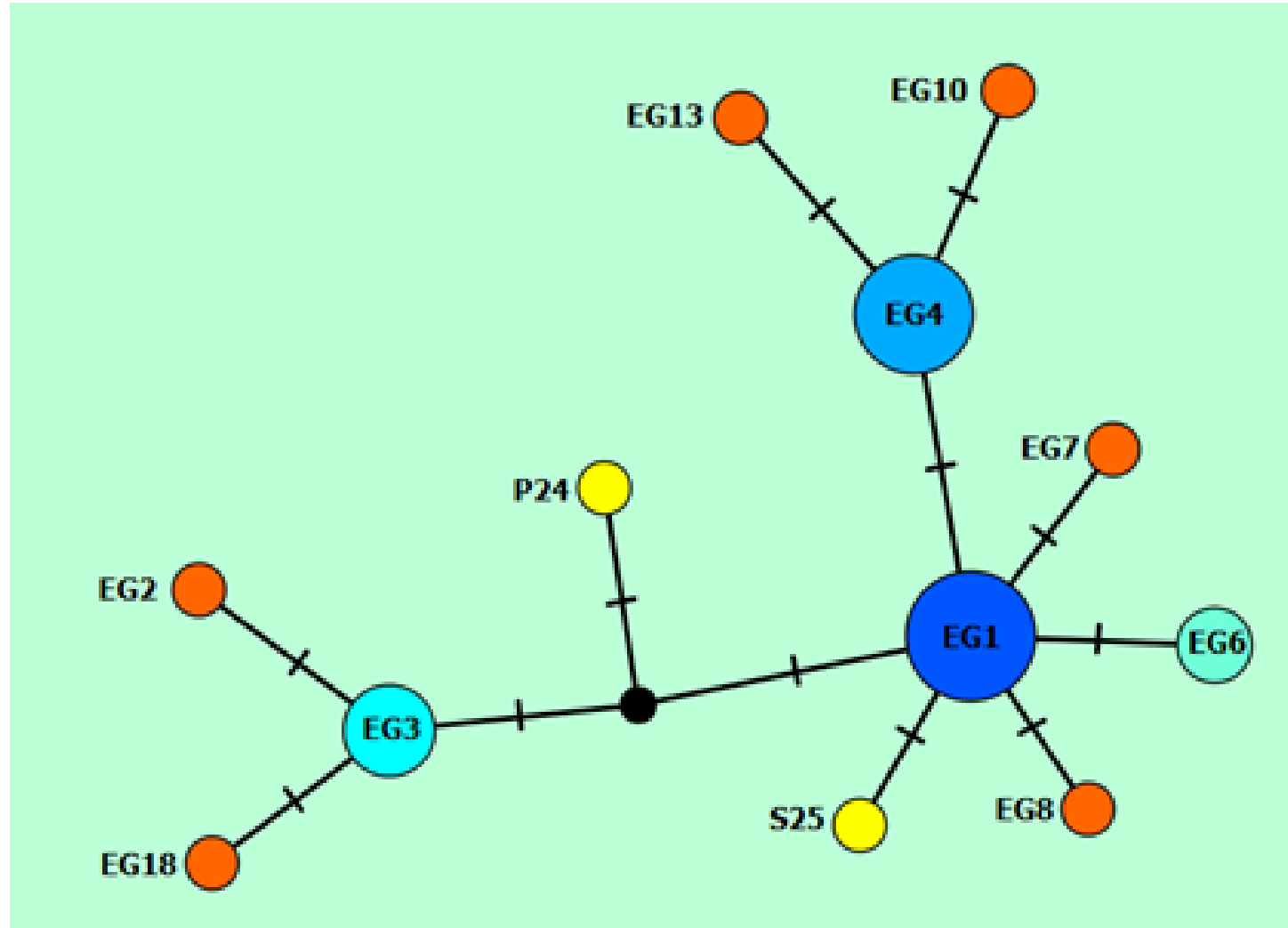
■ E. intermedius (G7, G6)

■ E. granulosus s.s. (G1, G3)

Cyst fertility: 100%

SHEEP

Results



Haplotype network of *E. granulosus* s.s.

Conclusions

Prevalence data based on mandatory reporting of slaughterhouses are not reliable without the appropriate training of the people responsible for meat inspection.

Based on cyst fertility data, all three host species play a role in certain extent in the epidemiology of cystic echinococcosis in Hungary.

High genetic diversity was noted within *E. granulosus* s.s., but the genetic diversity was low within *E. intermedius* (might be attributed to the marked population and breed diversity decrease of backyard pigs in the past three decades).

The relatively high proportion of *E. intermedius* in sheep and *E. granulosus* s.s. in swine might be attributed to the family farm origin of samples.

As all animals infected with *Echinococcus* spp. originated from small family farms, control programs should mainly focus on these facilities.