What do interception data really tell us about actual insect invasions in Europe ?

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The 2005-2008 European project DAISIE (*Delivering Alien Invasive Species Inventory in Europe*) aimed at delivering the first continental inventory of the alien species of animals and plants already established in Europe. It revealed that alien insect species are establishing in Europe at a mean rate of 15.9 species per year since 2000 whereas this rate was ca. twice less 25 years ago (9.5 species/ year). A major part of these species have phytophagous habits and arrived accidentally with human activities, less than 10 % being parasites/ predators deliberately introduced for biological control. It was therefore interesting to compare these data with the interceptions reported by the national quarantine services of the European countries, which essentially concern phytophagous pests registrated on quarantine lists (A1 and A2).

A total of 238 alien species were identified at species level in the notifications of non-compliance reported by EPPO for the European countries for the period 1995-2005. Among the 1315 alien insect species today considered as established in Europe, a total of 183 species of which 114 phytophagous have been recorded to have established during the same period. Only 7 of these species (i.e., 6.1%) have been intercepted before their establishment.

Although the insects arriving from Asia were dominant in both interceptions and establishments, representing 38.2 and 35% of the species respectively, the taxonomic composition of the two groups significantly differed. Coleoptera (30.6% without any dominant family), followed by Hemiptera (25.7% with a dominance of aphids and scales) largely dominate the alien species established during 1995-2005. In contrast, the quarantine interceptions during the same period mostly consisted of Diptera (30.7% of which 66.7% of agromyzids) and Hemiptera (30.0% among which 82.7% of aleyrodids), far above Coleoptera (17.8%). Overall, the taxa including small-sized sucking insects appeared to be significantly more represented in the entomofauna which established than in the interceptions. A comparison of the biological traits shown by the species which were intercepted but never established with these of the species which were never intercepted but established is under progress and will be presented at the meeting.