

Annual report for CARs

Submit the report before March 1st to: sns@slu.se
The report should not exceed 1500 words (including words in the template).

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|--------------------|------------|
| 1. CAR title: | HealGenCAR |
| 2. Reporting year: | 2017 |

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|-------------------------|---|
| 3. Project coordinator: | Tuija Aronen |
| Address: | Natural Resources Institute Finland Finlandiantie 18 FI-58450 Punkaharju Finland |
| Email: | tuija.aronen@luke.fi |

Activities during the reporting year:

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| 4. Description of the activities during the reporting year: |
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HealGenCAR activities in 2017 followed the realization plan: workshop postponed from 2016 on ash dieback was organised in Denmark, August 2017, and the training session on using R and on genetic data analysis in Sweden, November 2017. In addition of these foreseen activities, core group accepted applications and supported two workshops/meetings among Nordic breeders, as well as short-term scientific mission on forest health issues to Russia.

The ash workshop had in total 29 participants from 9 countries, mostly scientists but also practitioners. Scientific presentations on 1) Testing and breeding of ash 2) Development of markers to assist breeding 3) Development of other methods (e.g. endophytes used for biocontrol) were shared to assist the effort of obtaining better ash material for the future. In addition, selected research sites were visited, some of which are driven by the Danish Nature Agency. The size of the group, the combination of indoor and outdoor activities and the mixture of scientists and practitioners gave room for interesting discussions. **Training session** on using R and on genetic data analysis was hold in Umeå, Sweden, 14.-17. November 2017. It was an engaged group with 17 participants from 5 countries that really had the opportunity to deepen its knowledge in the subject of genomic prediction.

Meetings among Nordic tree breeders took place in Helsinki, Finland, February 2017, and in Riga, April 2017. In both occasions, joint interests and needs were discussed, and as consequence, joint grant applications prepared. During **scientific mission** to Voronezh, Russia, 5th to 7th May 2017, Danish scientists and Russian hosts visited areas where both the Emerald Ash Borer and Ash Die Back are present. Besides the very strong impression that the comprehensive effects of the pest and the disease made, discussions and negotiations on possible countermeasures and possible, joined research efforts were carried out. These efforts are in progress and going on. Furthermore, work originating from HealGenCAR Nordic-Baltic Forest Entomological Group Workshop, Copenhagen 16-17 Nov, 2016 continued: During the workshop eight participants from four countries discussed matters of common interest, gave presentations of mutual interest and made decisions on a common publication on occurrence and change in patterns of forest pests during the last 25 years. This work and the follow up is in progress.

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| 5. Activity | Place (country) for the activity | Duration (date) |
|--|----------------------------------|------------------|
| Workshop on hybrid aspen and poplar breeding | Helsinki, Finland | 7.-8. February |
| Meeting between tree breeders in Fennoscandia and the Baltic States | Riga, Latvia | 19.-20. April |
| A short term scientific mission to Russia on Ash Dieback and the Emerald ashborer | Denmark → Russia | 4.-7. May |
| Workshop "Fighting ash dieback with new and old tools" in Denmark | Denmark | 23.-25. August |
| Training session on using R and on genetic data analysis using SNP data for relationship (GBLUP) | Umeå, Sweden | 14.-17. November |
| | | |

Place and date for the activities:

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|--|
| <p>6. Project status:</p> <ul style="list-style-type: none"> - Does the project develop according to the research plan? Please elaborate: - Does the project deviate from the research plan? Please elaborate: |
| <p>Activities planned for 2017 in the HealGenCAR realization plan took place, minor exception being compilation of information on CAR's web-pages.</p> <p>In 2017, SNS renewed its web-pages containing also CAR information. As a consequence of this, input of data was on hold, and when functioning again, no larger files could anymore be uploaded, and part of existing information disappeared. Input of data on Nordic research efforts and infrastructures relevant to HealGenCAR therefore postponed to 2018.</p> |

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Results during the reporting year:

7. List the published outputs during the reporting year (peer-reviewed articles, other publications):

Jansson, G; Kehlet Hansen, J; Haapanen, M; Kvaalen, H; Steffenrem, A. 2017. The genetic and economic gains from forest tree breeding programmes in Scandinavia and Finland. *Scandinavian Journal of Forest Research* 32 4: 273-286.

Lindelöw, Å., Isacson, G., Ravn, H.P. & Schroeder, M.: *Tetropium gabrieli* and *Ips cembrae* (Coleoptera; Cerambycidae and Curculionidae) – invasion of two potential pest species on larch in Sweden. *Entomologisk Tidskrift* 136 (3): 103-112. Uppsala, Sweden 2015. ISSN 0013-886x.

Nissinen K, Virjamo V, Randriamanana T, Sobuj N, Sivadasan U, Mehtätalo L, Beuker E, Julkunen-Tiitto R, and Nybakken L, 2017: Responses of growth and leaf phenolics in European aspen (*Populus tremula*) to climate change during juvenile phase change. *Can. J. For. Res.* 47: 1350–1363 (2017) dx.doi.org/10.1139/cjfr-2017-0188

Zeps, M; Jansons, A; Matisons, R; Stenvall, N; Pulkkinen, P. 2017. Growth and cold hardening of European aspen seedlings in response to an altered temperature and soil moisture regime. *Agricultural and Forest Meteorology* 242: 47-54.

8. Other practical outputs during the reporting year (e.g. websites, policy recommendations, conferences, large-scale project applications etc.)

Workshop on hybrid aspen and poplar breeding, Finland 7-8. Feb 2017:

Joint interests and needs were discussed, leading to preparation of Seed Money application "Wood Biomass Production in Medium Rotation Plantations with Hybrid Aspen and Poplars (MedRoPlan) to the Baltic Sea Region Interreg call. Seed Money funding has been granted, and preparation of joint project application will be done with this support.

Breeder's meeting, Riga 19.-20. April 2017:

Joint interests and needs were discussed, and based on these discussions and discussions with other participants, H2020 application B4EST (Adaptive BREEDING for productive, sustainable and resilient FORESTS under climate change) was prepared to H2020-BB-2016-2017 (Bio-based innovation for sustainable goods and services) call, with INRA as coordinator, and Luke, Skogforsk, NIBIO and University of Uppsala as Nordic partners. The B4EST will be funded, being currently under final negotiation phase.

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9. Economic overview for the reporting year

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|---|-------------------|
| Received grant from SNS for the reporting year: | Specify currency: |
| 4,6096,87 | euro |

Costs

| | SNS funding | External funds | Total | SNS funding (% of total) |
|--|--------------|----------------|---------------|--------------------------|
| Travel and hotel | 8204 | 10300 | 18504 | 44 % |
| Meeting costs | 15067 | 6600 | 21667 | 70 % |
| Communication | | | | |
| Consumables | | | | |
| Salary | 9784 | 98100 | 107884 | 9 % |
| (Other costs (specify below)) differences due to exchange rates, taxes. | 212 | - | 212 | 100 % |
| Total SUM | 33267 | 115000 | 148267 | 22 % |

Transfer of SNS funds to project partners

| Sum | Receiver of (partner) and reason for transfer |
|----------|--|
| 288,15 | Sverges Landbruksuniversitet: travel costs |
| 4567,49 | SkogForsk: Organising training session and workshop Riga plus travel costs |
| 10878,18 | Kobenhavns universitetet: Scientific mission and organising workshop. |
| 811,00 | NIBIO: travel costs |
| 1475,00 | Skograekt rikisins Mogilsa: travel costs |
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Comments to the economic overview:

In addition to the above transfers to the other partners a total of €1866,42 was paid to four students covering their travel costs and participation fee to the R training session in Umeå, and €1500,- to a guest lecturer to the training session.

In the economic overview, external funds are partly estimated, due to difficulties in obtaining exact figures from all the participants.

From the grant received from SNS, around 14 000 € was saved from 2017 due to following:

- none of the participating institutions sent bills for national coordination work (3977 € budgeted)
- a bill for breeders' meeting costs in April was not received during the year 2017, remains to be paid in 2018 (appr. 6000 €)
- problems in SNS web site prevented input of data on relevant Nordic research efforts and infrastructures on HealGenCAR homepage (3977 € budgeted) that was postponed to 2018

The saved funds will be used for HealGenCAR activities during 2018-20.

I hereby declare that the above statements are true to the best of my knowledge

Signature of the CAR coordinator, place and date



Tuija Aronen
(Signature)

Natural Resources Institute Finland
(Institution)

27.2.2018
(Day / Month / Year)

Signature of head of research institution



(Signature)

Natural Resources Institute Finland
(Institution)

27.2.2018
(Day / Month / Year)

Leena Paavilainen, Production Systems, Unit management
(Printed name, function)

