



norden

Nordic Forest Research Cooperation Committee

Network no: N 2011-03

Send the report to SNS-secretary Katrine Hahn Kristensen  
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## REPORT NETWORK ACTIVITY (meeting, conference etc.)

Please notice that the size of text sections in the form can be adjusted if needed.

**The length of the final report should not exceed 3 pages.** Supplementary information can be attached.

1. Aktivitetsens titel	Nordiska kott- och fröinsekter
2. Activity title	Nordic Cone and Seed Insects (NCSI)
3. Coordinator /contact person (name, address, telephone, telefax. e- mail)	Olle Rosenberg Skogforsk Uppsala Science Park SE-751 83 UPPSALA +46 18 18 85 46
4. Duration	The activity started 14/4 2011 and ended 25/11 2012
5. Cost	SNS-grant:69.237 DKK (€9.300) (84.878 SEK) Total activity cost (estimate): 531.000 DKK (€71.270) (613.000 SEK)

<p>6. Description of activity (incl. objectives, results, conclusions)</p>	<p>One aim of the NCSI network was to coordinate research among Nordic countries and Estonia e.g. in developing monitoring tools for the two major cone pests <i>Dioryctria abietella</i> and <i>Cydia strobilella</i> (previously we had only been working with <i>D. abietella</i>). Another aim was to continue to exchange ideas and new research results on cone insects damaging seeds of coniferous trees. On the basis of shared experiences the intention was to identify subjects for future common investigation as Nordic co-operation or on a broader European/international level.</p> <p>The first meeting was planned to be held in Uppsala, Sweden in March 2011 and the second meeting in Estonia during December 2011. Due to several reasons (e.g. maternal leave and dissertation) the meetings were postponed to March 2012 and October 2012.</p> <p>In the first meeting we (Kaljo Voolma, Hans Peter Ravn, Paal Krokene, Göran Nordlander, Jan Weslien (the two latter persons part of day one) and Olle Rosenberg) presented our monitoring of <i>D. abietella</i> for 2010 and 2011, planned the work for 2012 and also continued to work on our review paper. We also had a guest invited, Glenn Svensson from University of Lund, who presented the result of a geographic study of <i>C. strobilella</i> that several SNS-NCSI participants have been involved in.</p> <p>At the second meeting, held in Tartu, we (Kaljo Voolma, Paal Krokene, Tiina Ylioja and Olle Rosenberg) also had a guest invited, Tiit Maaten, a tree breeder from Life Science University in Tartu, who gave a presentation regarding seed orchards and forest seed management in Estonia. Thereafter we had a presentation of our monitoring results of 2012 and continued to work on the review paper. Further, we discussed the future of the network project. In order to increase the number of participants at the meetings, it is necessary to broaden the network project to also include other forest pest species.</p> <p>We (Tiina Ylioja, Olle Rosenberg and Jan Weslien (only a part of day one) also had a third meeting in Uppsala in November 2012. At this two-day meeting we mainly worked with the review paper, but also fine-tuned experimental designs for 2013.</p> <p>The aim of the current network project has largely been fulfilled. We have started monitoring of both <i>D. abietella</i> and <i>C. strobilella</i> and planned new research regarding control of pest species. The network group has been involved in an international study regarding <i>C. strobilella</i> (see ref. below), and other Swedish pheromone related studies. Even though we have performed monitoring in several countries and for <i>D. abietella</i> for several years, we need some more years in order to really understand the phenology of the cone pest species.</p>
<p>7. Evt. publication/ communication</p>	<p>Svensson, G.P., Wang, H.-L., Lassance, J.-M., Anderbrant, O., Chen, G.-F., Gregorsson, B., Guertin, C., <b>Harala, E.</b>, Jirle, E.V., Liblikas, I., Petko, V., Roques, A., <b>Rosenberg, O.</b>, Strong, W., <b>Voolma, K.</b>, <b>Ylioja, T.</b> Wang, Y.-J., Zhou, X.-M., &amp; Löfstedt, C. 2012. Assessment of genetic and pheromonal diversity of the <i>Cydia strobilella</i> species complex (Lepidoptera: Tortricidae). Systematic Entomology. DOI: 10.1111/j.1365-3113.2012.00662.x (SNS-NCSI-representatives in bolded text)</p> <p>“Valuable seed destroyed by insects”. News and views No. 1 2012</p> <p>“Fröätare förstör för miljoner”. Plantaktuellt No. 3, 2011.</p> <p>“Nyt om fröinsekter”. Skadevoldere, Nåledrys 71/10, p. 35.</p> <p>Review paper on cone and seed insects in Northern Europe will (if accepted) be published in Scandinavian Journal of Forest Research. Submission during winter-spring 2013.</p> <p>Continuously communication with seed orchard managers.</p>

<p>8. Activity summary (about 1/3 page) for possible use in the News &amp; Views section of Scandinavian Journal of Forest Research</p>	<p>Cone and seed insects significantly reduce the seed harvest of conifers in seed orchards. Seeds constitute the most expensive value-per-volume product in forestry. Spruce seeds from seed orchards not only have a high market value (1000 – 1500 €/kg), but trees derived from these seeds have increased growth and better wood quality. Losses due to insect damage of more than 90 % of the expected yield have been reported in the Nordic countries. Control methods for most of the cone pest are not yet available. Furthermore, the amount of available pesticides has diminished due to negative environmental side-effects and recent EU legislation. EU now calls for IPM (integrated pest management) strategies for pest control which implies pest monitoring and avoidance of unnecessary pesticide applications. Simple and reliable monitoring methods for the most important cone insects need to be developed in parallel to finding acceptable control methods.</p> <p>Monitoring of <i>D. abietella</i> has been carried out since 2007 in Denmark, Sweden, Finland and Norway, and since 2009 in Estonia. The flight period was found to be long, from late May to late August, although some individuals have also been captured in late September. While <i>Dioryctria abietella</i> was the first species to be studied, the network has gone on to study the spruce seed worm, <i>Cydia strobilella</i>. A pheromone for this species was developed in a cooperative project involving Skogforsk and the University of Lund. Coordinated monitoring of <i>Cydia strobilella</i> is currently going on in Sweden, Finland and Estonia. The flight period of this species was found to be between early May to early June, with a flight peak of about two weeks from mid to late May. The information we gain might in the future help us predict when protective measures will be necessary. The network has also been involved in a study revealing that the North American “species” <i>C. strobilella</i> in fact is a different species from the European and Asian species. It is suggested that the North American species is named <i>C. youngana</i>, as was the case until 1983.</p>
<p>9. Date and signature</p>	<p>Date: <i>10/12 2012</i></p> <p>Signature of project leader/coordinator: <i>Ulf Rosenthal</i></p>