Viability Wizard



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<u>Appendix D</u> contains revision notes pertaining to this document.

This document is online at <u>https://www.grin-global.org/docs/gg_viability_wizard.docx</u> Please consider not printing, as these GG documents are periodically updated.

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Background

Seed or plant viability is the measure of how many seeds or how much plant material in a lot are alive and could develop into plants that will reproduce under appropriate field conditions. Viability testing is crucial for the monitoring of seed conservation. CGIAR has a detailed discussion of viability testing <u>online</u>.

The GRIN-Global Viability table family has several interrelated tables:



In GRIN-Global, four Inventory viability-related dataviews are particularly important. The wizard is used to record the raw data results from germination tests into a results (summary) table.

Dataview	Purpose
get_inventory_viability	Summary table that aggregates ("rolls up") the individual results of seed germination tests.
get_inventory_viability_data	Contains the raw data results of seed germination tests
get_inventory_viability_rule	Specifies the conditions used in a germination test – the lighting conditions, optimal temperature, the substrata, days between counts, number of replicates, etc. Generally, protocols have been developed that work best for different taxa. Viability rules are stored in their own table; when a new viability test is to happen, the rule that is relevant can be selected, rather than spell out the individual conditions of the test every time a viability test is to be given.

act inventory viability rule man	The map table makes it possible to link multiple taxons (species_IDs)
get_inventory_viability_rule_inap	with multiple rules. (One viability rule may apply to many taxa.)



Dataview Examples are in shown in Appendix B.

The **Viability Wizard** consists of one main window from which you can either retrieve an existing viability test (<u>Get Existing Viability Test</u>) or create a new test (<u>Create New Viability Test</u>)

Click one of the links above, depending on your interest.

et Existing Viability Test				Create New Viability T	est		
Inventory Viability ID:			Get Test	From Order:			Create
Inventory Number:				From Inventory:			Create
Last Percent Viable:	Last Test Date:	Taxon:]			
iability Test Details							
ule Notes.			Substrata				
			Moisture				
axonomy Notes:			Prechill		2011 B		
			∧ Temp		Lighting		
			Replicates:	Total Seeds: Viability Rule	E.	Sh	iow All Rul
ability Test Notes:					-	P-101	~~~
			^	Initialize Count		Save	
			✓ Print Label:	s 1x3_Dymo_Viability_L	.abel.rpt		
iability Date							
iability Count Data							
ability Summary							

Retrieve (Get) an Existing Test

Get Test

To retrieve an existing viability test, use the textbox adjacent to the **Inventory Viability ID:** label.

}	Viability Wizard
Get Existing Viability Test	
Inventory Viability ID:	Get Test
Inventory Number:	

Input one of the following valid alternatives:

- an existing viability test ID (Ex: 1984882)
- a viability test's specific replicate # (Ex: 1984882.1 , Ex: 1984882.2 ...)
- an inventory number (Ex: Ames 20217 REI SD)



Entering a viability test's specific replicate is the preferred method. A replicate is designated by a suffix. For example, **1984882.1** indicates the first replicate of test 1984882, **1984882.2** the second, and so on. When inputting a specific replicate, you are restricted to editing that replicate's data only, which helps avoid data entry errors. (You will still be able to see the other replicates' data.)

Entering the inventory number is useful when investigating concerns regarding the viability of seeds in a packet. When entering an inventory number, the most recent viability test for that inventory will be retrieved. (If that inventory does not yet have a viability test, presently the wizard does not display any feedback.)

Get Existing Viability Test							
Inventory Viability ID:	Ames 166	9 82ncai01 SD			Get Test		
Inventory Number:	Ames 166	9 82ncai01 SD					
Last Percent Viable:	91%	Last Test Date:	Taxon:	Brassica napus			

When you scan the inventory number barcode from a seed packet, the *latest* viability test will be displayed. You can then review everything about that test including specific counts, method, notes (including rule, taxonomy, test, and individual replicates notes), pre-chill, and any other viability test information.



Viability test labels generated by the Viability Wizard contain 2D barcodes which include the specific replicate or the viability test. When one of these labels are scanned, the Viability Wizard will retrieve the data for that respective viability test or replicate. You can then edit that data.

Inventor	ry Vability I	D: 198510	3.2							Get Test		Fro	m Order:	lest			Create
Inver	ntory Numbe	er: Ames 1	1965 83nca	01 SD								From In	ventory:				Create
Last Pe	ercent Vabi	le: 95%	L	ast Test D	late: 1/2	0/2017	Tax	ion: Ame	aranthus ca	udatus							
ability Te	st Details				_	-				-					_		
ability De	ate	7 days at 4	с	-	-	and a second second			1		- who	blotters		-			
1/20	/2017	0	-				-						-				-
ability Cr	net Data							5 (Č.)									1997 1998
And the second second																	
Change	Date																
Change	Date		Norm		0	L Hard	- Caraba	. Infant	1 Aug	The	les nor	Tel Down					
Change Rep	Date Seeds		Norm	Abn	Dorm	Hard	Empty	infest	Dead	Unkn	Est Dom	Trit Dom	Crif Dom		No	te	
Change Rep 1	Date Seeds 50	100.0%	Norm 42	Abn 4	Dorm 4	Hard	Empty	Infest	Dead	Unkn	Est Dom	Tit Dom	Cnf Dom		No	te	
Change Rep 1 2	Date Seeds 50	100.0%	Norm 42	Abn 4 2	Dorm 4	Hard	Empty	infest	Dead	Unkn	Est Dom	Tit Dom	Crif Dom		No	te	
Change Rep 1 2 3	Date Seeds 50 50 50	100.0% 100.0%	Norm 42 45	Abn 4 2	Dom 4	Hard	Empty	infest	Dead	Unkn	Est Dom	Trit Dorm	Crif Dom		No	6e	
Change Rep 1 2 3 4	Date Seeds 50 50 50 50 50	100.0% 100.0% 100.0%	Norm 42 45 44	Abn 4 2 3	Dorm 4 5 3	Hard	Empty	irfest	Dead	Unko	Est Dorm	Tit Dom	Crif Dom		No	te	
Change Rep 1 2 3 4 sbilty Su	Date Seeds 50 50 50 50 50 50 50	100.0% 100.0% 100.0%	Norm 42 45 44	Abn 4 2 3	Dom 4 5 3	Hard	Empty	infest	Dead	Unkn	Est Dom	Trit Dorm	Crif Dom		No	te	
Change Rep 1 2 3 4 sbilty Su	Date Seeds 50 50 50 50 200	100.0% 100.0% 100.0% 100.0%	Norm 42 45 44 179	Abn 4 2 3 9	Dom 4	Hard	Empty	Infest	Dead	Unkn	Est Dom	Tit Dom	Crif Dorm		No	če	

Inputting the viability test with a replicate number displays the count data for the *one replicate*:

When entering the viability_ID, all of the replicates can be edited:

st Existing	Vabilty Tr	est										Create N	ew Vability	Test
Inventory Vability ID: 1985103									Get Test		From	n Order:	0	
		r: Anes 1	965 83nca	01 SD			Im	on: And		Pn	nt Laber	From In	ventory:	
ability De	ste													
1/20/	/2017	Court 2	ł.											
sability Co	unt Data													
Change	Date													
Change Rep	Date Seeds		Norm	Abn	Dom	Hard	Empty	infest	Dead	Union	Est Dom	Tit Dom	Crif Dom	Note
Change Rep 1	Date Seeds 50	100.0%	Norm 42	Abn 4	Dom 4	Hard	Empty	infest	Dead	Union	Est Dorm	Trt Dorm	Crif Dom	Note
Change Rep 1 2	Date Date Seeds 50 50	100.0%	Norm 42 48	Abn 4 2	Dom 4	Hard	Empty	infest	Dead	Union	Est Dorm	Tit Dom	Crif Dom	Note
Change Rep 1 2 3	Date Date Seeds 50 50 50	100.0% 100.0% 100.0%	Nom 42 48 45	Abn 4 2	Dom 4 5	Hard	Empty	Infest	Dead	Unko	Est Dom	Tit Dom	Crif Dorm	Note
Change Rep 1 2 3 4	Date Date Seeds 50 50 50 50	100.0% 100.0% 100.0%	Nom 42 48 45 44	Abn 4 2 3	Dorm 4 5 3	Hard	Empty	infest	Dead	Union	Est Dom	Tit Dom	Crif Dom	Note
Ability Co Change Rep 1 2 3 4 kbility Su	Seeds 50 50 50 50 50 50	100.0% 100.0% 100.0% 100.0%	Nom 42 48 45 44	Abn 4 2 3	Dom 4 5 3	Hard	Empty	infest	Dead	Union	Est Dom	Tit Dom	Crif Dom	Note

When entering an inventory_ID, the most recent Inventory Viability test is displayed:

2						Viab	ility Wiz	ard					- 5	1 >	
Get Existin	g Viability Te	st						Create Ne	w Viability	Test					
Invento	ry Viability ID	MR 42	MR 420171 BEZ SD		(Get Test		From Order:					0	Create	
Inve	ntory Number	MR 420171 BEZ SD					From Inv	entory:				Creat			
Last P	Last Percent Viable:			Last Test (Date: 4/2	21/2017									
Change	Date														
Rep	Seeds		Norm	Abn	Dorm	Hard	Empty	Infest	Dead	Unkn	Est Dorm	Trt Dorm	Cnf Dorm	Note	
1	50	0.0%	0												
2	50	0.0%	0												
3	50	0.0%	0											_	

Viability Test Details

On the main window, the **'Viability Test Details'** section displays the viability test parameters for the viability rule currently selected for the viability test being edited:

-		Viabi	ity Wizard				- 🗆 ×
Get Existing Viability Test Inventory Viability ID: Inventory Number:	MR 420171 BEZ SD MR 420171 BEZ SD	Get Test	Create N From	lew Viability Test m Order: ventory:			Create
Last Percent Viable:	Last Test Date: 4/	21/2017	1				
Rule Notes: Requirements: Sensitive t Notes:	to low temperatures	Substrata Moisture Prechill	paper towels water				
Taxonomy Notes.	~	Temp	20/30 C		Lighting	12L, 12D	
	~	Replicates	: Total Seeds:	Viability Rule: Towel_Water	20-30C_10-1	16	Show All Rules
Viability Test Notes:	^]	lr	nitialize Count Re	cords Now	Save	Cancel
	~	Print La	abels 1x3_Dy	mo_Viability_Lab	el.rpt		~

The information on the Viability Wizard main page includes testing procedure parameters and other useful information from several GG tables.

GRIN-Global Table	Fields					
inventory_viability_rule	Substrata, Moisture, Prechill, Temp, Lighting, Replicates, Total					
	Seeds, Rule Notes					
inventory_viability_rule_map	Taxonomy Notes					
inventory_viability	Viability Test Notes					

Show All Rules

By default, the **Show All Rules** checkbox is unchecked. Only viability rules currently associated with the taxonomy species being tested are displayed in the **Viability Rule** dropdown list. When selected, the **Show All Rules** checkbox will display all available viability rules.

Replicates:	Total Seeds:	Viability Rule:	Show All Rules
4	200	Towel_Water_20-30C_10-16	V X
	In	Towel_Water_20-30C_10-16	Jave Cancer
lemp Parliastasi	20/30 C	Lighting	12L, 12D
Replicates:	Total Seeds:	viability Rule.	Show All Rules
4	200	Towel_Water_20-30C_10-16	Y
Drivet 1 min	la ly2 D	Blotter_Water_15-25C_7-21_ Blotter_Water_15C_7-14_PC Blotter_Water_15C_7-21 Blotter_Water_15C_7-21_PC	PC7at10C 5at4C
Fint Lab	ix3_D	Plotter Water 20.25C 7.14	

Print Labels Button

Click the **Print Labels** button as needed. Also, note that the label has a barcode symbol.

Later, this symbol can be scanned and be used to invoke the Viability Wizard to display the corresponding replicate's data. The technician can immediately begin recording new counts specifically for that replicate.

			Viabi	lity Wizar	d					-	
Get Existing Viability Test						Create	New Viabi	lity Test -			
Inventory Viability ID:	1984882			Get Test		Fro	om Order:				Creat
Inventory Number:	RRG 20217 REI SD					From I	nventory:				Creat
Last Percent Viable:	10% Last Test Di	ate: 2/2/2017	Taxo	n: Humulus	lupu						
Viability Test Details Bule Notes											
Requirements: Substate	on dry side, no lights		^	Substrata	towe	ls					
Notes:				Moisture	wate	r					
Taxonomy Notes:				Prechill							
e -	Report Form v1.9.6.	.43 - 🗆	×	Temp	20/3	30 C			Lighting	12L, 12D	
4 4 2 h	(2) 🔤 🛛 🖌 →	н		Replicates	: 1	otal Seeds:	Viability	Rule:		She	ow All Ru
Main Report			-	4		200	Towel	_Water_2	0-30C_4-8		
		10					nitialize C	ount Reco	ords Now	Save	Cance
RRG	20217 REI SD			Print L	abels	1x3_Z	ebra_Viab	ility_Label	.rpt		
	Visbility No: 1084882										
	Order No:										
Humu											
Humu	ius iupuius									-0	
				Infest D	ead	Unkn	Est Dorm	Trt Dorm	Crif Dom	Note	
										1	
									1	1	
									-	1	
			~								
			-								

Save

When the user has changed information regarding the viability test, the **Save** button inside the **Viability Test Details** section will be enabled. Often this will be the viability rule being applied to the test. Generally this is a trivial task – simply click **Save**. However, when a viability rule has been chosen that is not associated with the taxonomy species of the current germplasm being tested, a dialog box displays:



If you click **Yes**, an association will be made between this rule and the taxonomy species; in future tests this rule will show up in the short list of rules for this taxonomy. (A record is created in the **inventory_viability_rule_map** table linking the taxonomy species ID with the inventory viability rule ID.)

Radio Buttons – Create a New Count Row

During viability testing, multiple counts of the replicates are performed. By default, the first time the barcode is scanned to initiate entering count data for that inventory sample, the Viability Wizard creates a new radio button with the current date.

That initial date becomes the test's *start* date. *No count rows are displayed*. When seeds are pulled out of the growth chamber to conduct a subsequent first count, typically 4-7 days later, a new radio button will be created and will become the count date for that data that is being recorded on that date.



If less than 24 hours has elapsed since the latest count, the wizard will not create a new radio button; instead, the wizard will return the data that is less than 24 hours old so that you can inspect/modify the data as needed. If you intend to conduct two counts less than 24 hours apart and need an additional radio button, click on the right-most button (labeled **Count** *n*). When this radio button is clicked, a new set of count rows will be created

					24	neplicate	s. Told	Deeus.	VIADIIILY FIL	e.		l	SHOW A	nules
Viability Te	st Notes:				~	4	200		Towel_Wa	ter_20-30	C_10-16			¥
					~			Ini	tialize Coun	Records	Now	Save	Ca	ncel
					\checkmark	Print L	abels	1x3_Dyn	no_Viability_	Label.rpt				~
Viability Da	ate /2017 ount Data	Count	2											
Change	Date				Dam	Hard	Emoty	Infest	Dead	Unkn	Ert Dorm	Trt Dorm	Cof Dorm	
Rep	Seeds		Norm	ADD	1 30100									Note



The **Tested Date** in the Viability record is reserved for the date when the germination test is *completed*. However, the wizard inserts the date when the wizard is used to set up the test parameters. When the testing is completed, that date will be updated.

Get Inv	ventory Maintenance	Policy Get Web Ord	ler Request Get W	eb Order Request Item	Get Accession Inv	ventory Attach	Get Inventory Viability	* • •) Other Bookr
	Inventory Viability ID	Inventory Viability Rule	Inventory	Test Date Format	Tested Date	Percent Normal	Percent Abnormal	Perc ^ 8	
	787360		NA 53225 SD	mm/dd/yyyy	04/17/1997	tested_date	Date when the gern	nination test was o	ompleted
	040045	CEED DDE CED	NA FE171 CD	/ 4 4 6	10/10/1007				



The second counting of a test will be reflected in the total % of the first date:

Viability Da	ate						
0		• 7/13/2	2021 (7/14/2	021 () Count 4	
Viability Co	ount Data						
Change	Date						
Rep	Seeds		Norm	Abn	Dorm	Hard	Empty
1	50	90.0%	40				

How did 40/50 get converted to 90%? The second count had 5 more normal germinations:

Viability Da	te	0 7/13/2	2021	• 7/14/2	021) Count 4	
Viability Co Change	unt Data Date						
Rep	Seeds		Norm	Abn	Dorm	Hard	Em
1	50	90.0%	5				

Notes

Four different note boxes are on the main Viability Wizard window:

							Viability V	Wizard						
Get Existin Invento Inver Last P	ng Viability Te bry Viability ID ntory Number ercent Viable	MR 4 MR 4	20171 BEZ 20171 BEZ	SD SD Last Test (Date: 4/2	(1/2017	Get Test Ta	KON:	Create Ne From From Inv	ew Viability i Order: ventory:	Test			Create
Viability Te Rule Note: Requireme Notes:	eet Detaile s: ents: Sensitive	e to low te	emperature	s		Â	Substrata Moisture	paper to water	wels					
Taxonomy	Notes:					^	Prechill Temp Replicates	20/30 C	; I Seeds:	Viability Ru	Light	ing 12	2L, 12D] Show All Rule
	st Notes:					Ŷ	Print La	abels	Ini 1x3_Dyn	tialize Cour	t Records N _Label.rpt	ow	Save	Cancel
Change	Date		_				_				_	_	C	
Rep	Seeds		Norm	Abn	Dorm	Hard	Empty	Infest	Dead	Unkn	Est Dorm	Trt Dom	Cnf Dorm	Note
1	50	0.0%	0											
			0											
2	50	0.0%	U						_	-	-			
2 3 Viability Su	50 50 50 mmary	0.0%	0				İ.		İ	1			i i	

Note Fields Available on the Viability Wizard

Display Name	Table	Function
Rule Notes	inventory_viability_rule	General notes about the test procedure. Applies
		across all taxonomy species samples which use this
		rule.
Taxonomy	inventory_viability_rule_map	Notes detailing how the viability rule test
Notes		procedure should be applied to this specific
		taxonomy species.
Viability Test	inventory_viability	General notes about the testing process as it was
Notes		applied to this particular inventory sample.
Notes on the	inventory_viability_data	Specific notes about the test procedures and
Replicate		observations for a specific replicate on a specific
Records		count day.

Create New Viability Test

The wizard can set up inventory viability tests from either an Order or an Inventory record. When an Order is selected, tests will be established for each inventory item included in the order.



In the Viability Wizard window, in the top right panel, enter the order or inventory value in the appropriate box; then click the respective **Create** button:



Creating a New Test from an Inventory

		Via	ability Wizard			-	
				Create New Viabi	lity Test		
			Get Test	From Order:			Create
				From Inventory:	MR 420171 ZEB SE	D	Create
	Last Test Date:	Т	axon:				
			Viability Wizard	- New Test		- 🔽 🗙	
_							
	Inventory Viability ID	Inventory Viability Rule	Inventory	Test Date Format	Tested Date	Percent Normal	

When selecting Order, each order item in the germination order will generate a test; otherwise, when indicating Inventory, only one test will be generated. If an open test hasn't been completed for that

order or inventory, you will be reminded with a prompt. You can ignore the prompt and continue in creating a new test, or you can proceed with an existing test:

Viability	y Wizard				
Get Test	Create New Viabil From Order:	lity Test 288237			Create
Last Test Date:	From Inventory:				Create
Substrata Moisture GRIN-Global v1.	9.6.43 —				
There are 2 existing unfinished with this collection of inventory r	Viabilty records associ records.	iated \land	9	v 9	Show All Rules
Would you like to create new Y Yes = Create new records No = Edit existing records Cancel = Quit without any chan	Nability records?		W	Save	Cancel
and the second of the most stress stress of the second stress of the sec					

New Test Window

When the wizard creates a new test, the wizard initially displays a **New Test** window. Enter the viability test parameters. Some fields are filled in with defaults, whereas other must be entered to indicate the test's parameters. Typically, you will complete the **Inventory Viability Rule** field by selecting a rule from a dropdown picker. If the rule has been established with a **Sample Count** and **Replication Count** fields, these fields will be filled in automatically when you save the record, but they can be overridden when different values are more appropriate for your test situation. You can also modify any of the other fields in this table.



Selecting a Rule from the Lookup Picker

The **Created** and **Owned** fields are filled in when you save the record. In the current version of the VW, they are displayed in pink, but input is not required – they will automatically fill in.

Note	Created Date	Created By	Modified Date	Modified By	Owned Date	Owned By

Click Save Tests.

<u>99</u>					1	Viability ¹	Wizard - No	ew Test						-	
Γ	Inventory Viability ID	Inventory Viability Rule	Inventory	Test Date Format	Tested Date	Percent Normal	Percent Abnormal	Percent Dormant	Percent Viable	Vigor Rating	Sample Count	Replication Count	Percent Empty	Percent Infested	Percent De
Þ	-1		MR 420171 ZEB	[Null]	4/20/2017 12:00					[Null])		
	Print Labels	1x3_Dymo_Via	bility_Label.rpt		~			_					Sav	re Tests	Cancel

Printing Labels for Tests

The new Viability record will be generated and have its ID. Click Print Labels.

Inventory Viability ID	Inventory Viabil	CDIN Clobal v1	Test Date		Percent Normal
1984886	Towe All d	lata was saved successfully		^	
			Г	ок	
			-	.d	



If the **Print Labels** button is not enabled after having saved your test parameters, the **Replication Count** field most likely contains invalid or missing data.

Clicking the **Print Labels** button displays the Crystal Reports **Report Form** viewer window with one label page per replicate for each test.

🖳 F	Report Form v1.9.6.4	43 - 🗆 ×
Aain Report	(?) 🗄 🛛 🖌 🔺	H =
	MR 420171 ZEB S 1 Viability No: 19924: Humulus lupulus	•
Current Page No.: 1	Total Page No.: 1+	Zoom Factor: 100%

Click Done:

▶ [Null] 200 4	

Note

If you click the **Done** button instead of **Print Labels** after saving your data, the wizard will display a prompt:

🗣 GRIN-Global v1.9.6.43	
You have saved 1 new Viability Test records, wou to print labels for these records now?	ild you like 🔺
\sim	Ņ
Yes	No

Clicking **Yes** button will display the **Viability Wizard – New Test** dialog window; you can then click **Print Labels**. If you click **No**, returns you to the main Viability Wizard window.

Searching for Viability Records

Use the Search Tool to find Inventory Viability records.

								Clear Text
@inve	ntory_viability.cre	ated_	by IN ((172397, 131088, 14856	66, 161944, 161945,	132983, 151385)		
Searc	h Results		0	1 0				
A	dd To Query		C	lear Query				
Get A	Accession Action	Lite	rature	Get Inventory Viability	Inventory Viability	Data	· · V	Show All Co
					-			
•								
,	Inventory Viability ID	Ŧ	Inven	ntory Viability Rule	Inventory	Test Date Format	Tested Date	Percent Normal
	Inventory Viability ID 2048759	¥	Inver Towel	ntory Viability Rule _Water_20-30C_5-10	Inventory MR 5 RRG SD	Test Date Format	Tested Date 5/23/2018	Percent Normal
	Inventory Viability ID 2048759 2048758	-	Inver Towel Towel	ntory Viability Rule _Water_20-30C_5-10 _Water_20-30C_4-8	Inventory MR 5 RRG SD MR 8 RRG SD	Test Date Format	Tested Date 5/23/2018 5/23/2018	Percent Normal
	Inventory Viability ID 2048759 2048758 2048757	*	Inver Towel Towel T_Wa	tory Viability Rule _Water_20-30C_5-10 _Water_20-30C_4-8 tter_20-30C_0L_24D	Inventory MR 5 RRG SD MR 8 RRG SD TRNG 2 RRG SD	Test Date Format	Tested Date 5/23/2018 5/23/2018 5/22/2018	Percent Normal

E.			Via	bility Wizard v	1.9.8.14				
Get Existing Viability Test Inventory Viability ID: Inventory Number:	2048759				Get Test	Create New From Or	Viability Test		
Last Percent Viable: Viability Test Details Rule Notes:		Last Test Date:	Taxon	;	Substrata				
Taxonomy Notes:				Ŷ	Moisture Prechill				
				0	Temp Replicates:	Total Seeds: Via	ability Rule:	Lighting	

							9	Viability V	Vizard v	1.9.8.14						>
Get Existin	g Viability Te	est										Create	New Viability T	Test		
Invento	ry Viability IC	204875	59							Get Test		Fre	om Order:			Create
Inver	ntory Numbe	m MR 5 F	RRG SD									From I	nventory:			Create
Last Pe	ercent Viable	e:		Last Test	Date: 5/2	23/2018	Ta	xon: Humu	ilus lupulu:	3						
Viability Te	st Details															
Rule Notes Requireme	s: ents: Fifty/tw	enty five se	eds are w	rapped in	2 sheets of	germinatio	n toweling	and replicate	d four 🔺	Substrat	a 2 blu	e blotters				
times. The Germinatio	e four replica	tions are ru med in a hi	bber band gh humidit	led togeth ty germina	er and eigh tor set at 1	t accession 2 hours 20	ns are place degrees ce	ed in plastic t entigrade in th	ubs. ne	Moisture	wate	r				
Taxonomy	Notes:		-					-	~	Prechill						
									~	Temp	20/3	0 C		Lighting	12L, 12D	
									~	Replicat	es: T	otal Seeds:	Viability Rul	e:		Show All Rules
Viability Tes	st Notes:										2	200	Towel_Wa	ter_20-30C_5-1)	×
									^				Initialize Count	Records Now	Save	Cancel
									~	Print	Labels	1x3_D	ymo_Viability_	Label.rpt		~
Viability Co Change Rep	Date Seeds	0.0%	Nom	Abn	Dorm	Hard	Empty	Infest	Dead	Unkn E	Est Dorm	Trt Dorm	Cnf Dom		Note	
	50	0.0%	0		I				_	_		-				
2	50	0.0%	0						_	_						
3	50	0.0%	U					<u> </u>	_	_						
4 Viability Su	50 immary	0.0%	0		1	1	1	I I	_			1				
	200	0.0%	0								-					
																Count

Appendix A: Installing the Viability Wizard

Overview

The Viability Wizard is available for testing; four steps must be followed. The steps are summarized here and then detailed on the following pages.

- Unzip the zip file (Step 1)
- Copy ViabilityWizard.dll --> C:\Program Files (x86)\GRIN-Global\GRIN-Global Curator Tool\Wizards (Step 2)
- The existing AppSettings.txt file needs to be edited and have one line added (Step 3)
- Two .rpt files need to be copied to your C:\Program Files (x86)\GRIN-Global\ GRIN-Global Curator Tool\Reports folder (Step 4)

Detailed Installation Instructions

Step 1: Download and Unzip the .zip File

You need to unzip the file in order to get the respective files to be loaded on a folder on your PC. The zip file is located at <u>http://www.ars-grin.gov/npgs/gringlobal/files/viability_wizardfiles_2017feb06.zip</u>

Files included in the zipfile are:

- ViabilityWizard.dll
- AppSettings.txt
- two .rpt files: 1x3_Dymo_Viability_Label.rpt and 1x3_Zebra_Viability_Label.rpt

In Windows Explorer, you should be able to right-click on the zip file name, and then select **Extract All...** to load the four individual files on a folder on your PC.

Step 2: Copy the Viability Wizard .dll file to the Wizards Folder

Using Windows File Explorer, copy ViabilityWizard.dll to

C:\Program Files (x86)\GRIN-Global\GRIN-Global Curator Tool\Wizards

👢 🕨 This PC 🕨 Windows	s (C:) →	Program Files (x86)	RIN-Global Curator Tool 🕨 Wizards		
Files (x86)	^	Name	Date modified	Туре	Size
stropics Corporation		AccessionWizard.dll	6/28/2016 8:58 PM	Application extension	754 KB
ctronics corporation		CooperatorWizard.dll	6/28/2016 8:58 PM	Application extension	105 KB
		📑 OrderWizard 43 new.dll.doc	6/21/2016 11:26 AM	Microsoft Office Wo	1,047 KB
iterprise		OrderWizard.dll	6/28/2016 8:58 PM	Application extension	1,047 KB
		(a) ViabilityWizard.dll	1/18/2017 9:21 AM	Application extension	117 KB

Step 3: Add a line to the App Settings.txt file

Edit your existing AppSettings.txt file which is located in the folder: C:\Users\yourusername\AppData\Roaming\GRIN-Global\Curator Tool

Add the lines:

Viability Wizard

ViabilityWizardCrystalReports = 1x3_Dymo_Viability_Label.rpt; 1x3_Zebra_Viability_Label.rpt



(Any line with a # preceding it is a comment line)

Step 4: Copy the Viability Wizard Report (.rpt) files to the PC

Two .rpt files need to be copied to your C:\Program Files (x86)\GRIN-Global\ GRIN-Global Curator Tool\Reports folder.

🐌 🐊 🖡 🚽 C:\Prog	C:\Program Files (x86)\GRIN-Global\GRIN-Global Curator Tool\Reports —										
File Home Share View											
	I-Global\GRIN-Global Curator Tool\Reports	✓ (Search Repor	ts							
🗼 schema_and_DD	^ Name	Date modified	Туре	Size							
Spanish docs	Order-Packing General orig.rpt	4/25/2014 1:49 PM	Crystal Reports	6							
videos	1x3_Dymo_Viability_Label.rpt	1/7/2015 8:48 PM	Crystal Reports	2							
visio_drawings	Order-Packing General_2015nov30.rpt	11/30/2015 3:55 PM	Crystal Reports	62							
👢 wiki	1x3_Zebra_Viability_Label.rpt 1x3_Freezer_Label.rpt	1/20/2016 3:02 PM 6/21/2016 8:04 PM	Crystal Reports	21							
kii2	1x3_Jar_Lid_Label.rpt	6/21/2016 8:04 PM	Crystal Reports	2							
Logfile zip	> 1x3_Prepack_Label.rpt	6/21/2016 8:04 PM	Crystal Reports	1							

Step 5: Restart your Curator Tool

Appendix B: Viability-related Dataview Examples

Inventory Viability Rule

Specifies the conditions used in the germination tests.

Code Value	Code Value Language	Get Crop Trait	Crop Trait Obs	servation Sit	e W6 Inventory Get Orde	r Request Item	Inventory	Viability Rule 🚒				•
Inventory Viability Rule ID	Name	Substrata	Seeds Per Replicate	Number of Replicates	Requirements	Temperature Range	Category	Count Regime Days	Moisture	Prechill	Lighting	Note
495786	PULLMAN.GER	towel	25	4	Substrate.towel	20 C const		count at 7, 14	H20	none	12 days/12 night	
495806	B_Water_5C_12	B=between blotters	50	4		5C		7, 14, 21	Water		12L/12D	
495820	S9.GERMS.GRA				Seeds are held at room temperature for 4 weeks prior to planting. Seeds are planted on sand with 0.1% KNO3 in the initial							
495821	TB_Water_20-30	TB=top of blotters	50	4		20/30C		4.10	Water		12L/12D	
495822	TB_Water_25C	TB=top of blotters	50	4		25C		7, 14	Water	28 days at 5C	12L/12D	S24H=Soał hours in 1m Ethephon, r
495823	TB_Water_20-30	TB=top of blotters	50	4		20/30C		5, 14	Water		12L/12D	
495824	TB_KNO3_20-30	TB=top of blotters	50	4		20/30C		4. 7. 14	KNO3 (0.1%)	21 days at 5C	12L/12D	
495825	GSOR.MPING.G				30 DEGREE C X 2							
495826	TB_KNO3_20-30	TB=top of blotters	50	4		20/30C		3, 7, 14	KNO3 (0.1%)		12L/12D	
495827	(B)_Blotter_H2O	(B) Between blott	50	4	B: between blotters at	20-30C		3, 10	(H2O) Tap Water			

Inventory Viability

These are the viability summary records that have the combined data from their respective **Inventory Viability Data** records.

Code Value	Code Value Language	Get Crop Trait Crop	Trait Observ	vation Site W6 I	nventory	Get Order	Request Iter	m Invento	ory Viabili	ty Rule	Inventory Viabi	lity 🛃 .					-	• •
Inventory Viability ID	Inventory Viability Rule	Inventory	Test Date Format	Tested Date	Percen	Percent Abnormal	Percent Domant	Percent Viable	Vigor Rating	Sample Count	Replication Count	Percent Hard	Percent Empty	Percent Infested	Percent Dead	Percent Unknow	Note	^
2036402	PULLMAN.GERM	PI 578087 94ncfo0	mm/dd/	12/28/2017			1	98		97	4				2		178 sprouts	
2047872	PULLMAN.GERM	PI 590588 95o SD		1/4/2018 12:			4	99		100					1		217 sprouts	
2043046	(B)_Blotter_H2O	NSSL 182792 01 SD	mm/dd/	03/13/2018						50	1							
2043063	(B)_Blotter_H2O	NSSL 182884 01 SD	mm/dd/	03/13/2018				j i		50	1							
2039322	TB_Water_20-30	PI 464481 84ncai0	mm/dd/	04/09/2018	89	2	0	89		200	4	0	0	0	9	0		
2036336	PULLMAN.GERM	PI 357358 72ncai0	mm/dd/	09/08/2017			0	98		98	4				2		213 sprouts	
2043328	TB_Water_20-30	PI 358070 17ncai0	mm/dd/	04/11/2018	63	1	0	63		200	4	0	1	0	35	0		
2038218	S9.GERMS.GRA	Grif 17807 or SD	mm/dd/	02/05/2018	43	0	0	43		100	1	0					0.1% KNO3;	Rc
2038200	S9.GERMS.GRA	Grif 17789 or SD	mm/dd/	02/05/2018	61	0	0	61		100	1	0					0.1% KNO3;	Rc
2038320	S9.GERMS.GRA	Grif 17889 or SD	mm/dd/	02/05/2018	69	0	0	69		100	1	0					0.1% KNO3;	Rc
2038149	S9.GERMS.GRA	Grif 17739 or SD	mm/dd/	02/05/2018	16	0	0	16		100	1	0					0.1% KNO3;	Rc

Inventory Viability Data

Site W6 Inventory	Get Order Requ	est Item Inventor	y Viability Rule	Inventory Viability	Inventory Viabi	lity Data	6			4 >
Inventory Viability Data ID	Inventory Viability	Inventory	Order Request Item	Counting Cooperator	Replication Number	Count Number	Count Date	Normal Count	Abnormal Count	Dormant Count
101528	2048758	MR 8 RRG SD		Reisinger, Martin			5/21/2018	0		10
101529	2048758	MR 8 RRG SD		Reisinger, Martin	. 2	1	5/21/2018	0		
101530	2048758	MR 8 RRG SD		Reisinger, Martin	. 3	1	5/21/2018	0		
101531	2048758	MR 8 RRG SD		Reisinger, Martin	. 4	1	5/21/2018	0		
101532	2048758	MR 8 RRG SD		Reisinger, Martin	. 1	2	5/23/2018 3:31	0	8	
101533	2048758	MR 8 RRG SD		Reisinger, Martin	. 2	2	5/23/2018 3:31	0		
101534	2048758	MR 8 RRG SD		Reisinger, Martin	. 3	2	5/23/2018 3:31	0		
101535	2048758	MR 8 RRG SD		Reisinger, Martin	. 4	2	5/23/2018 3:31	0		

Each record in the **Inventory Viability Data** table represents one replicate of a test.

Inventory Viability Rule Map

This dataview reflects the mapping of a viability rule mapped to multiple species records.

Show lists from: Show All	Crop Trait Code Crop Tra	ait Code Lang Crop Trait Observ	ation Inventory Viability	Inventory Viability	Data Get Inventory	Viability Rule Get In	ventory Viability Rule	Map Site
Include Sub-Folders	Inventory Viability Rule Map ID	Inventory Viability Rule	Taxon	Note	Created Date	Created By	Modified Date	Modified By
JAN2020 MISC1204 COTTON QA	1052	Towel_Water_20-30C_7-9	Zea diploperennis		4/2/2017 10:04	Cyr, Peter, USDA		
AN2020 Root Folder	1053	Towel_Water_20-30C_7-9	Zea hybr.		4/2/2017 10:04	Cyr, Peter, USDA		
HARaccs	1054	Towel_Water_20-30C_7-9	Zea luxurians		4/2/2017 10:04	Cyr, Peter, USDA		
	1055	Towel_Water_20-30C_7-9	Zea mays		4/2/2017 10:04	Cyr, Peter, USDA		
······VR · 10wei_water_20-30C_/-5	1056	Towel_Water_20-30C_7-9	Zea mays subsp		4/2/2017 10:04	Cyr, Peter, USDA		
	1057	Towel_Water_20-30C_7-9	Zea mays subsp		4/2/2017 10:04	Cyr, Peter, USDA		
	1058	Towel_Water_20-30C_7-9	Zea mays subsp		4/2/2017 10:04	Cyr, Peter, USDA		
	1059	Towel_Water_20-30C_7-9	Zea mays subsp		4/2/2017 10:04	Cyr, Peter, USDA		
	1060	Towel_Water_20-30C_7-9	Zea nicaraguensis		4/2/2017 10:04	Cyr, Peter, USDA		
N	1061	Towel_Water_20-30C_7-9	Zea perennis		4/2/2017 10:04	Cyr, Peter, USDA		
5								

Appendix C: Pure Live Seed

Pure Live Seed (Calculating Live Seed by Using Germination Test Rates)

In server release 1.10.3, a calculated field was added to the Inventory dataview. The calculation is derived by multiplying the quantity on hand with the latest germination percentage to get "pure live seed" (the actual number of viable seed propagules).

For example, if you have 1000 seeds and the germination test says 50%, then you only have 500 seeds that are viable.

The following code can be used in the Search Tool:

WHERE inventory_number_part1 = 'Ames' AND quantity_on_hand > regeneration_critical_quantity AND inventory_viability.inventory_viability_id IS NOT NULL AND dbo.fn_i_pureliveseed(inventory.inventory_id) < regeneration_critical_quantity

(Ames is used here as an example)

Refer to the online Search document <u>https://www.grin-global.org/docs/gg_searches.docx</u> for an expanded illustration.

Appendix D: Revision Notes

Changes in this Document

– July 13, 2021

• multiple wording changes to reflect recent changes to the wizard

- October 18, 2019

• a few, minor very wording changes

– July 22, 2019

• minor edits regarding searching by inventory ID