

from Plants to Products

© VSSD

First edition 2008

Published by VSSD

Leeghwaterstraat 42

2628 CA Delft

The Netherlands

telephone +31 15 27 82124

telefax +31 15 27 87585

e-mail: hlf@vssd.nl

internet: www.vssd.nl/hlf

URL on this book: www.vssd.nl/hlf/d009.htm

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form or by any means, electronic, mechanical, photo-copying, recording, or otherwise, without the prior written permission of the publisher.

Printed in The Netherlands

NUR 940, 950

Keywords: crops, technology

ISBN-13 978-90-6562-177-1

from Plants to Products

Van Iterson Jr and useful plants in the

Botanical Garden of Delft University of Technology

Pieter van Mourik

Gerard van der Veen



Authors

Pieter van Mourik
Gerard van der Veen

Photography

Jan Eekhout

Design and layout

© Tieme Dekker Grafische Vormgeving

Translation

Wordsmiths Translations, The Hague NL

Map and DVD Growing Solutions

© Botanische Tuin TU Delft

Text, photographs and idea for the guide

© authors and photographer

Contents

A Word from the Dean	6
Foreword	8
1. Van Iterson Route in TU Delft Botanical Garden	10
2. From Plant to Technology	46
3. Van Iterson Jr and the TU Delft Botanical Garden	50
4. Plants and Products	58
5. The engineer and the ‘cornflowers’	120
Index of plants and products	128
Index of common names	138
References	144
List of Historical Illustrations from the Van Iterson Jr Collection	146
About the authors of this guide	148
General Index	150

Map (on the inside of the jacket flap)

DVD Growing Solutions (on the inside of the back flap)

A Word from the Dean

The origin of the study of chemical engineering at Delft University of Technology, and therefore of the current programmes in the domains of the biosciences and molecular sciences (chemistry), lies partly in the processing of plants and their botanical products. Plants in botanical gardens demonstrate the vastness and variety of the plant kingdom. The wonder and insight thus generated lead in turn to the desire to protect our botanical heritage. That is the role of botanical gardens at home and abroad. Moreover the mission of the Botanical Garden at Delft University of Technology is to explore the richness of the plant kingdom and to contribute to the sustainable use of vegetable substances and products. The basis of this mission was laid by the founder of the TU Delft Botanical Garden, Professor Dr G. van Iterson Jr. During his long professorship (1907–1948) Van Iterson Jr examined the relationship between plants and their applications. His chair at the time came under the Department for Chemical Technology, one of the predecessors of the present Faculty of Applied Sciences. At the beginning of the 21st century his approach is proving to be just as relevant as it was in his day, as the recently produced DVD film *'Growing solutions'* reveals.

The collections of the Delft Botanical Garden, and the research carried out there, offer our University of Technology a unique opportunity to contribute to exploring openings for sustainable development and ways of securing our future and that of subsequent generations. Our future has to be sustainable if we are to have a future at all. The garden, its collections and its research resources are unique for a university of technology, certainly in The Netherlands. Moreover TU Delft Botanical Garden offers a very original angle on the technical sciences, besides being of great cultural, historical and recreational value.

To commemorate Van Iterson's professorship a guide to plants and their uses is being published. The guide gives readers an idea of the typically Delft approach to the extraordinary wealth of the earth's plant kingdom. *'From Plants to Products'* takes readers on a tour of dozens of plants, beautiful to look at and important because of their uses. Photographs and historical drawings illustrate the tour.

This publication meets a longer felt need for a general, readable guide on the origins, history, collections and approach of TU Delft Botanical Garden. We hope this guide will help many people to discover or rediscover the TU Delft Botanical Garden and experience how important this garden is for a sustainable future.

Delft, Spring 2008.

*Professor Karel Layben,
Dean of the Faculty of Applied Sciences,
Delft University of Technology.*



Foreword

Plants for many people fall in two categories: indoor plants and outdoor plants. Indoor plants you look after yourself; outdoor plants look after themselves or someone else does. Outdoor plants in turn can be subdivided into wild plants and the plants that grow in parks, public gardens, farms and market gardens, ordinary gardens and botanical gardens. The plants in botanical gardens are the pampered stars in the botanical firmament. They are there to be studied and to demonstrate how vast and diverse the plant kingdom is. Botanical gardens, whether they are in The Netherlands or abroad, have an irreplaceable role to play. By demonstrating the botanical richness of our planet botanical gardens can encourage people to appreciate that natural wealth. That appreciation can contribute to the sense of wonder and hence to the protection of natural diversity. The Botanical Garden of Delft University of Technology (TU Delft for short) has an additional mission and that is to explore the richness of the plant world and to contribute to investigating sustainable uses of the substances and products derived from plants.

The basis for the mission of the Botanical Garden of Delft University of Technology was laid by its founder, Dr G. van Iterson Jr, who in 1907 was one of the first to be awarded a doctorate with distinction, at the then Technische Hogeschool or Institute of Technology in Delft. In the very same year he was appointed to a professorship which he was to hold until 1948. In 1907 Van Iterson Jr was only 29 years old and he began his work with great verve and intelligence. At the beginning of the 21st century the principles he formulated and the links he made between plants and the substances and products derived from them have retained their topical significance. During his lengthy professorship Van Iterson Jr explored these relationships in manifold ways, which remain relevant to this very day. The latter is illustrated by *'Growing Solutions'*, the DVD film produced by TU Delft's Botanical Garden, which is enclosed in this guide.

To mark the anniversary of Van Iterson Jr's appointment to his chair in 1907 it was decided in 2007 to publish a guide to plants and their uses. *'From Plants to Products'* is an illustrated guide to dozens of plants in the Botanical Garden that are not only beautiful to look at but are equally important because of their applications. The illustrations have been taken from available historical teaching and research material, which Van Iterson Jr collected at the time and which were made by illustrators of artistic merit. They are accompanied by contemporary photographs of plants from the Botanical Garden's collection. From the very first chapter

readers can make a unique journey through the Botanical Garden without leaving the comfort of their armchair. Having reconnoitred the geography, ensuing chapters introduce readers to the founder of the TU Delft Botanical Garden and to the plants that form the link between botany and technology. Numbered references to sources for these texts are referred to between square brackets []. Specific references can also be found in the Index of plants and products. In a nutshell, the guide will allow the reader to return time and again on a virtual visit to the TU Delft Botanical Garden and will hopefully provide inspiration to visit the beautiful garden in person. For the truth is, a plant only really comes to life in the flesh, so to speak. By visiting the Botanical Garden, readers can see for themselves how important it is to experience plants with their own eyes. As said before, Van Iterson's approach has retained its relevance even nowadays. So in the selection of the plants, products and research cases, it was decided to make no distinction between the 'old' examples and the 'topical' cases.

The authors of this guide are extremely grateful to all those who have helped them. Special mention should be made of W.N.J. Ursem, scientific director of the TU Delft Botanical Garden, B. van den Wollenberg, manager of the collection of the TU Delft Botanical Garden and H.J.G. ten Hoopen, former member of the scientific staff of the TU Delft Kluwyer Laboratory for Biotechnology, for their many critical, textual and substantive contributions. Thanks, too, to the Dean of the TU Delft Faculty of Applied Sciences, Professor K. Luyben, for his help in consulting the archives of the Faculty and of the University and to the staff of the Faculty secretariat, notably to Mrs I. Hagman, for their practical assistance. Our appreciation also goes to the voluntary members of staff of the Historical Collections of the Kluwyer Laboratory, Mrs Eefje Kooiman and Mrs Truus ten Hoopen, for their research in these collections. It was thus for example that the historical illustrations were traced and made available digitally by the curator of these collections, Dr L. Robertson. R.A. Korving (TU Delft Science Centre) is acknowledged for making available the illustration showing the pandanus hat from the Collection of this Centre.

The compilers also thank the publisher, Jacques Schievink, for his active involvement. The Society of Friends of the TU Delft Botanical Garden (*Vereeniging van Vrienden van de Delftse Botanische Tuin*) generously sponsored the guide financially. The authors would be glad to hear from readers who can provide further information that contributes to a further development of the guide.

Delft, Spring 2008

Pieter van Mourik & Gerard van der Veen