Introducing AccuDataLog: The Mobile Fieldbook for CloneSelector

SASHA

Sweetpotato Action for Security and Health in Africa

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About AccuDataLog

- A mobile application that enables field data entry for trial data into the CloneSelector Fieldbook and offers capability for printing labels on demand for harvest samples
- Available on Windows and Android platforms

Main Features

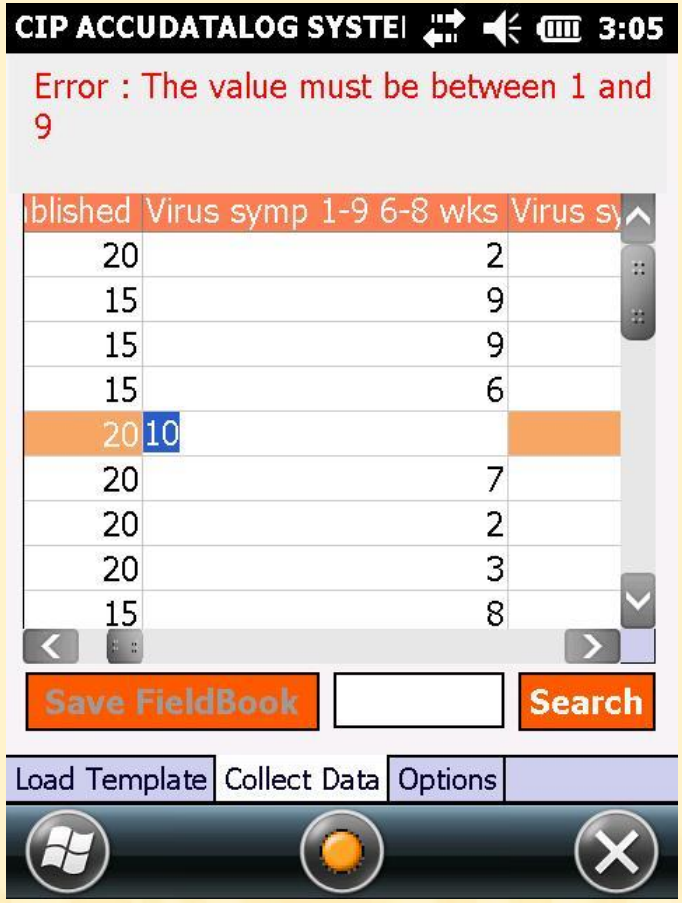
- Automatic Import CloneSelector Fieldbooks into mobile device
- Field based data entry

Main Features

- Integrated barcode technology, 1D or 2D

Main Features

- Realtime data entry validation: numeric, date, string length, lower limits, upper limits, etc
  - User customizable



Main Features

- Print on demand (POD) of sample labels via mobile printing

Main Features

- Easy transfer of data from PDA back to CloneSelector Fieldbook for analysis
- Windows and Android platforms

Requirements

- CloneSelector
  - Trial design
  - Fieldbook creation
  - Data analysis

SSP WA Case Study

- Trial: PT
- Genotypes: 31, Reps:2, Locations: 4
- Team consists CIP and CSIR-CRI colleagues

- Trial preparation by breeding team
  - Planting dates, etc agreed on
- Planting material preparation got underway

- Trial designed using CloneSelector
  - Only one person (Ebenezer) creates Fieldbook
  - Fieldbook then distributed amongst breeding team (Field technicians, NIR's technician, breeding assistants, etc)
  - Ebenezer supervises breeding team

- Planting labels printed
  - white V-Max polyolefin 7.5 mil tag that provides tear strength and outdoor use up to 1-2 years. Offers good durability and chemical resistance

- Breeding trial is planted
- Fieldbook uploaded on PDA's in readiness for field data collection
  - SSP-WA has 5 PDA's so far
  - Same Fieldbook uploaded on multiple PDA's as each technician will collect data of a unique trait
  - Data collected over breeding season and regularly backed up.

Harvesting

- Field data entry
  - Root count, foliage, etc
  - Complimentary paper data capture for backup

- NIR’s samples labels printed in the field

- Fresh weight data entry into Fieldbook

Transfer back to CloneSelector

Trial: PT3-2013 Site: Fumesua Country: Ghana Planting: 22/08/2013
PlotSize: 3 Harvest: 22/12/2013 Collaborator: Dr. Asafu-Agyei Institution: CSIR-CRI/CIP

	Rep	Bloc	Plot	Entry	Name	Pedigree	# plants Harvested	# plants w. Roots	# Roots Marketable	# Roots NonMarket	Weight Root Marketable	Weight Root NonMarket	Vine Weight kg	Skin Color 1-9	Flesh Color	Root Size 1-9	Root Form 1-9	Root Defects 1-9	Weevil Damage 1-9	Alcidodes 1-9	Millipede 1-9	Trait6
LowerLimit							0	0	0					1		1	1	1	1			
UpperLimit														9		9	9	9	9			
	1	1	1	1	UW11906-79		9	9	6	23	1.5	4.0	2.5			6	5	1	7	3.0	3.0	
	1	1	2	2	Kemb10		10	8	4	12	2.0	2.0	3.1			5	5	1	7	6.0	3.0	
	1	1	3	3	Ningshu1		10	5	0	9	0.0	0.5	3.3			3	3	1	1	2.0	1.0	
	1	1	4	4	Mugande		10	10	6	30	2.0	2.5	3.0			3	3	1	2	2.0	1.0	
	1	1	5	5	SPK004/616		10	8	4	10	2.0	1.5	2.0			2	2	1	2	1.0	1.0	
	1	1	6	6	Apomuden		10	10	11	24	0.2	1.5	0.7			4	4	1	5	3.0	2.0	
	1	1	7	7	199062		8	8	21	32	2.5	1.5	2.1			5	5	1	6	1.0	2.0	
	1	1	8	8	Mohc		10	9	14	15	3.0	1.5	1.1			7	6	1	1	1.0	1.0	
	1	1	9	9	Ejumula		10	10	11	20	2.5	1.0	2.1			5	4	1	5	2.0	3.0	
	1	1	10	10	Uww11906.289		7	5	9	11	1.0	0.5	3.1			5	6	1	3	1.0	1.0	
	1	1	11	11	Kemb37		10	10	11	24	2.0	1.0	1.7			5	5	1	4	2.0	2.0	
	1	1	12	12	Cemsa78-326		10	8	8	4	2.5	0.1	1.0			5	4	2	4	3.0	2.0	
	1	1	13	13	Mapthutha-1		10	10	16	23	1.5	0.1	0.5			4	6	1	6	2.0	1.0	
	1	1	14	14	Mugamba		10	10	30	15	4.5	0.5	1.1			6	5	2	4	2.0	2.0	
	1	1	15	15	Zapallo		8	6	6	6	0.5	0.1	4.2			4	4	1	2	2.0	1.0	
	1	1	16	16	Kamala Sundari		10	10	24	19	3.5	0.5	1.3			6	5	1	3	2.0	3.0	
	1	1	17	17	UW119-15		10	10	20	14	5.5	0.5	2.3			6	5	1	3	3.0	2.0	
	1	1	18	18	Ogyefo		10	10	11	30	2.5	1.5	3.0			5	5	1	3	3.0	1.0	
	1	1	19	19	UW11906-175		10	9	11	21	2.5	1.0	1.3			5	5	1	5	2.0	1.0	
	1	1	20	20	MUSG0616-18		10	9	11	26	1.5	1.0	1.1			4	4	1	7	1.0	2.0	
	1	1	21	21	Jewll		10	10	16	18	3.0	0.5	1.1			5	4	1	8	3.0	3.0	
	1	1	22	22	Ejumula25		10	10	13	24	3.5	1.5	1.6			7	5	1	6	3.0	3.0	
	1	1	23	23	Tacna2		10	10	17	13	3.5	0.5	3.9			7	5	1	5	1.0	2.0	
	1	1	24	24	Baauregard		10	9	22	18	4.0	1.0	11.7			5	4	2	5	2.0	1.0	
	1	1	25	25	Jonathan		9	9	7	26	1.0	1.0	2.4			3	4	1	2	1.0	2.0	
	1	1	26	26	Cemsa74-228		10	10	19	5	8.5	0.5	4.6			8	5	1	7	6.0	4.0	
	1	1	27	27	Tamale Orange		10	10	11	8	2.5	0.5	0.6			5	5	1	6	3.0	2.0	
	1	1	28	28	LO323-1		10	10	15	16	4.0	1.5	3.0			6	4	2	6	3.0	5.0	

Fieldbook | Results | General | Installation | Field | Weather_data | Master | Crop_management | cData

Ready

- The rest of the NIR’s data is imported back into CloneSelector via the CloneSelector routine for importing NIR’s data
- On the first day of use data for 13 different harvest traits for a total of 62 genotypes in the PYT was entered into the Fieldbook in the field.

AccuDataLog Setup

- Setup files available to all here: https://research.cip.cgiar.org/confluence/display/GIMS/CIP+AccuDataLog
- Equipment & Software purchase: PDA's, Printers, etc
- Setup and training: 5 to 10 days on site

Advantages

- Improved accuracy
  - Real-time validation
- Improved data entry speed (13 traits on 62 plots done in half a day)
- Traceability with bar code technology
- Incorporation of multi media data e.g. field pictures

Issues

- GIGO
  - Naming of materials key
- Compliments use of Fieldbook

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