

Are Barcodes Dead?

Inventory of living plant collections using optical technology

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Robertskruid

Geranium robertianum L.

Geraniaceae

Robertskruid is gemakkelijk te herkennen aan de samengestelde bladeren met deelblaadjes die elk weer zijn ingesneden. De plant helpt tegen ontstekingen van ogen en mond, huiduitslag en dauwvorm. Vanwege de rode herfstkleur van de bladeren geloofde men vroeger in een toepassing bij ziektes aan het bloed (signatuurleer).

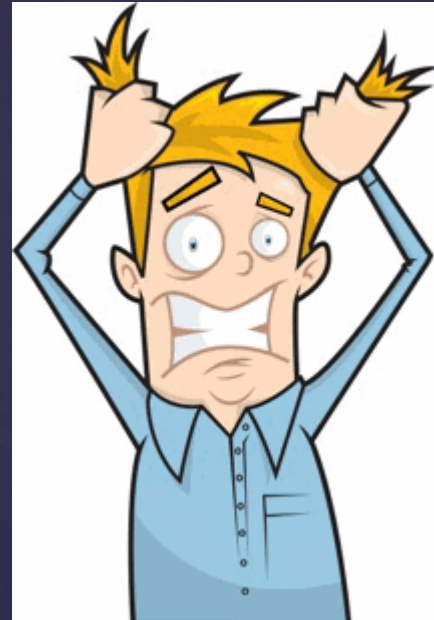
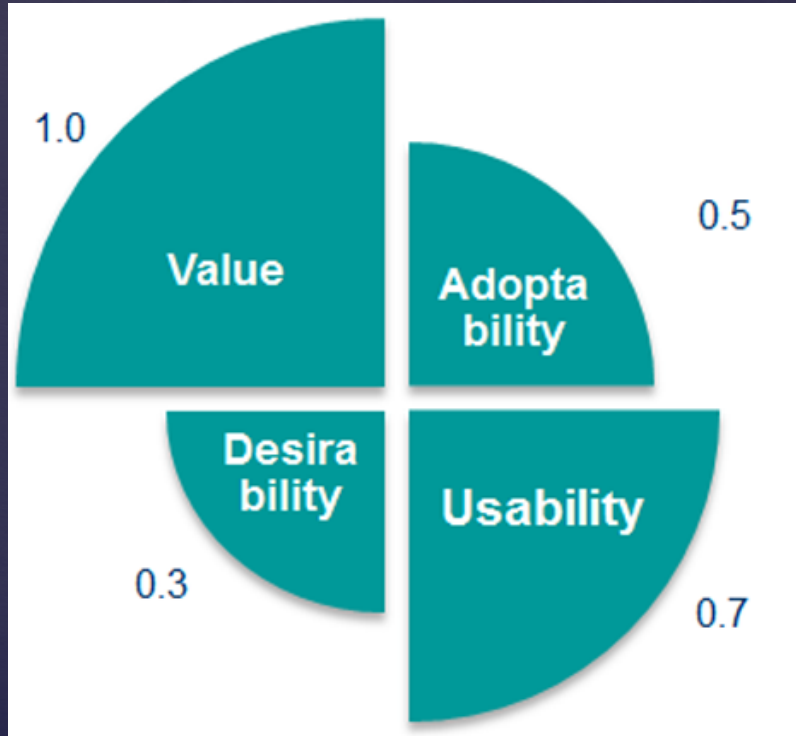
Gematigde streken Noordelijk Halfrond



204178

Decoration

We just want stuff that works!



1D Barcodes

UPC-A



0 123456 7890

Interleaved 2 of 5



1234567890

Code 128



Code 128

EAN-13



9 780330 290951

Code 39



BC321

Codabar



A13579B

Code 93



123456-9\$

Code 2 of 5



123456

2D Barcodes

PDF417



Car Registration

DataMatrix



QR Code

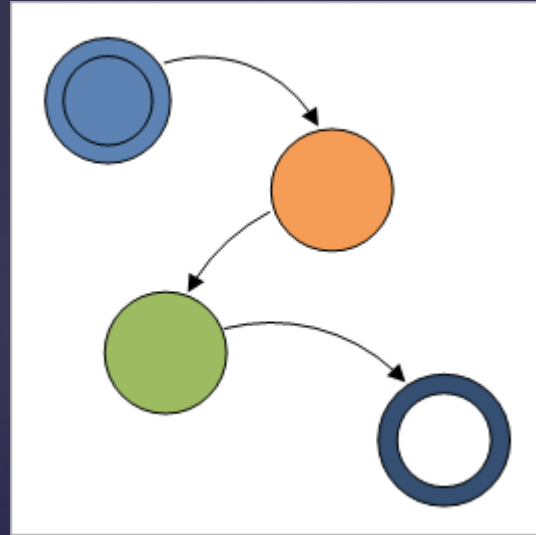


Numbers

How do they get it to work?



Technology + Workflow + People



Workflows

- ❖ View and update accession
- ❖ Update plant status
- ❖ Add to a list

Three examples

From Hortus Botanicus Amsterdam

1. Seed accessions



2. Nursery

- ❖ Sowing
- ❖ Germination
- ❖ Planting out



3. Re-organizing perennial beds

- ❖ Move plants
- ❖ Scan to create new list for each bed
- ❖ Update inventory



More possibilities

- ❖ Planning and tracking biological control
- ❖ ...

What did we learn?

Technological / Practical

- ❖ Use top quality hardware
- ❖ Integrate Hardware and Software tightly
- ❖ Ensure high performance and reliability
- ❖ Use fault tolerant barcodes
- ❖ Contrast, Reflection, Size
- The versatility of “Tasks”
- ❖ Inventory is very quick
- ❖ No transcription errors
- ❖ Data capture easier to delegate
- ❖ Rely on data being captured
- ❖ Records are up to date
- Improved Data Quality

BARCODES ARE DEAD, LONG LIVE BARCODES!
IMPROVING THE INVENTORY OF LIVING PLANT COLLECTIONS
USING OPTICAL TECHNOLOGY

Reinout Havinga¹ & Havard Ostgaard²

ABSTRACT

The use of barcodes for record keeping in botanic gardens has been pioneered before, but attempts have not always been successful. It has even been claimed that, for use in living collections, barcodes are altogether obsolete. This is difficult to imagine given the success of barcodes in almost any professional logistic or auto-ID application. We have tried to find the ‘sweet spots’ of barcode use and have implemented the technology at the Hortus Botanicus Amsterdam. Integrated with the list-making functionality in the collection management software, barcodes have proved to be an invaluable tool in improving the quality and accuracy of the inventory.

INTRODUCTION

Two problems existed at the Hortus Botanicus Amsterdam (AMD) that led to the development of barcode-supported record keeping. Firstly, serious backlogs in the inventory

Resources

- ❖ **Sibbaldia: the Journal of Botanic Garden Horticulture**
Barcodes are dead, long live barcodes! Improving the inventory of living plant collections using optical technology
<https://journals.rbge.org.uk/index.php/rbgesib/article/view/196>
- ❖ **Barcodes**
<https://en.wikipedia.org/?title=Barcode>
- ❖ **Hortus Botanicus Amsterdam**
<https://www.dehortus.nl>
- ❖ **IrisBG – Botanical Garden Collection Management**
<http://www.irisbg.com>
- ❖ **The use of bar-codes beyond the supermarket**
Aplin, et al. National Botanic Garden of Belgium, Meise, Belgium, 2007
<http://www.bgci.org/files/Wuhan/PapersConserving/Aplin.pdf>

Questions?



Thank you

Reinout Havinga



Havard Ostgaard

