JOHANNES GUTENBERG UNIVERSITÄT MAINZ

Botanischer Garten

The Systematic Garden – How to manage missing taxa?

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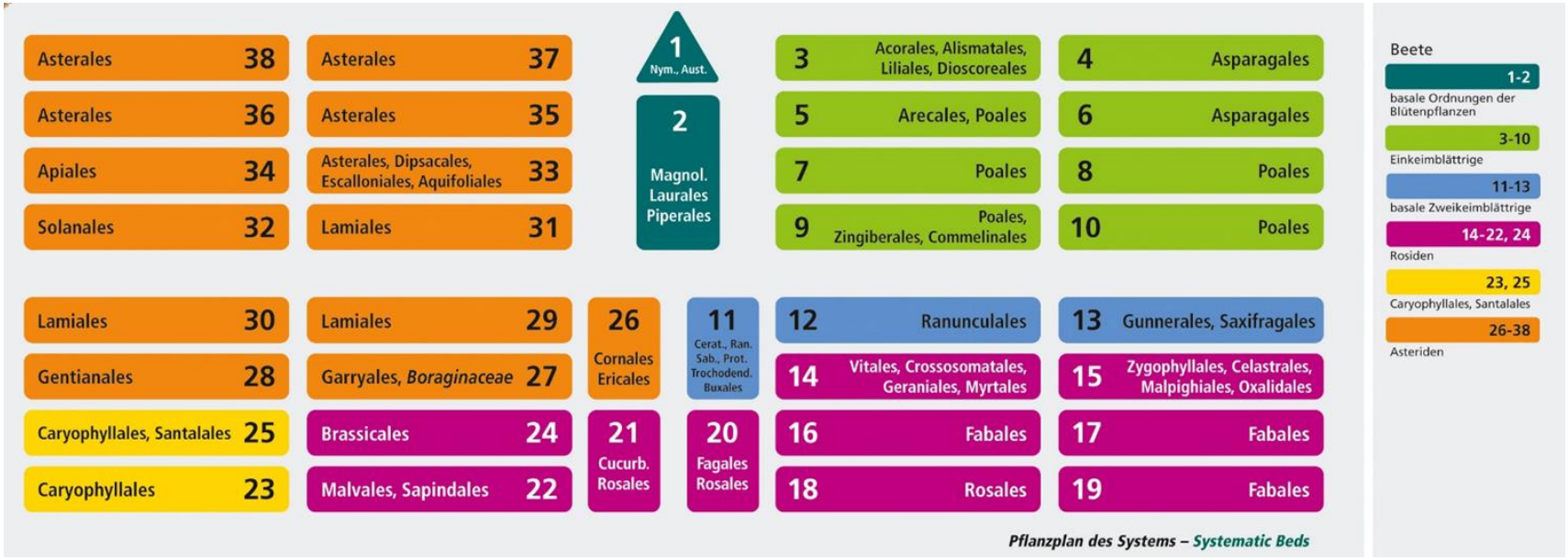
Botanischer Garten

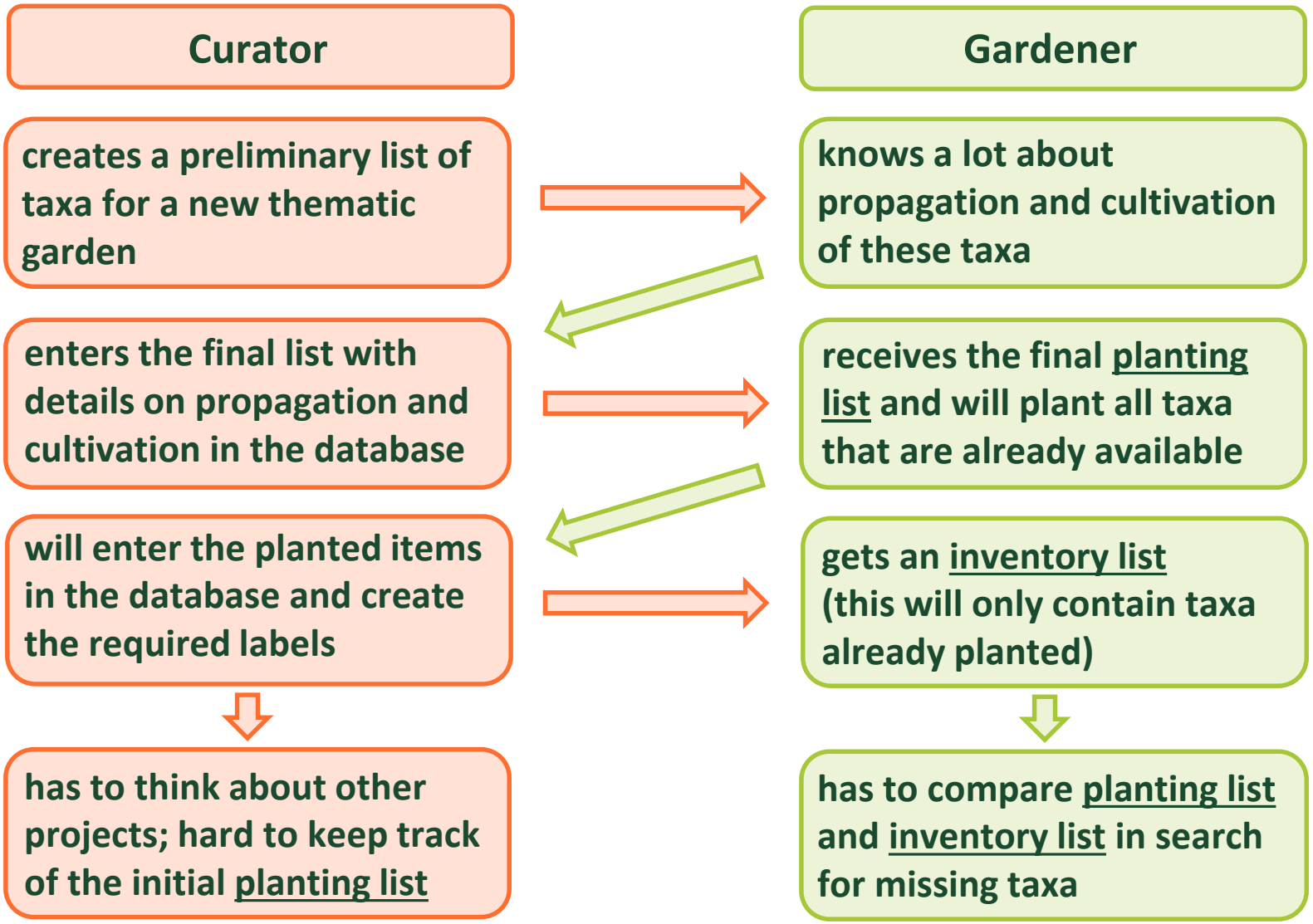
- garden founded in 1946
- permanent staff: 27 gardeners, head gardener, curator, education officer
- size roughly 9 hectare
- about 8500 taxa

The Systematic Garden

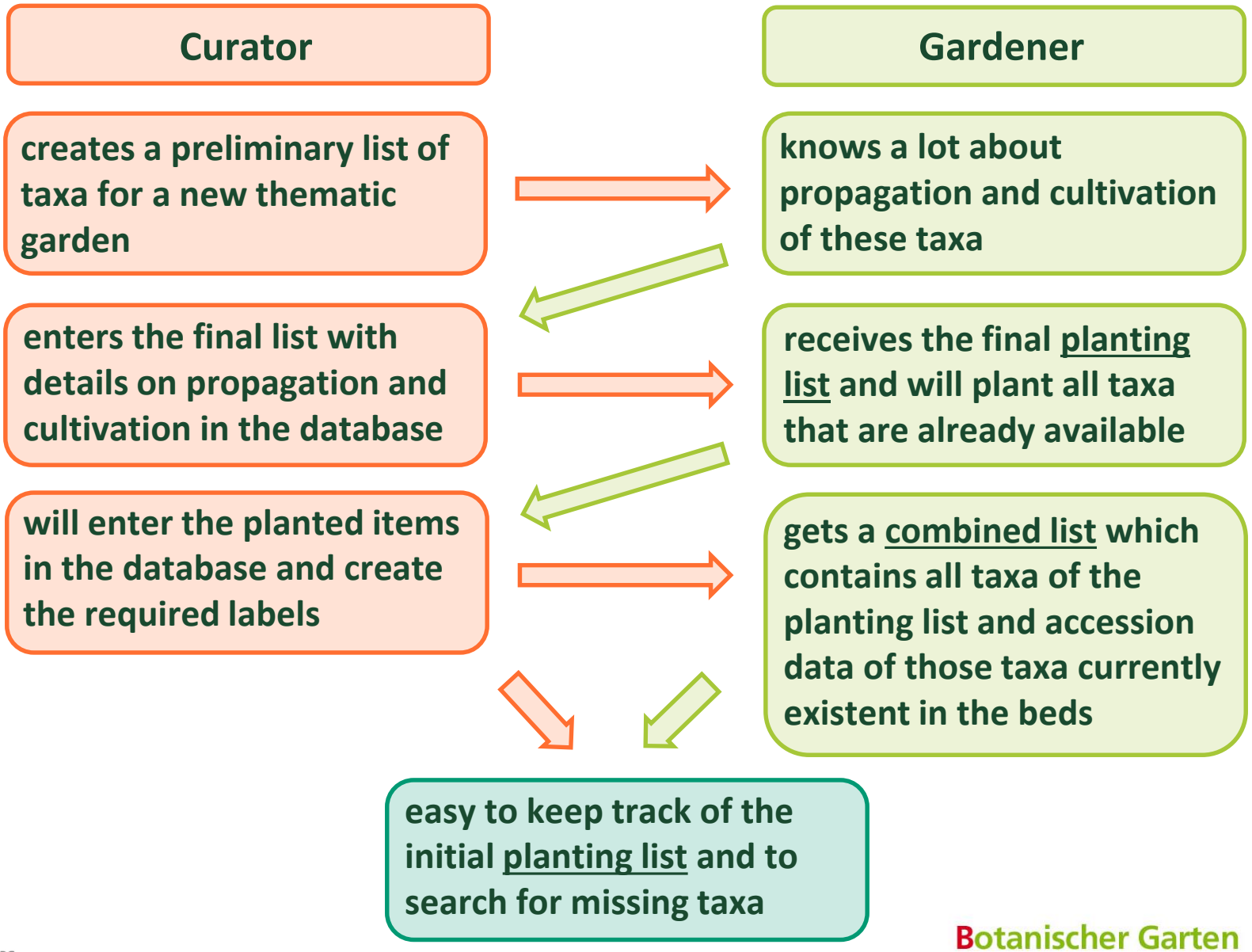


- one of the largest Systematic Gardens with about 2000 taxa, many annual and biennial species
- families and genera arranged according to APG II (and APG III in part)
- wealth of information on propagation, cultivation, winter protection, etc. for each individual species
- gardeners receive lists with information on <u>all taxa</u> destined in the beds

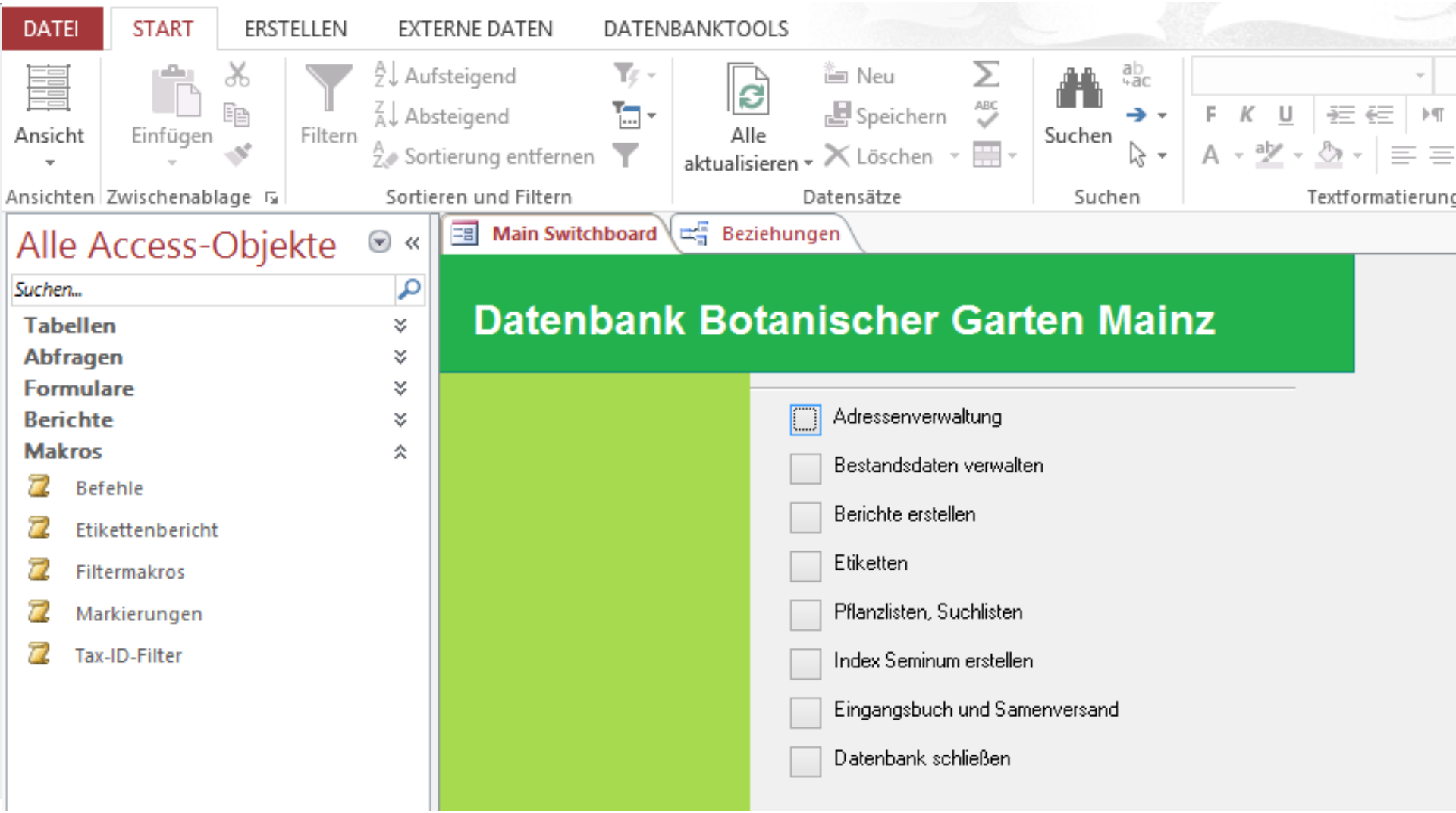
The thematic Garden – typical workflow



The thematic Garden – ideal workflow



From 2000 to 2015 we used a MS Access database



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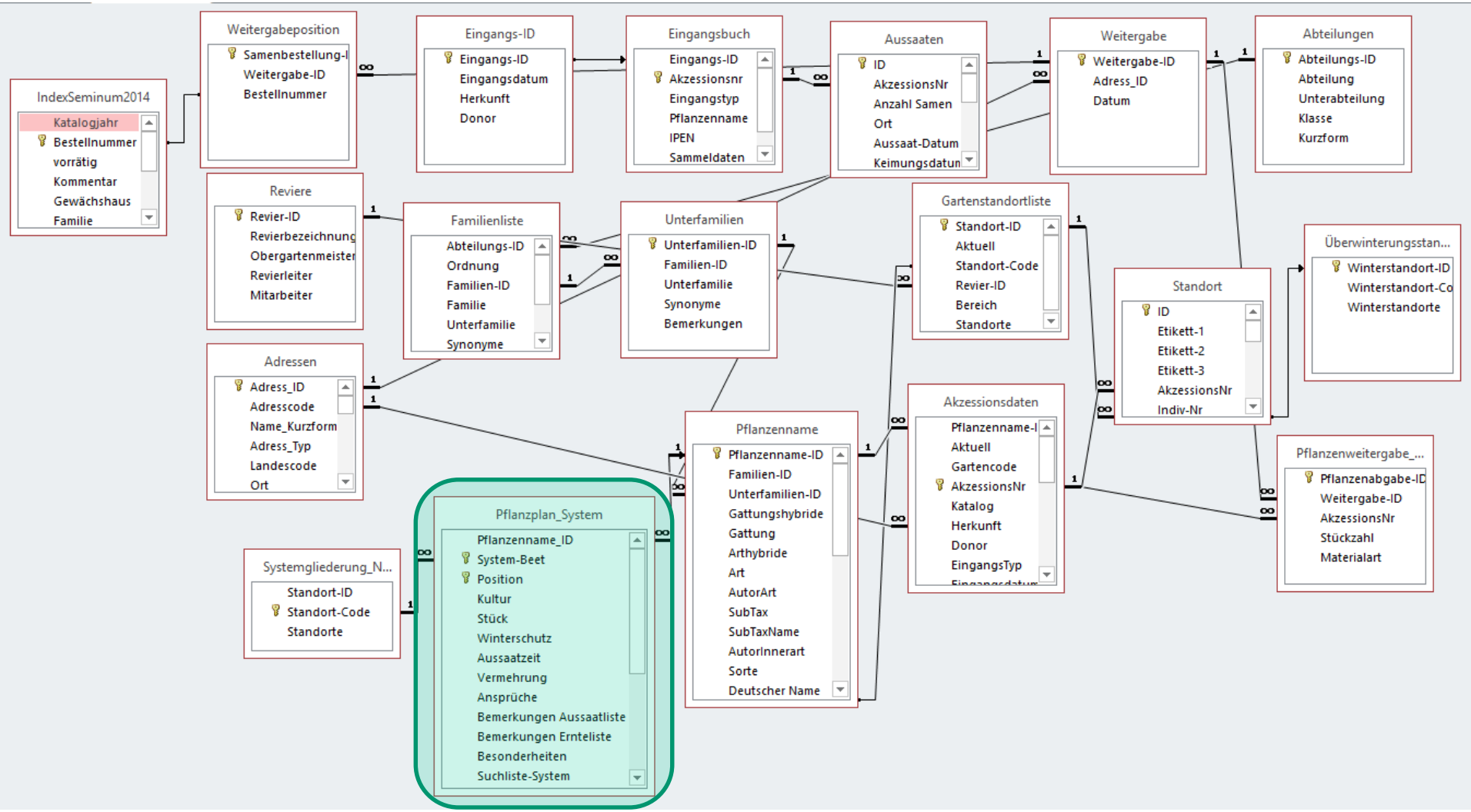

Sowing-List in alphabetical order

Aussaatliste Systematische Abteilung (Teil I)

Pflanzenname	Beet	Such.	AkzNr	Best.	Kult.	Ernte	Aussaat	Stück	Bemerkungen	Saat	Pikiert	Gepfl.
Acorus calamus	SYS-03a	☐	19--23210	Ja	p							
Aegilops geniculata	SYS-07b	☐	19--21580	Ja	a		III	20	Direkt in Mt 35 im Kasten			
Aegilops speltoides	SYS-07b	☐	19--21570	Ja	a		III	20	Direkt in Mt 35 im Kasten			
Aegilops triuncialis	SYS-07b	☐	201202603	Ja	a		III	20	Direkt in Mt 35 im Kasten			
Agapanthus africanus	SYS-06b	☐	19--53170	Ja	p-k							
Agropyron cristatum	SYS-07b	☐	19--21460	Nein	p							
Agrostis castellana	SYS-08a	☐	200311401	Ja	p							
Agrostis gigantea	SYS-08a	☐	199707314	Ja	p							
Aira caryophyllea	SYS-08a	☐	19--36920	Ja	a		III	30	Direkt in Mt 35 im Kasten			
Aira elegantissima	SYS-08a	☐	199707904	Ja	a		III	30	Direkt in Mt 35 im Kasten			
Alisma plantago-aquatica	SYS-03a	☐	19--20940	Ja	p							
Allium angulosum	SYS-04b	☐	19--37360	Ja	p							
Allium caeruleum	SYS-04b	☐	201112001	Nein	p							
Allium christophii	SYS-04b	☐	201212201	Nein	p							

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Pflanzenname	Beet	Such.	AkzNr	Best.	Kult.	Ernte	Aussaat	Stück	Bemerkungen	Saat	Pikiert	Gepfl.
Alopecurus pratensis	SYS-08a	☐	200903106	Nein	p							
Alopecurus rendlei	SYS-08a	☐	19--63030	Ja	a		III	20	Direkt in Mt 35 im Kasten			
Alstroemeria aurea	SYS-03b	☐	201309401	Nein	p				2014/15: In Anzucht HS-18			
Alstroemeria aurea	SYS-03b	☐	201308801	Nein	p				2014/15: In Anzucht HS-18			
Alstroemeria ligtu	SYS-03b	☐	19--55990	Nein	p							
Ampelodesmos mauritanicus	SYS-07a	☐	19--61160	Nein	(k)-p							
Amphicarpum purshii	SYS-10a	☑		Nein	(p) a							
Andropogon gerardii	SYS-10b	☐	201301505	Ja	p							
Andropogon glomeratus	SYS-10b	☑		Nein	p							
Andropogon virginicus	SYS-10b	☑		Nein	p							
Anemopsis californica	SYS-02	☐	19--23300	Ja	p-k							
Anthephora pubescens	SYS-10a	☐	199666180	Ja	a		III		T			
Anthericum liliago	SYS-06a	☐	19--67250	Ja	p							
Anthericum ramosum	SYS-06a	☐	19--37490	Ja	p							
Anthoxanthum aristatum	SYS-08a	☐	199803602	Ja	a		III	20	Direkt in Mt 35 im Kasten			

taxa which are presently missing are still on the list

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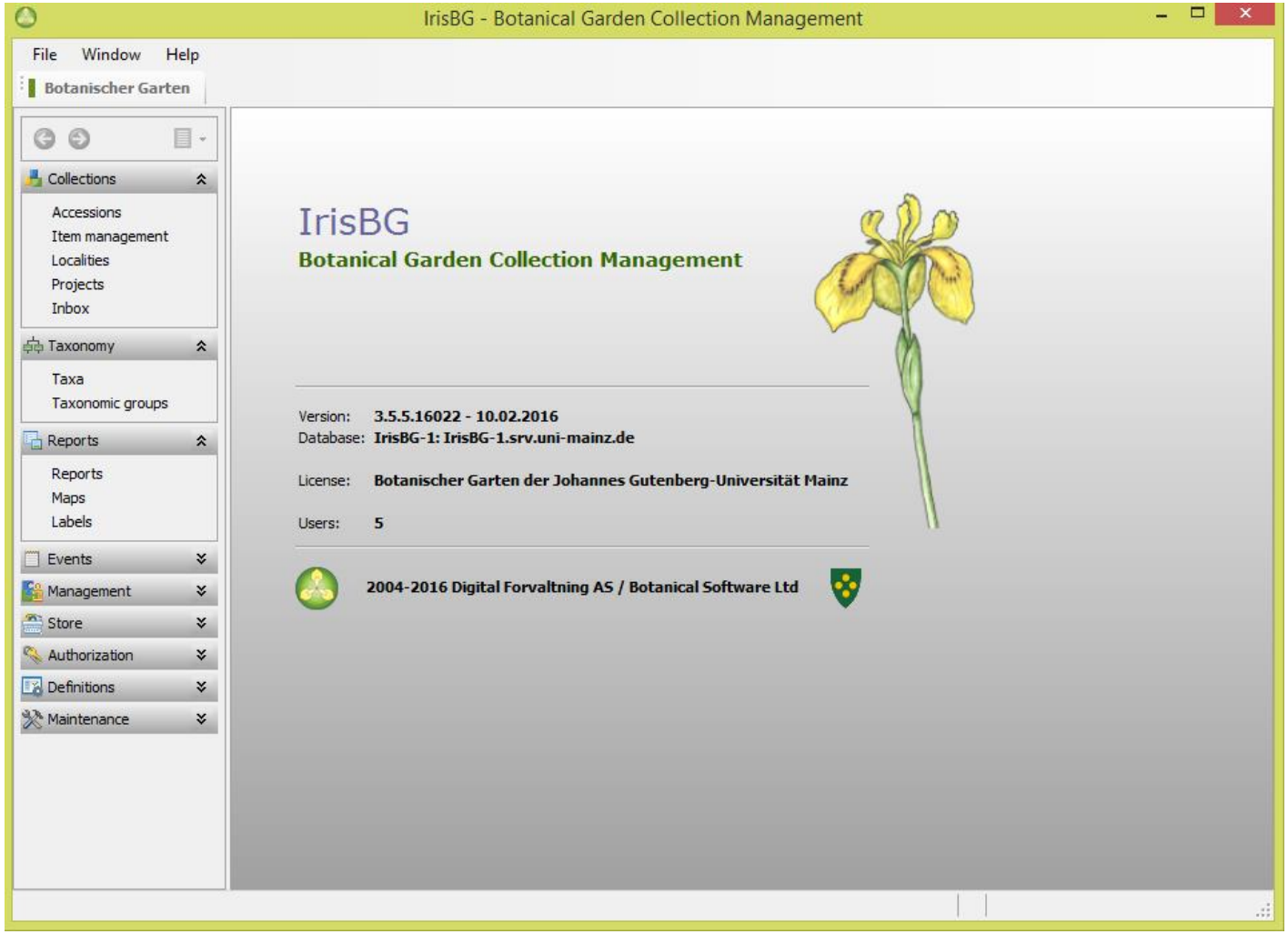
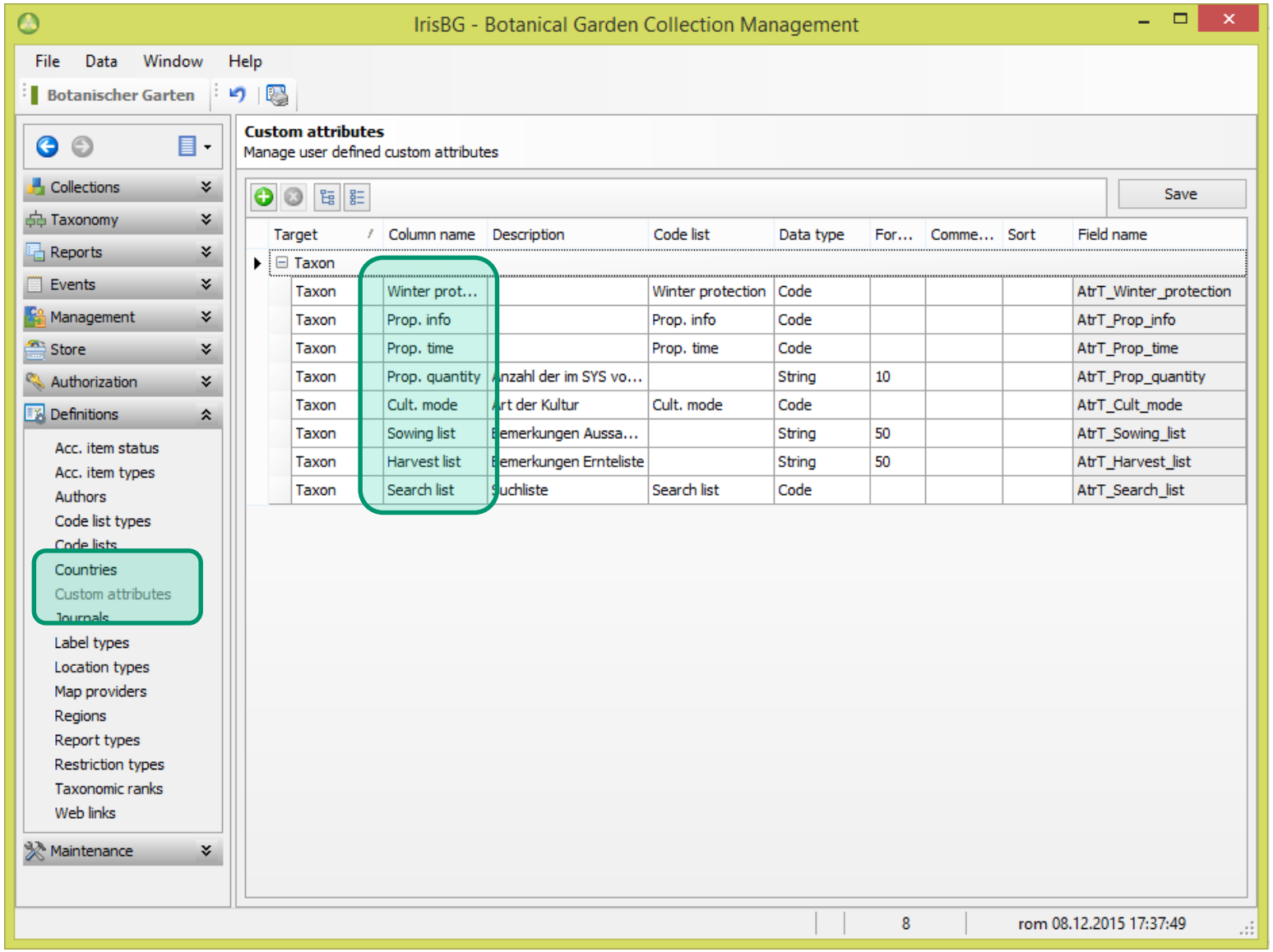
Beet	No	Pflanzenname	Familie	Kult.	AkzNr	Best.	Ernte	Suchl.	Winter	Bemerkungen
SYS-03b										
SYS-03b	01	Alstroemeria ligtu	Alstroemeriaceae	p	19--55990	Nein		☐	L	
SYS-03b	02	Alstroemeria aurea	Alstroemeriaceae	p	201309401	Nein		☐	-	2 Herkünfte in Anzucht HS 18
SYS-03b	02	Alstroemeria aurea	Alstroemeriaceae	p	201308801	Nein		☐	-	2 Herkünfte in Anzucht HS 18
SYS-03b	03	Colchicum bommuelleri	Colchicaceae	p	19--56000	Nein		☐	-	
SYS-03b	04	Colchicum cilicicum	Colchicaceae	p	199817201	Nein		☐	-	
SYS-03b	05	Bulbocodium vernum	Colchicaceae	p	200608203	Ja		☐	-	
SYS-03b	06	Gloriosa superba 'Rothschildiana'	Colchicaceae	k	200604208	Ja		☐	H	Überwinterung in Seerosenkorb trocken
SYS-03b	06	Gloriosa superba 'Rothschildiana'	Colchicaceae	k	200905201	Nein		☐	H	Überwinterung in Seerosenkorb trocken
SYS-03b	07	Zigadenus elegans ssp. elegans	Melanthiaceae	p	19--66310	Ja		☐	-	
SYS-03b	08	Zigadenus elegans ssp. glaucus	Melanthiaceae	p	19--66170	Ja		☐	-	
SYS-03b	09	Veratrum nigrum	Melanthiaceae	p	19--45150	Ja		☐	-	
SYS-03b	10	Veratrum album ssp. lobelianum	Melanthiaceae	p		Nein		☑	-	
SYS-03b	11	Smilax aspera	Smilacaceae	p	19--60000	Ja		☐	L	
SYS-03b	12	Gagea villosa	Liliaceae	p	201005101	Ja		☐	-	
SYS-03b	13	Gagea lutea	Liliaceae	p	201112002	Nein		☐	-	
SYS-03b	14	Calochortus venustus	Liliaceae	p-k	201212204	Nein		☐	D + L	Mit Dach außer in der Blütezeit
SYS-03b	15	Tulipa turkestanica	Liliaceae	p	201112009	Nein		☐	-	
SYS-03b	16	Tulipa tarda	Liliaceae	p	201112008	Nein		☐	-	
SYS-03b	17	Tulipa undulatifolia	Liliaceae	p	19--61510	Ja		☐	-	
SYS-03b	18	Tulipa clusiana var. clusiana	Liliaceae	p	201212208	Nein		☐	-	
SYS-03b	19	Tulipa polychroma	Liliaceae	p	201112007	Ja		☐	-	
SYS-03b	20	Tulipa linifolia	Liliaceae	p	201112006	Nein		☐	-	
SYS-03b	21	Tulipa praestans	Liliaceae	p	19--36240	Ja		☐	-	2011/12: eingeschlagen im Kasten
SYS-03b	21a	Tulipa orphanidea 'Whittallii'	Liliaceae	p	201112011	Nein		☐	-	

Harvesting-List

Are we able to produce our lists from IrisBG ?



Step 1: define Custom attributes and Code lists



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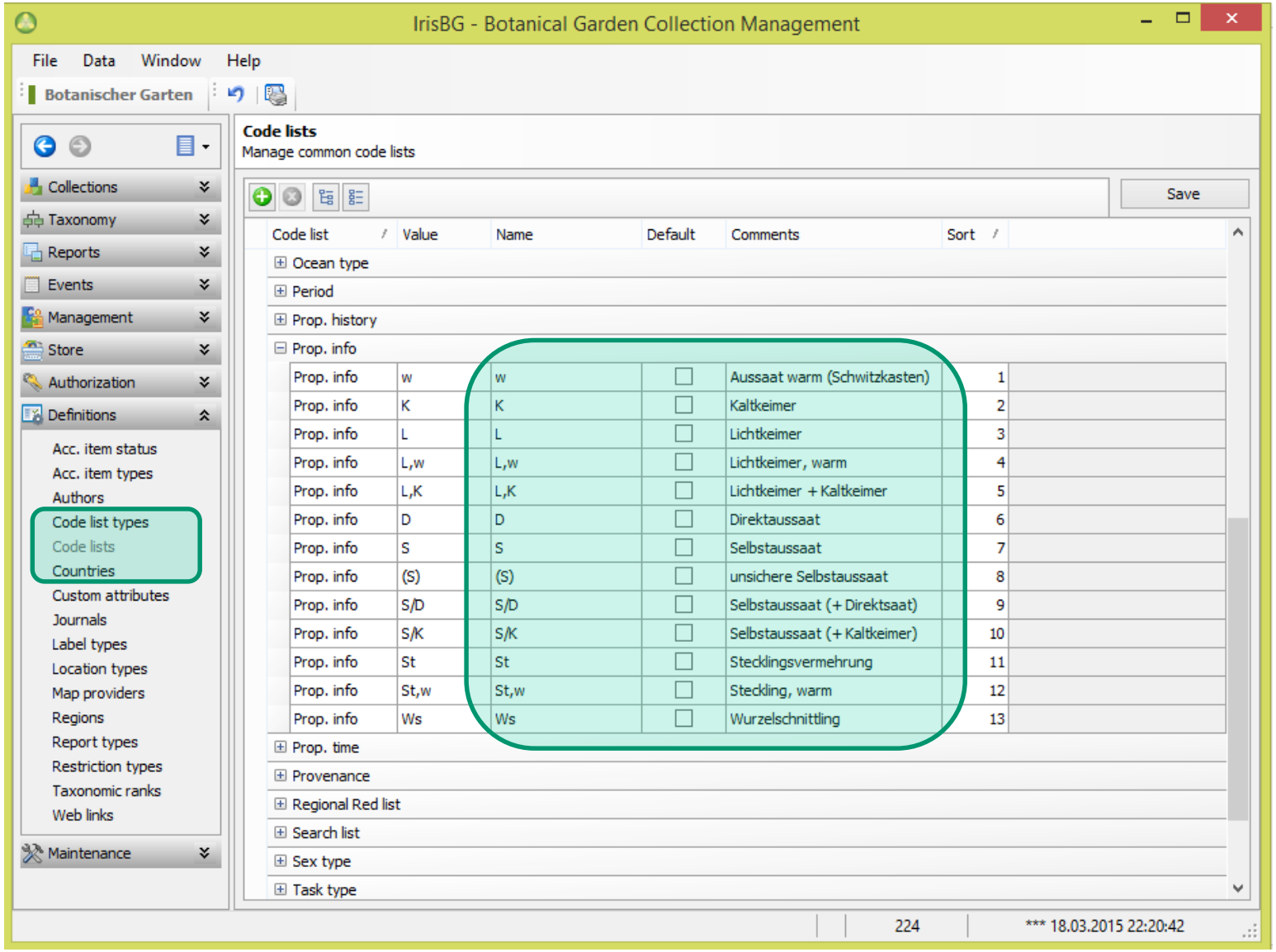
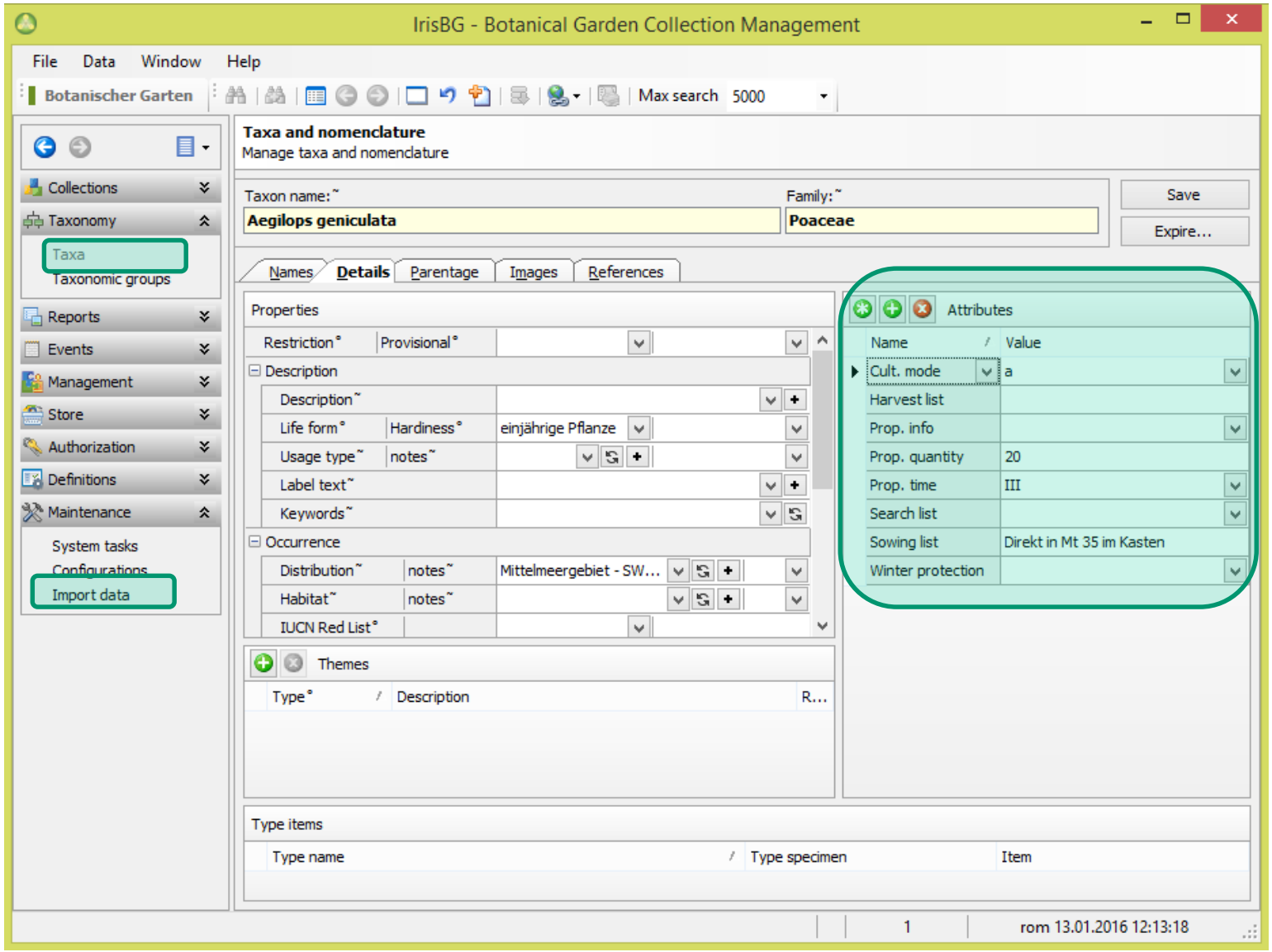
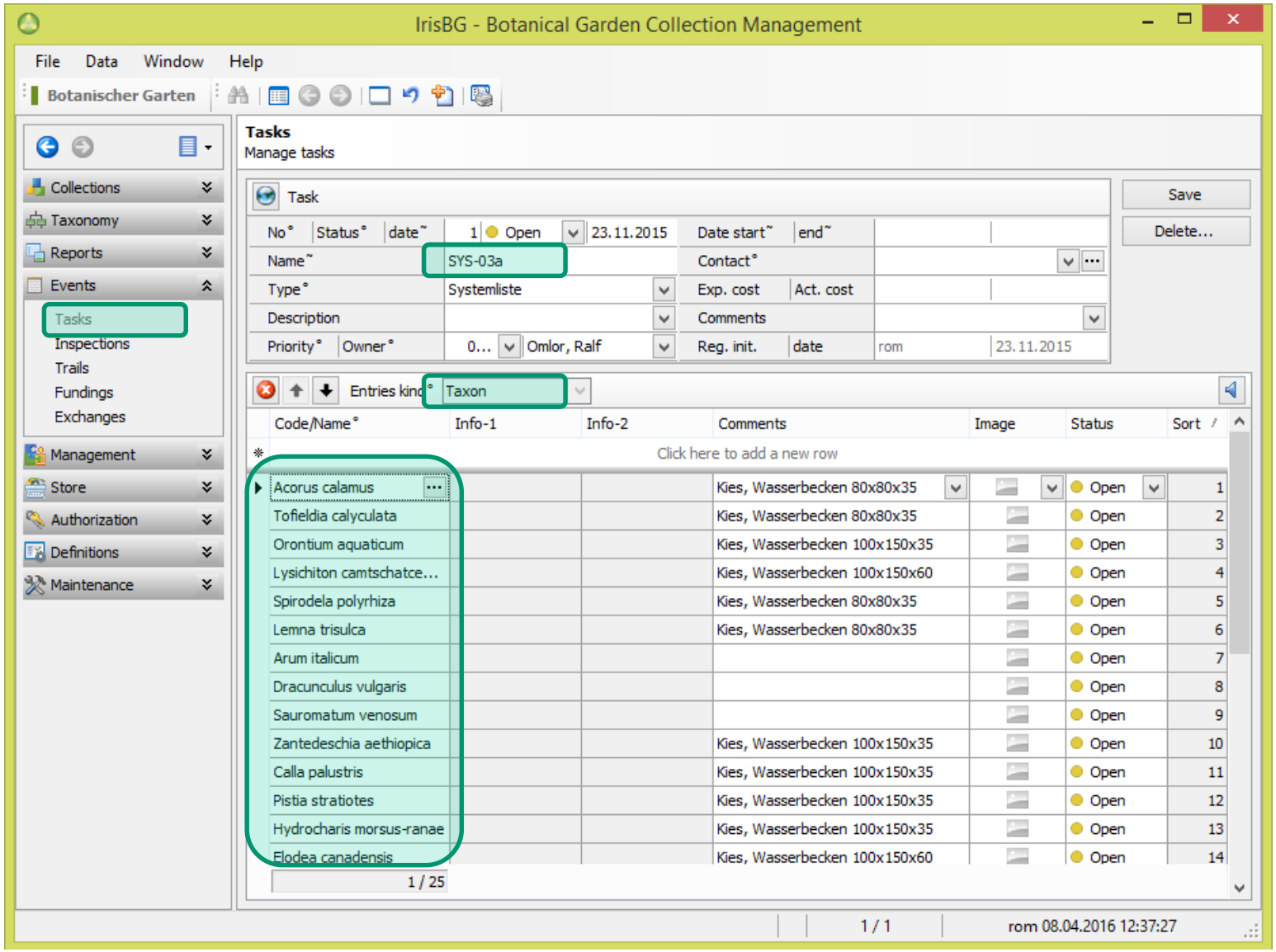


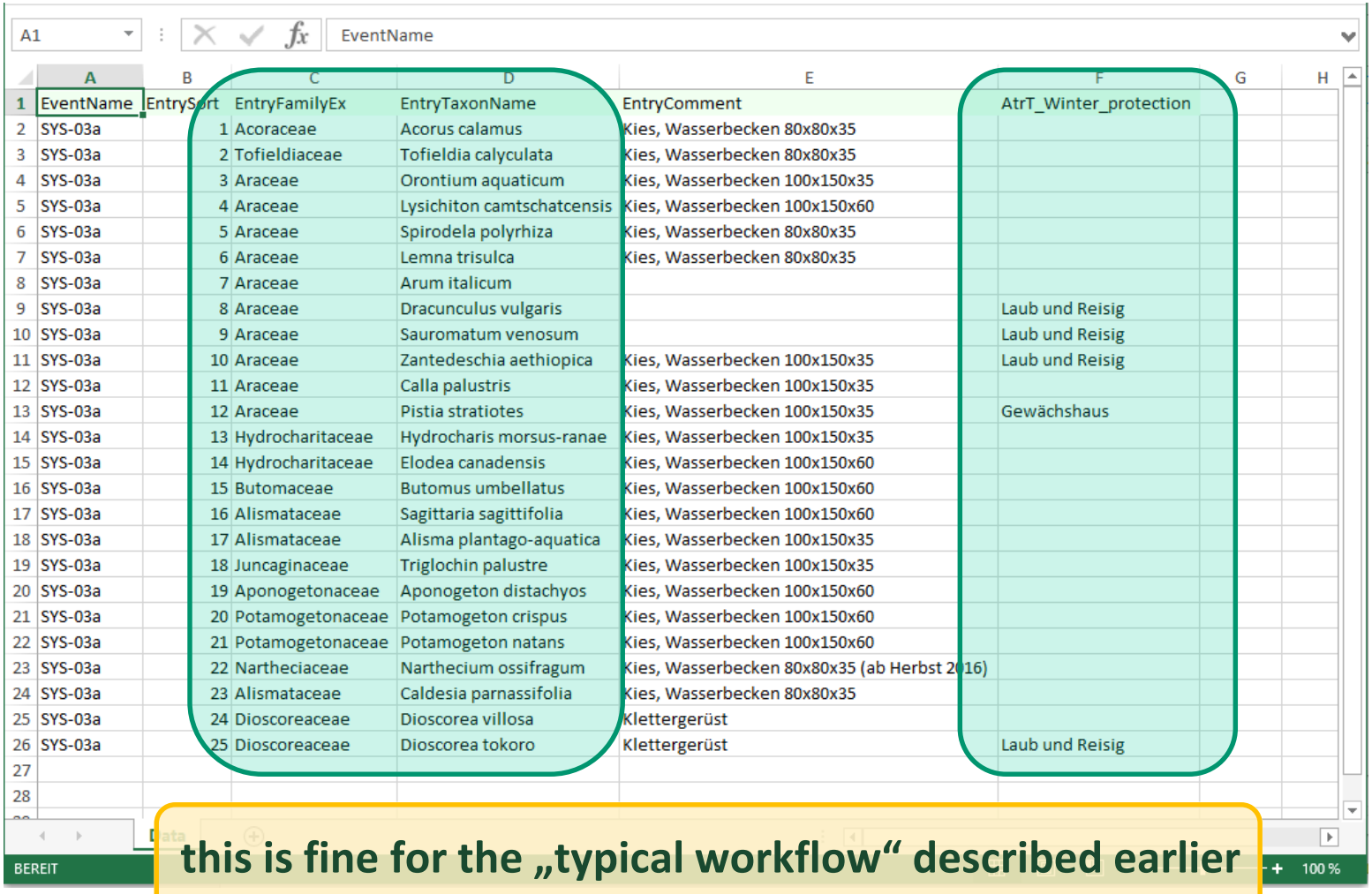
Step 2: Import your data



Step 3: define the sequence of taxa for each bed



Step 4: create a planting list for each bed



A1 | EventName

	A	B	C	D	E	F	G	H
1	EventName	EntrySort	EntryFamilyEx	EntryTaxonName	EntryComment	AtrT_Winter_protection		
2	SYS-03a	1	Acoraceae	Acorus calamus	Kies, Wasserbecken 80x80x35			
3	SYS-03a	2	Tofieldiaceae	Tofieldia calyculata	Kies, Wasserbecken 80x80x35			
4	SYS-03a	3	Araceae	Orontium aquaticum	Kies, Wasserbecken 100x150x35			
5	SYS-03a	4	Araceae	Lysichiton camtschatcensis	Kies, Wasserbecken 100x150x60			
6	SYS-03a	5	Araceae	Spirodela polyrhiza	Kies, Wasserbecken 80x80x35			
7	SYS-03a	6	Araceae	Lemna trisulca	Kies, Wasserbecken 80x80x35			
8	SYS-03a	7	Araceae	Arum italicum				
9	SYS-03a	8	Araceae	Dracunculus vulgaris		Laub und Reisig		
10	SYS-03a	9	Araceae	Sauromatum venosum		Laub und Reisig		
11	SYS-03a	10	Araceae	Zantedeschia aethiopica	Kies, Wasserbecken 100x150x35	Laub und Reisig		
12	SYS-03a	11	Araceae	Calla palustris	Kies, Wasserbecken 100x150x35			
13	SYS-03a	12	Araceae	Pistia stratiotes	Kies, Wasserbecken 100x150x35	Gewächshaus		
14	SYS-03a	13	Hydrocharitaceae	Hydrocharis morsus-ranae	Kies, Wasserbecken 100x150x35			
15	SYS-03a	14	Hydrocharitaceae	Elodea canadensis	Kies, Wasserbecken 100x150x60			
16	SYS-03a	15	Butomaceae	Butomus umbellatus	Kies, Wasserbecken 100x150x60			
17	SYS-03a	16	Alismataceae	Sagittaria sagittifolia	Kies, Wasserbecken 100x150x60			
18	SYS-03a	17	Alismataceae	Alisma plantago-aquatica	Kies, Wasserbecken 100x150x35			
19	SYS-03a	18	Juncaginaceae	Triglochin palustre	Kies, Wasserbecken 100x150x35			
20	SYS-03a	19	Aponogetonaceae	Aponogeton distachyos	Kies, Wasserbecken 100x150x60			
21	SYS-03a	20	Potamogetonaceae	Potamogeton crispus	Kies, Wasserbecken 100x150x60			
22	SYS-03a	21	Potamogetonaceae	Potamogeton natans	Kies, Wasserbecken 100x150x60			
23	SYS-03a	22	Nartheciaceae	Narthecium ossifragum	Kies, Wasserbecken 80x80x35 (ab Herbst 2016)			
24	SYS-03a	23	Alismataceae	Caldesia parnassifolia	Kies, Wasserbecken 80x80x35			
25	SYS-03a	24	Dioscoreaceae	Dioscorea villosa	Klettergerüst			
26	SYS-03a	25	Dioscoreaceae	Dioscorea tokoro	Klettergerüst	Laub und Reisig		
27								
28								

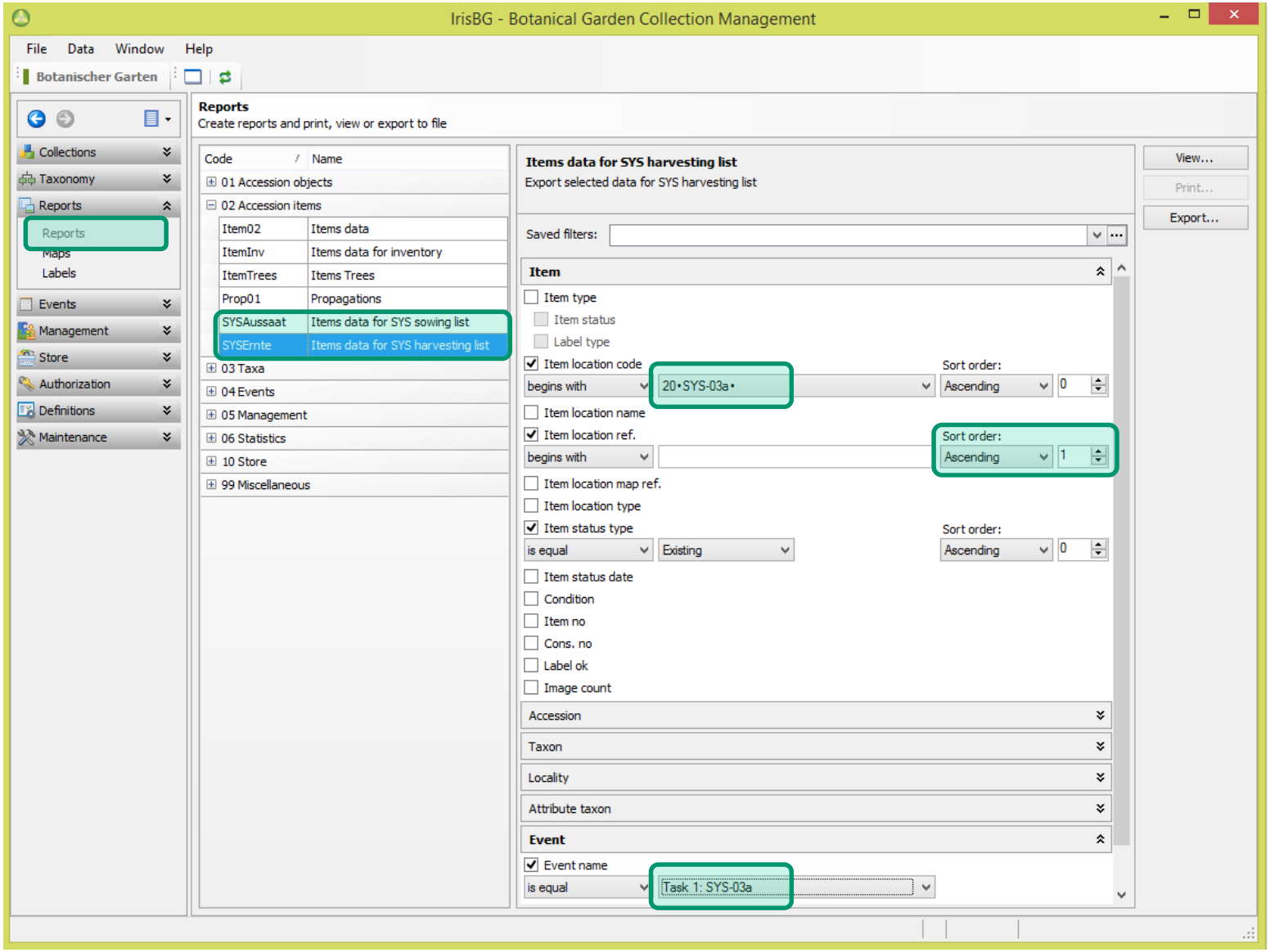
Data

BEREIT

100 %

this is fine for the „typical workflow“ described earlier

Step 5: now, try to create a combined list



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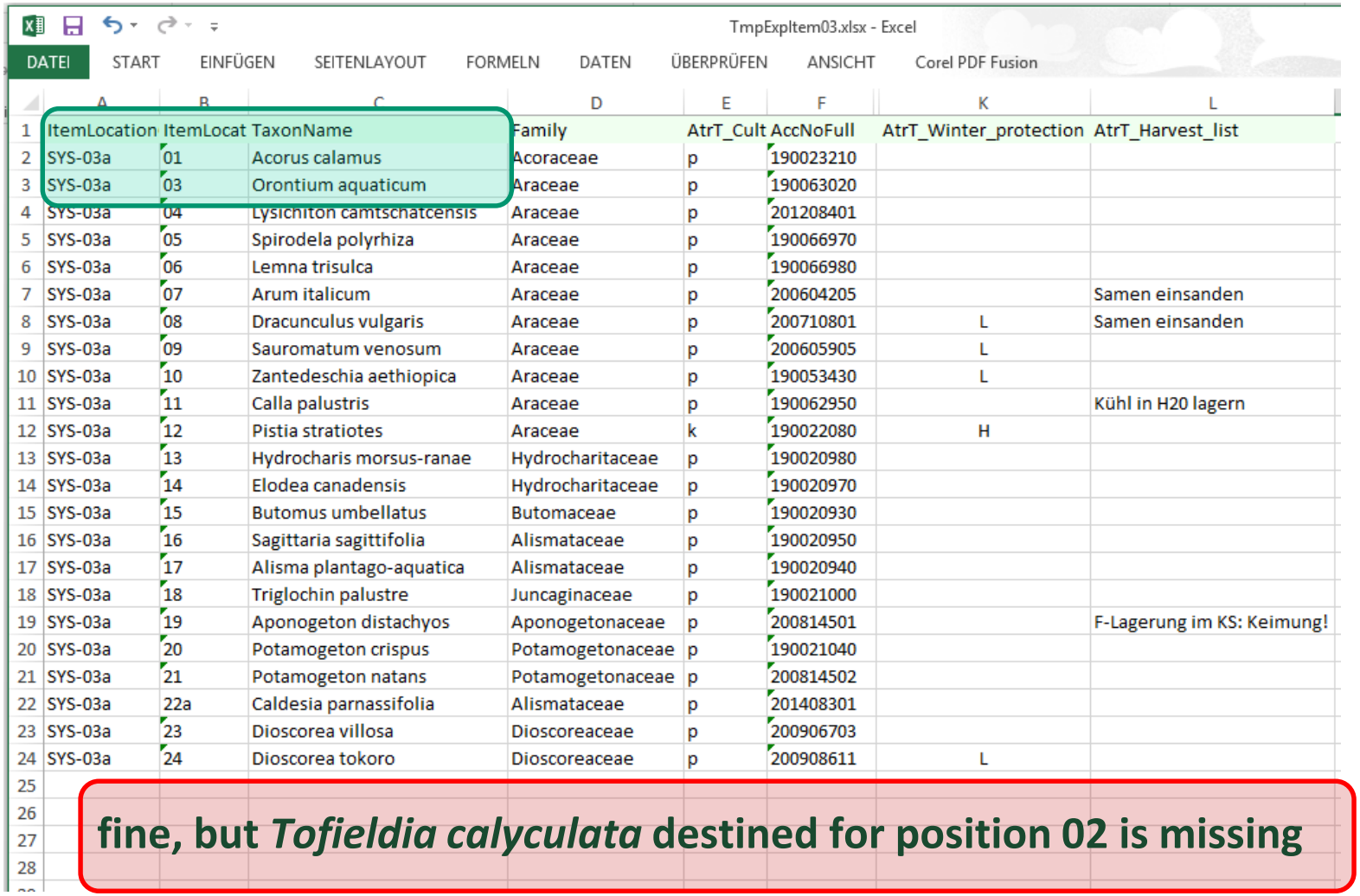
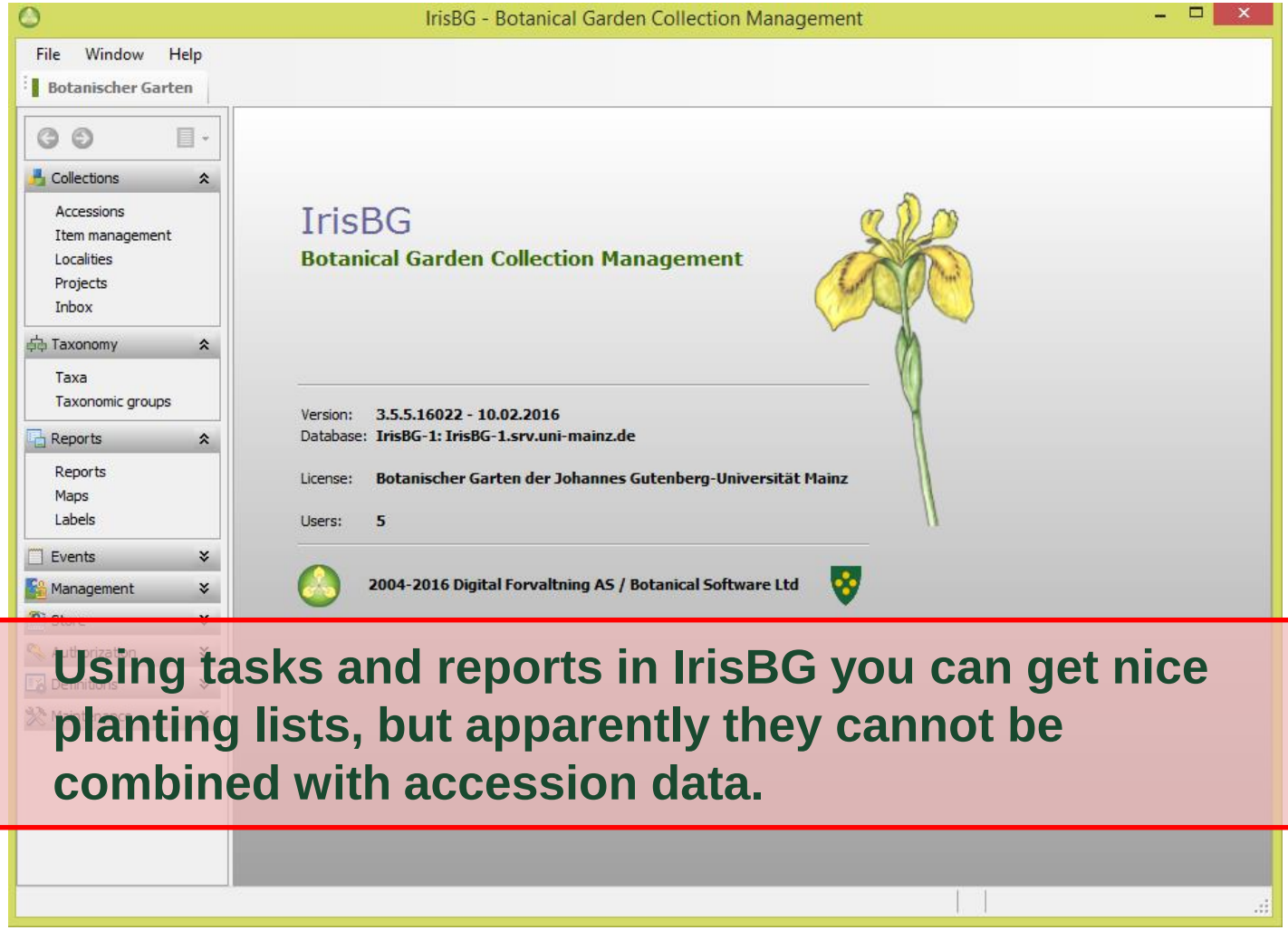


	A	B	C	D	E	F	K	L
1	ItemLocation	ItemLocat	TaxonName	Family	AtrT_Cult	AccNoFull	AtrT_Winter_protection	AtrT_Harvest_list
2	SYS-03a	01	Acorus calamus	Acoraceae	p	190023210		
3	SYS-03a	03	Orontium aquaticum	Araceae	p	190063020		
4	SYS-03a	04	Lysichiton camtschatcensis	Araceae	p	201208401		
5	SYS-03a	05	Spirodela polyrhiza	Araceae	p	190066970		
6	SYS-03a	06	Lemna trisulca	Araceae	p	190066980		
7	SYS-03a	07	Arum italicum	Araceae	p	200604205		Samen einsanden
8	SYS-03a	08	Dracunculus vulgaris	Araceae	p	200710801	L	Samen einsanden
9	SYS-03a	09	Sauromatum venosum	Araceae	p	200605905	L	
10	SYS-03a	10	Zantedeschia aethiopica	Araceae	p	190053430	L	
11	SYS-03a	11	Calla palustris	Araceae	p	190062950		Kühl in H20 lagern
12	SYS-03a	12	Pistia stratiotes	Araceae	k	190022080	H	
13	SYS-03a	13	Hydrocharis morsus-ranae	Hydrocharitaceae	p	190020980		
14	SYS-03a	14	Elodea canadensis	Hydrocharitaceae	p	190020970		
15	SYS-03a	15	Butomus umbellatus	Butomaceae	p	190020930		
16	SYS-03a	16	Sagittaria sagittifolia	Alismataceae	p	190020950		
17	SYS-03a	17	Alisma plantago-aquatica	Alismataceae	p	190020940		
18	SYS-03a	18	Triglochin palustre	Juncaginaceae	p	190021000		
19	SYS-03a	19	Aponogeton distachyos	Aponogetonaceae	p	200814501		F-Lagerung im KS: Keimung!
20	SYS-03a	20	Potamogeton crispus	Potamogetonaceae	p	190021040		
21	SYS-03a	21	Potamogeton natans	Potamogetonaceae	p	200814502		
22	SYS-03a	22a	Caldesia parnassifolia	Alismataceae	p	201408301		
23	SYS-03a	23	Dioscorea villosa	Dioscoreaceae	p	200906703		
24	SYS-03a	24	Dioscorea tokoro	Dioscoreaceae	p	200908611	L	
25								
26								
27								
28								

fine, but *Tofieldia calyculata* destined for position 02 is missing

Are we able to produce our lists from IrisBG ?



Using tasks and reports in IrisBG you can get nice planting lists, but apparently they cannot be combined with accession data.