

SILVA FENNICA



1991 · Vol. 25 N:o 4

SUOMEN METSÄTIETEELLINEN SEURA
SOCIETY OF FORESTRY IN FINLAND

SILVA FENNICA

A quarterly journal of forest science

PUBLISHER – JULKAISIJA

The Society of Forestry in Finland
Suomen Metsätieteellinen Seura r.y.

EDITORS – TOIMITUS

Editor-in-chief – Vastaava toimittaja Eeva Korpilahti
Editor – Toimittaja Tommi Salonen

Unioninkatu 40 B, SF-00170 Helsinki, Finland
tel. + 358 0 658 707, fax + 358 0 191 7619, telex 125 181 hyfor sf

EDITORIAL BOARD – TOIMITUSKUNTA

Matti Keltikangas (University of Helsinki), Erkki Annala (Finnish Forest Research Institute), Seppo Kellomäki (University of Joensuu), Antti Korpilahti (Metsäteho) and Liisa Saarenmaa (University of Helsinki).

AIM AND SCOPE – TAVOITTEET JA TARKOITUS

Silva Fennica publishes papers relevant to Finnish forestry and forest research. The journal aims to cover all aspects of forest research, ranging from basic to applied subjects. Besides research articles, the journal accepts research notes, scientific correspondence, and reviews.

Silva Fennicassa julkaistaan artikkeleita, joilla on merkitystä Suomen metsätalouden ja metsäntutkimuksen kannalta. Sarja kattaa metsätalouden kaikki osa-alueet ja julkaisee sekä metsätieteen perusteita käsitteleviä että sovellutuksiin tähtäviä kirjoituksia. Tutkimusraporttien lisäksi julkaistaan tiedonantoja, keskusteluartikkeleita ja katsauksia.

SUBSCRIPTIONS – TILAUKSET

Subscriptions and orders for back issues should be addressed to Academic Bookstore, P.O. Box 128, SF-00101 Helsinki, Finland, Annual subscription price is FIM 250. Exchange inquiries can be addressed to the editorial office.

Tilaukset ja tiedustelut pyydetään osoittamaan toimitukselle. Silva Fennican tilaushinta kotimaahan on 180 mk, ulkomaille 250 mk. Seuran jäsenille lehti jaetaan jäsenmaksua vastaan.

This journal is indexed in Agrindex, Biological Abstracts, Current Advances in Ecological Sciences, Current Advances in Plant Science, Ecological Abstracts, Forest Products Journal, Forestry Abstracts, International Bibliography of Periodical Literature, Life Sciences Collection.

SILVA FENNICA

1991, Vol. 25 N:o 4

Biological systems in tree breeding

Joint meeting of IUFRO working parties
S2.04-02 and S2.02-16, in Tuusula, Finland,
September 1991

Veikko Koski (ed.)

SUOMEN METSÄTIETEELLINEN SEURA
SOCIETY OF FORESTRY IN FINLAND

Foreword

Biological Systems in Tree Breeding was the topic of a joint meeting of two IUFRO working parties, S2.04-02, Breeding theory and progeny testing, and S2.02-16, Seed orchards. The indoors sessions were held in Tuusula, Finland September 10–15, and the adjunct study tour to Central Sweden took place September 16–19. There were 75 participants from 22 countries during the Finnish part of the meeting. Unfortunately, not all of them were able to join the nice voyage and study tour, and so during the latter part we were only 38 visitors.

The aim of the meeting was to strongly point out that tree breeding, among many other things, has reached an obligatory check point. General goal of tree breeding used to be “to solve a special problem or to produce a specially desired product” (Zobel and Talbert 1984). Conventionally the main method has been selection for the relevant phenotypic character. The theory has rather exclusively been based on quantitative genetics and biometry. Rapid development of computers has allowed application of more and more complex formulae and extensive empirical data. The sophisticated statistical models cannot be more than black-box models! A profound understanding of the biological mechanisms would certainly improve many efforts belonging to genetic improvement. Significant progress has been made in the field of biological research, especially in physiology, molecular biology, and biotechnology.

The undeniable change of the global environment as well as the public attitude to pollution and biodiversity must not be neglected, when breeding strategies and mass propagation methods are to be planned.

The work of the actual meeting was organized into four main sessions. For each session

one keynote speaker had been deliberately chosen. The main sessions and speakers were:

1. Biological systems in tree breeding, Gösta Eriksson
2. Biomass production and allocation in trees, Don Dickmann
3. Vegetative propagation and biotechnology, Hely Häggman
4. Sexual reproduction, Władysław Chałupka

In addition, 10 other papers and 16 posters were presented. Tore Skrøppa and Hans Roulund acted as observers during the meeting. Their summary of the main points is given below. All papers that arrived in due time, and that were accepted in the normal referee inspection of the journal are published in this special issue of *Silva Fennica*.

On behalf of the organizing committee I have the pleasure to thank all participants and our technical staff. Last but not least we are indebted to our sponsors:

The Academy of Finland
The Ministry of Agriculture and Forestry
The Society of Forestry in Finland
The Central Association of Finnish Forest Industries
Finnish Forestry Association
Kemira
Hankkija Plant Breeding Institute
Lännen Tehtaat

Their economical support made it possible to invite several researchers, and allowed all of us hospitality and some extra comfort.

Veikko Koski