



KDSmart - Quick Tour



KDSmart - The Android App for scoring phenotypic data in the field

What is KDSmart?

An Android tablet/phone application that enables efficient phenotypic data collection from 'field trials' or experiments.

Use it standalone with your current workflow tools or as an integrated part of the broader KDDart solution.

Where to get it?

Search for KDSmart in the Google PlayStore.

Key Objectives

Flexibility - Customisable to your needs;

Accuracy - Reduces data errors;

Efficiency - Smart Trial scoring;

Connectivity- Work with existing tools or the integrated KDXplore and KDDart;

Affordability - Suit small budgets.

Flexibility

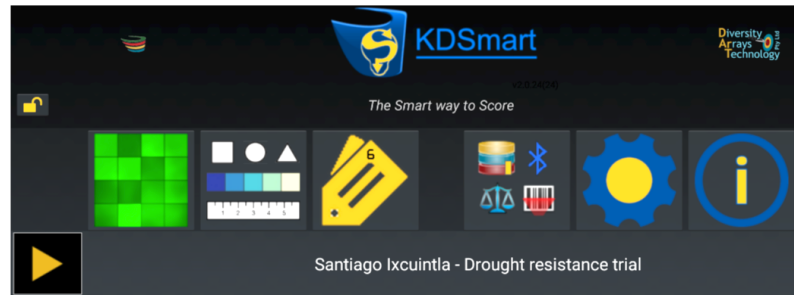
KDSmart is very adaptable to:

- Any type of crop, specimen or organism;
- Arrangement and layout of fields, nurseries, pots, pens, cages, etc.;
- Choice of Collection order;
- Organisation's or industries standard methods; and
- Data naming preferences; and
- Your way of working.

Accuracy

Improved data collection:

- Trait validation rule definition and checking;
- Scored Trait locking preventing accidental change;
- Predefined selection choices vs typing.



This Tour

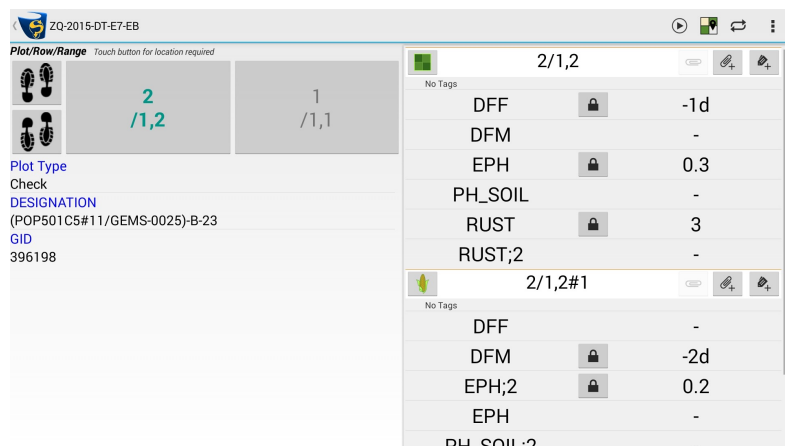
KDSmart V2 addresses more Breeder and Researcher requirements. Sporting a new interface and a completely redesigned, more efficient database architecture.

This quick tour provides an overview of a few of KDSmart's many capabilities.

The Scoring Screen - (Tablet Landscape)



Score or Tag specimens or plots singularly or in multiples (1, 2 or 4), add photos/audio or add new specimen(s) and deactivate them if needed.



Display only the Traits or attributes as needed and Lock scored Traits to prevent accidental changes.

Change the collection order, swap buttons left to right (to alternate hands), portrait to landscape (shown), navigate to specific plots with **FieldView**.

Use Auto-Scoring or Bluetooth Scanning to work faster then exit scoring and return where you left off to continue scoring. With all this flexibility 'locking' options are also available when managed by KDXplore.

Just a glimpse of some KDSmart functionality.



Efficiency

- Provide information in the field as and when needed;
- A decluttered scoring view by hiding attributes and Traits;
- Quick glance of scoring status;
- Quick annotation using Tags;
- Minimal typing required.

Connectivity

- Easily connect with KDXplore and KDDart for data transfers.
- Import and Export Trials, Traits and Tags to CSV for alternative software tools.
- Bluetooth.
- Barcode Scanner input.

Affordability

- KDSmart is made freely available by Diversity Arrays PL - Australia.
- Runs on a variety of Android 4.1.x and above tablets and phones.
- Operates 'standalone' with your existing tools without need for the full KDDart platform.

Concepts

Trials - Study, Experiment, Nursery, etc.

Traits - Phenotypic characteristic being monitored/scored

Tags - Shorthand annotation labels

Plots - Uniquely identified by either a PlotID or Column/Row Id pairs

Collection Order - Way of progressing through the trial area

Days since planting - Ability to enter a date, e.g. for anthesis, which is converted automatically to the number of days since planting.

More Information

For more information about KDSmart or Diversity Arrays PL please refer to:

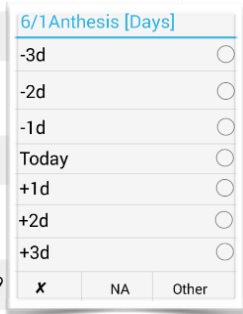
- www.kddart.org or
- www.diversityarrays.com

Talk to DARt about your phenotypic data management and genotyping needs.

Traits and Tags

Traits can be imported/exported and include validation rules offering consistency across multiple devices.

Trait Type	Description	Validation
CATEGORICAL	Constrained by a list	CHOICE(BLUE YELLOW RED)
TEXT	Unconstrained entry	None
DATE	Date value, can be chosen from Calendar	
ELAPSED_DAY	Days since planting	
INTEGER	Integer values within a specified range	RANGE(min..max)
DECIMAL	Upper and lower bound	Eg. 1.00 < x < 2.99

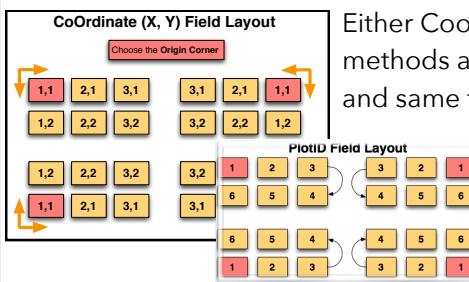


The **Days from planting** is easily recorded (see inset), 'Other' invokes a calendar (same functionality for **Date Trait** types).

Categorical Type provides a list of valid values (e.g. above example only accepts Blue, Yellow, Red).

Similarly predefined **Tags** provides a list of values to assign quickly and accurately. New Traits and Tags can be created in the field when required.

Field Layouts



Either Coordinate (x,y), PlotID or both methods are useable. It's your choice and same for the terminology used e.g. Row, Range, PlotID, SpecimenID, etc. Use the Names you require.

Collection Order



How the site is traversed maybe varied from where you need to start or recommence scoring.

Import/Export

Trials, Traits and Tags are easily transferred using CSV files and the handy embedded column mapping feature shown.

Col#	CSV Heading	Data Row#1	Import As
1	ENTRY_TYPE	T	Trait
2	PlantingDate	21/01/15	Trial Planting Date
3	GID	245327	Plot-Attribute
4	DESIGNATION	BRAZ2934	Plot-Attribute
5	ENTRY_NO	8	Plot-Attribute
6	EH_cm	138	Trait

Conclusion

With KDSmart we aim to provide all you need to leave your office, start 'scoring in the field' and move towards curation and analysis efficiently and accurately! Install it and give it a try with one of the preinstalled demo databases.