

Short communication

Effects of eel restocking on the distribution of the swimbladder nematode *Anguillicola crassus* in Flanders, Belgium

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Summary

Data on the distribution in 1986 of the parasitic nematode in the swimbladder of the European eel (*Anguilla anguilla* L.) in Flanders (Belgium) are reported. In stations where imported eels have been used for restocking, samplings generally show high infection rates thus enhancing the spread of *Anguillicola crassus* in Flanders.

Zusammenfassung

Auswirkungen des Aalbesatzes auf die Verbreitung des Schwimmblasennematoden Anguillicola crassus in Flandern, Belgien

Es wird über die Verbreitung des parasitischen Nematoden der Schwimmblase des Europäischen Aales (*Anguilla anguilla* L.) in Flandern im Jahre 1986 berichtet. Aus den Untersuchungen an den Stellen, wo Importaale eingesetzt wurden, geht eine hohe Befallsrate hervor; der Besatz hat also die Verbreitung von *Anguillicola crassus* in Flandern gefördert.

Résumé

Les effets de repeuplement d'anguilles sur la distribution du nématode de la vessie natatoire Anguillicola crassus en Flandres, Belgique

Cette étude présente les premières données sur la distribution du nématode *Anguillicola crassus*, parasite de la vessie natatoire de l'anguille européenne *Anguilla anguilla* L. en Flandres en 1986. L'importation d'anguilles destinées au repeuplement, semble avoir élargi la distribution du parasite.

During the summer of 1986 a survey was carried out on the European eel (*Anguilla anguilla* L.) in Flanders in order to quantify the infection rates of the swimbladder parasite *Anguillicola crassus* KUWAHARA, NIIMI and ITAGAKI. The eels were caught by fykenetting or by electrofishing. Their weight varied between 13 and 905 g with a length varying between 23.0 and 76.5 cm. After weighing and measuring the fish, observations were made on the presence and sex ratio of the parasites.

Ratio of the adult male and female parasites tends to be equal ($\varnothing = 51.4\%$, $\sigma = 48.6\%$, $N = 253$). Distribution and infection rates of *Anguillicola crassus* in Flanders are represented in Fig. 1. The infection rates (calculated as the percentage of the eels infected) vary from 0 to 100%, depending on the site. When the most representative samples (batches of more than 15 eels) are considered, it is obvious that eels at sampling sites which have recently been restocked with elvers usually show substantial infection rates (e.g. Ieperlee: 35.3%, Plas-sendale Channel: 54.8%, Blaasveldbroek: 9.7%), whereas stations where no restocking has taken place in the last five years show low infection rates (e.g. Albert Channel: 3.8%, Roosmele Pond 3.7%) or no infection at all (e.g. Blankkaart Lake, Zuid-Willemsvaart and

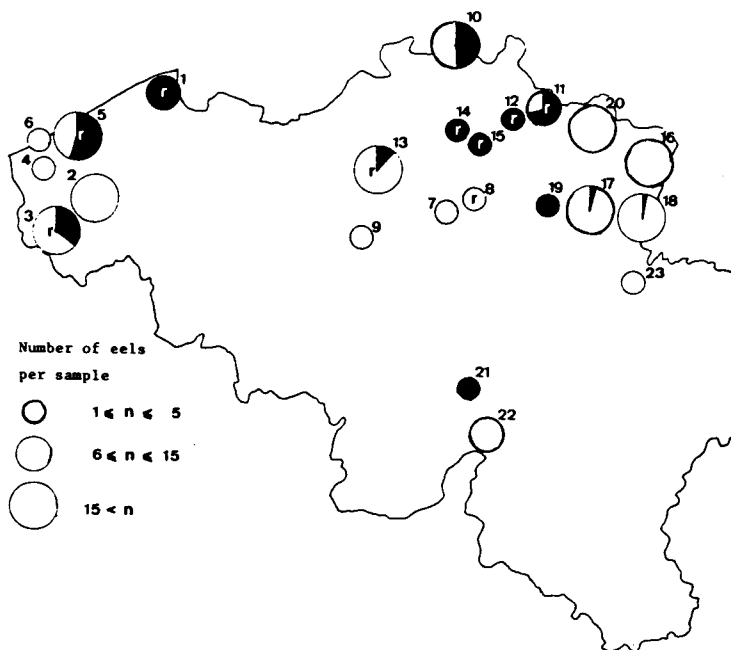


Fig. 1. Distribution of *Anguillicola crassus* in Flanders. Percentage of eels infected ranges from 0 (white circles) to 100% (black circles). Numbers refer to the following sampling sites: (1) Damse Vaart, (2) Blankaart (Lake), (3) Ieperlee, (4) Grote Beverdijk, (5) Plassendale Vaart, (6) Pond Nieuwpoort, (7) Rotselaar (Lake), (8) Demer (Aarschot), (9) Lembeek (Pond), (10) De Mark, (11) De Maat (Mol), (12) Kempisch Kanaal (Retie-Geel), (13) Blaasveld Broek (Ponds), (14) Albertkanaal (Grobendonk), (15) Kleine Nete (Lichtaart), (16) Zuid Willemsvaart (Neeroeteren), (17) Albertkanaal (Godsheide), (18) Pond grintgroeve (Roosmele), (19) Schulensmeer (Lake), (20) Kempisch Kanaal (Overpelt), (21) Maas (Hun), (22) Maas (Hastière), (23) Maas (Argenteau). r = Restocking has been carried out

Herentals-Bocholt Channel: 0%). One exception was found, however, in the north near the Dutch border where the Mark River connects with the Dutch hydrographic system and shows a high *Anguillicola* infection rate (47.4%) in spite of the fact that no restocking has ever taken place there. Infection rates in the Netherlands are known to be very high (VAN BANNING et al. 1986).

Generally, restocking in Flanders is carried out by using elvers imported from the Netherlands. Therefore, six batches of those elvers originating from three different fishermen and destined for restocking in Flanders have been analysed. Eels of all batches were infected, with infection rates varying from 7.3 to 70.0%. In this respect, it is clear that restocking can enhance the spread of this parasite.

This is again demonstrated when one considers the *Anguillicola* infection rates in the Plassendale Channel where, in five samplings in 1984 and 1985, no *Anguillicola* was found. However, in December 1985, up to 9.5% of the examined eels were parasitized. This infection was most probably the result of restocking with foreign elvers in June 1985. The higher infection rate (54.8%) observed one year later (17.12.86) could either be the result of further restocking (29.05.86), or of the natural spreading of the parasite.

Acknowledgements

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References

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