

Agricultural Mobile Apps: A review and update of ID apps

In recent years, several institutions have developed mobile applications (or “apps”) for tablets and smartphones with the goal of providing a service to all end users. The agricultural sector has taken a similar path, producing new apps for mobile devices (so called “Ag-Apps”) for agricultural consultants and producers with educational materials and support tools. There is an increasing interest in these “Ag-Apps” and the use of new technologies for increasing the efficiency in communicating and decision-making.

This summary provides a review and update of the current status of Ag-Apps. To check the 2014-15 summary article see: [2014-15 Ag-Apps Summary](#)

Note: Most of the apps presented in this series of articles are free to download. Before paying for any app, please check online reviews or consult with any specialist working with that app or someone familiar with the app in order to understand its potential benefits and how it can assist you in your daily farming operation. As a general rule, an app needs to be “easy to use” and “intuitive.” Most apps do not come with a user guide or a manual. Take all these points into consideration before downloading and using apps.

Ag-Apps Classification:

For this series of articles, Ag-Apps are grouped into the following ten classifications with the goal of dividing apps by their different uses and purposes:




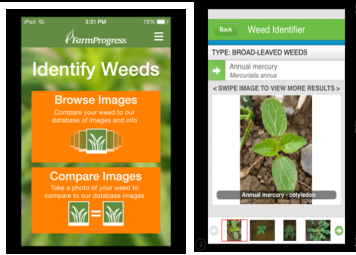

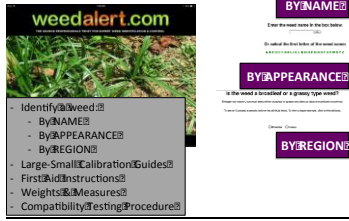
- **ID Apps:** For identification purposes (weeds, insects, diseases, and nutrients)
- **CALC Apps:** For calculating purposes (nutrient removal calculations, tank mixes, volume to spray, etc.)
- **SCOUT Apps:** For scouting purposes or for geo-positioning (soil sampling, recording notes, soil types, etc.).
- **ECON Apps:** For checking grain prices, market evolutions, fertilizer price trends, news and finances.
- **GUIDE Apps:** For diagnosing crop production issues in the field, primarily related to field guides (crop management: insect, disease, weed, and more).
- **LIVESTOCK Apps:** Apps related to the animal side, nutrition, health, and information on markets.
- **IRRIGATION Apps:** Apps related to field crop irrigation and water application.
- **MACHINERY Apps:** Apps for associated with agricultural equipment preparation, inventory, providing information of the machine.
- **GAG Apps:** GAG (general Ag-Apps) for general use, weather-related, for meetings, for reading magazines, among several other Apps’ properties.
- **NON-AG Apps:** For general use from e-readers to calculators, email, calendar, picture editing, and more.


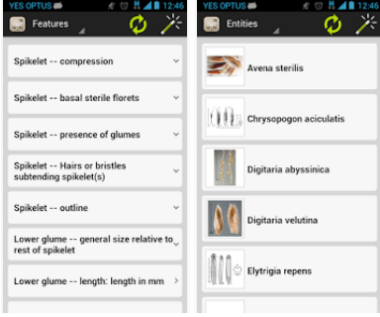

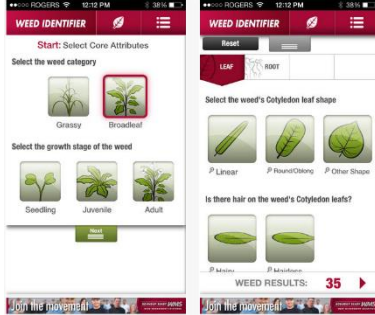

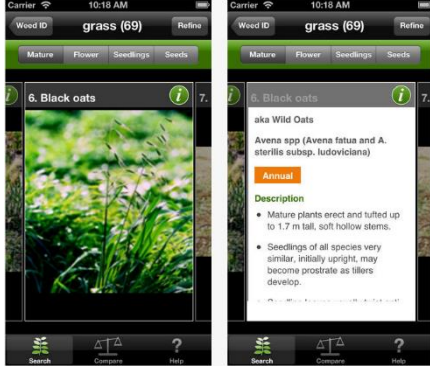
1. Identification Apps (ID Apps)

These Apps are primarily utilized for identification purposes. This category can be sub-divided in different topics: A) Weeds, B) Insects, C) Diseases, and D) Nutrients

A) Weeds ID




These apps can help identify a weed, or search for weeds by name, region, or appearance.




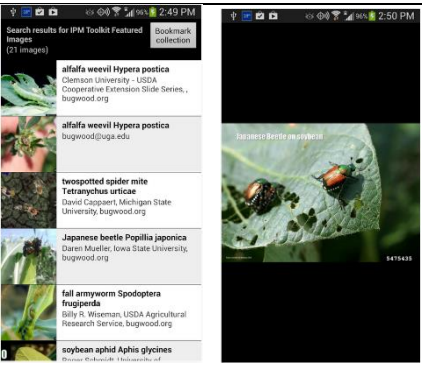

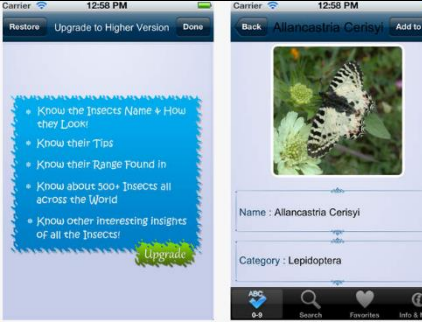
| MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University | | | |
|---|---|---|--|
| ID Apps - Weeds | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>ID Weeds</p>  <p>University of Missouri Extension</p> |  | <p>Search, check a list or identify weeds.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Ag Weed ID</p>  <p>Farm Progress</p> |  | <p>Weed identification for corn, cotton, rice, sorghum, soybeans, and wheat (75 weeds).</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>WeedAlert</p>  <p>PBI/Gordon Corp.</p> |  | <p>Identify weeds by name, by appearance, and by region.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> <p>Web-based</p> |

| | | | |
|--|---|---|---------------------------|
| <p>Federal Noxious Weeds Key</p>  <p>U. S. Department of Agriculture</p> |  | <p>This app is a useful resource for seed professionals and anyone with an interest in, or a need to know about, noxious weeds.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Weed ID</p>  <p>Monsanto Company</p> |  | <p>The Weed ID app is a tool that allows you to identify and map weed pressures through a dynamic selection criteria process.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Weed ID: The Ute Guide</p>  <p>Grains Research and Development Corporation</p> |  | <p>This app is designed to assist growers in the identification of common weeds (Australia). Pictures at varying growth stages are presented on this app.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |

B) Insects ID




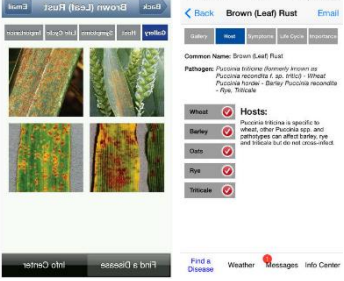

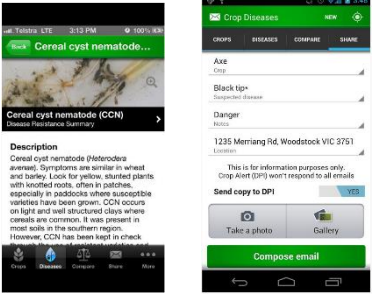
These apps can help identify insects (pests) and beneficials, quantify insect damage, and determine insect threshold.


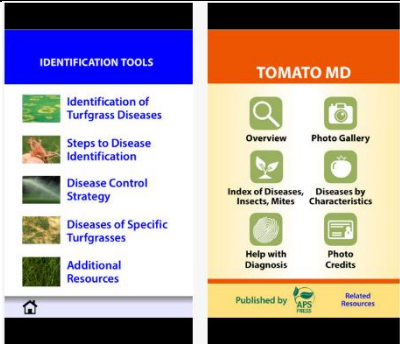

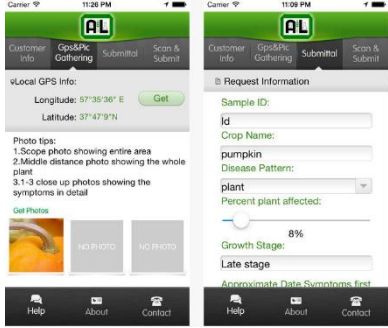


| MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS @Kansas State University | | | |
|---|---------|--|---------------------------|
| ID Apps - Insects | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>Aphid Speed Scout</p>  <p>University of Nebraska-Lincoln</p> | | <p>Quick and easy approach to measure aphids.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>DuPont Pestbook</p>  <p>DuPont</p> | | <p>Designed to simplify identification of pests and beneficial insects in your fields.</p> <p>FREE</p> | <p>iOS</p> |
| <p>Western Bean Cutworm (WBC) Speed Scout</p>  <p>University of Nebraska-Lincoln</p> | | <p>Speed scouting is a new method for determining whether WBC populations have reached the action threshold for treatment.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |

| | | | |
|---|---|--|---------------------------|
| <p>Insect ID</p>  <p>Grains Research and Development Corporation</p> |  | <p>Reference guide for insect pests commonly affecting broadleaf crops. Photos are provided, and each insect is described in detail.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>IPM Toolkit</p>  <p>University of Wisconsin Nutrient and Pest Management Program</p> |  | <p>Read news articles, view videos, download publications, and access pictures to aid you in adapting IPM practices.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Atlas: Insects of World</p>  <p>ASV Apps</p> |  | <p>Pocket handbook for anyone interested in learning about insects. It has pictures of most common insects on Earth.</p> <p>FREE</p> | <p>iOS</p> |

C) Diseases ID


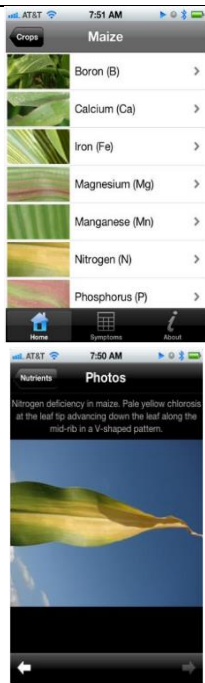

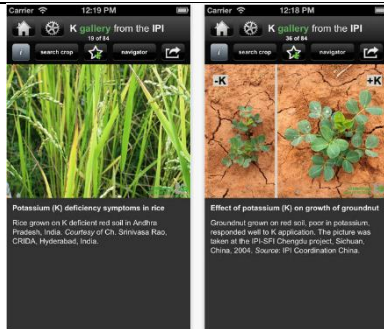
These apps can help identify a disease, or search for disease by name or picture.

| MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University | | | |
|--|---|---|---------------------------|
| ID Apps - Diseases | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>Soybean Diseases of SD</p>  <p>South Dakota State University</p> |  | <p>This iPhone app was assembled to provide growers with easy-to-use diagnostic information for a number of major soybean diseases.</p> <p>FREE</p> | <p>iOS</p> |
| <p>Cereal Disease ID</p>  <p>BASF</p> |  | <p>Cereal Disease ID app gives access to information about common diseases of cereal crops.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>DEPI Crop Disease</p>  <p>DEPI Crop Disease</p> |  | <p>The DEPI Crop Disease app provides quick access to current disease resistance ratings and an extensive disease image library.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |


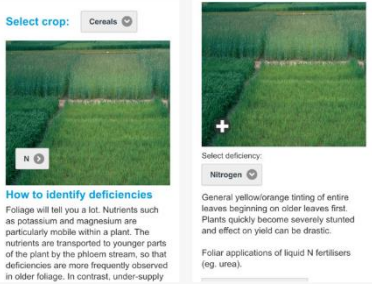
| | | | |
|---|---|---|---------------------------|
| <p>Plant Health from APS</p>  <p>American Phytopathological Society</p> |  | <p>APS reference apps for plant diseases found on turfgrass and tomatoes. Mobile tools featuring photos, ID keys, and management recommendations.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>A&L Plant Disease Diagnosis</p>  <p>A&L Canada Laboratories, Inc.</p> |  | <p>This app was designed to give you the ability to diagnose disease in your crops by providing some pictures and basic information.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Veg Pest ID</p>  <p>Break Through Applications Pty Ltd</p> |  | <p>This app helps farmers and agricultural professionals identify pests (insects, diseases, and disorders) on vegetable crops.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |

D) Nutrients ID

These Apps can help identify a nutrient deficiency, or search for a deficiency by name, picture, and field crop.

| <i>MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University</i> | | | |
|--|---|--|---------------------------|
| ID Apps – Nutrient Deficiencies | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>Crop Nutrient Deficiency Photo Library</p>  <p>International Plant Nutrition Institute</p> |  | <p>A comprehensive collection of crop nutrient deficiency photos for 14 prominent crops. Text descriptions are also provided.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Potassium Gallery</p>  <p>International Potash Institute (IPI)</p> |  | <p>This app has quality pictures portraying potassium (K) responses to fertilizer applications and also depicting K deficiencies in different crops.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |

| | | | |
|---|---|---|---------------------------|
| <p>Crop Nutrient Deficiencies</p>  <p>AG-PHD</p> |  | <p>Users can search for deficiencies by nutrient type or browse photos of crops showing deficiency.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Yara CheckIT</p>  <p>Yara International</p> |  | <p>This app gives farmers a photo library to allow a simple and fast ID of possible nutrient deficiency. Then it gives further information on how the deficiency affects that crop.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Winter cereal nutrition</p>  <p>Grains Research and Development Corporation</p> |  | <p>This app is designed to help growers easily identify cereal nutritional disorders. It covers both nutrient deficiencies and toxicities.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |

| | | | |
|---|---|---|---------------------------|
| <p>KALI-TOOLBOX</p>  <p>K+S KALI GmbH</p> |  | <p>The K+S KALI GmbH app provides you with the most essential information regarding mineral fertilization (including pictures).</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
|---|---|---|---------------------------|


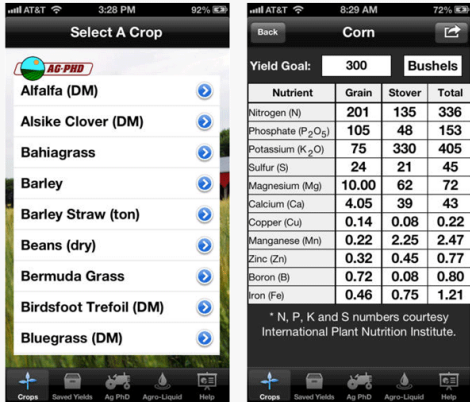

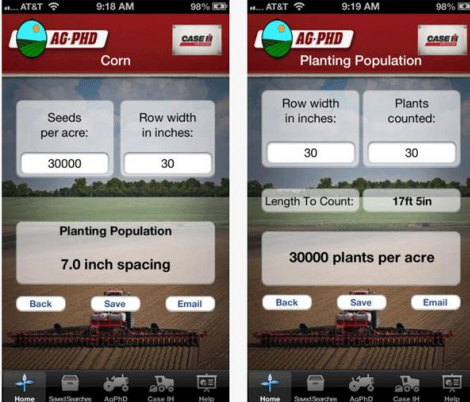
Each of the next nine issues of the eUpdate will feature another classification of Ag-Apps from our KSUCROPS Crop Production team and the K-State Department of Agronomy!

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jjalbers@ksu.edu

2. Calculator Apps

These Apps are primarily utilized for calculation of planting, spraying, fertilizing, and harvesting purposes; and for estimating yields.

| MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University | | | |
|---|---|--|---|
| Calculator Apps | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>Fertilizer Removal by Crop</p>  <p>AG-PHD</p> |  | <p>Select your crop and the desired yield for that crop, and you will be given the amount of vital crop nutrients that your desired yield will need.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Planting Population Calculator</p>  <p>AG-PHD</p> |  | <p>The Ag PhD Planting Population Calculator aids you in determining planting population and stand counts for the crops on your farm.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |

Pioneer Planting Rate Estimator

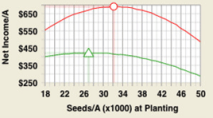


DuPont Pioneer

Planting Rate Estimator Add Cancel Add Hybrid Info Done

32N73 Grain Price: \$4.00
Seed Drop/A: 32,300 Seed Cost: \$3.50
Net Income/A: \$690 Yield Goal: 200

P0392AMX-R Grain Price: \$4.00
Seed Drop/A: 27,000 Seed Cost: \$3.50
Net Income/A: \$420 Yield Goal: 130



| Hybrid | Years Tested | Locations |
|------------|------------------|-----------|
| 32N73 | 2009, 2010 | 14 |
| P0392AMX-R | 2011, 2012, 2013 | 35 |

* Planting rate and seed cost were increased by 5% to account for early season stand loss.

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Search Hybrids

- 32N73
- 33D42
- 33D49
- 33F85
- 33F87
- 33F88
- 34F07
- 35F37
- 35F40
- 35F44
- 35F48AM1

Grain Price: \$4.00 Seed Cost: \$3.50
Yield Goal:

Determine your optimum planting rate for DuPont Pioneer corn products.

FREE

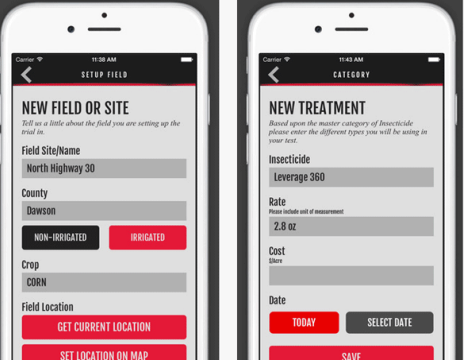
[iOS](#)

Nebraska On-Farm Research Network



Move Creative, LLC (University of Nebraska-Lincoln)

Setup Each Test Plot Separately Add Each Treatment & Rate



App allows you to enter treatments made on individual fields, and compare yields across the field while also allowing in-season notes to be taken.

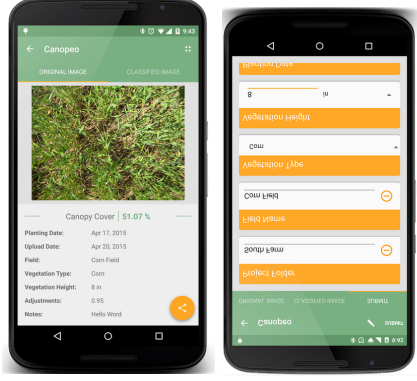
FREE

[iOS](#)
[Android](#)

Canopeo



Oklahoma State University



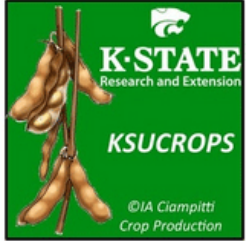
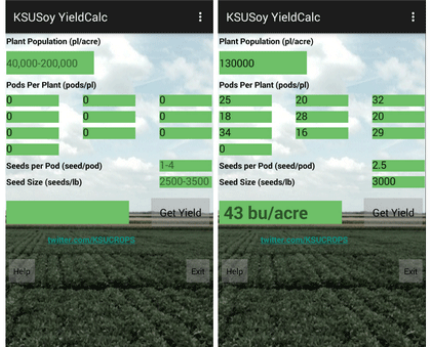

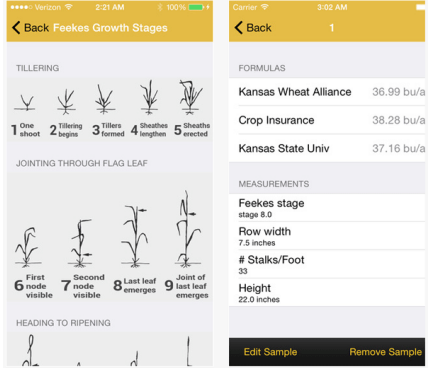

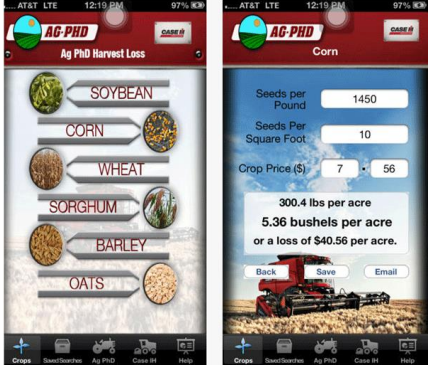
Canopeo is a rapid and accurate green canopy cover measurement tool.

FREE

[iOS](#)
[Android](#)

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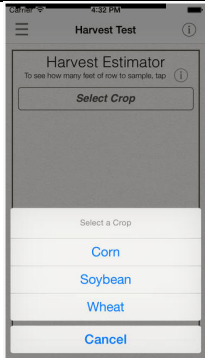
Calculation Apps

| Name of App and Source | Picture | Brief description and cost | Download |
|--|---|---|---|
| <p>KSUSoyYieldCalc</p>  <p>K-State Research and Extension KSUCROPS ©IA Ciampitti Crop Production</p> |  | <p>This app estimates soybean yields from inputs of plant population, pods per plant, seeds per pod, and seed size.</p> <p>FREE</p> | <p>Android</p> |
| <p>Kansas Wheat Yield Calculator</p>  <p>Kansas Wheat Alliance YIELD CALCULATOR</p> <p>Kansas Wheat Alliance, Inc.</p> |  | <p>This app lets producers collect information about their winter wheat fields and gives an assessment of potential yield prior to harvest.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Harvest Loss Calculator</p>  <p>AG-PHD</p> |  | <p>Select your crop and input the number of seeds/kernels you count on the ground per sq. ft. to get a harvest loss calculation.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |



Harvest Test Weight Converter

University of Nebraska-Lincoln



Assists in determining shrink volumes of grain, in-field estimation of crop yields, and volume of grain bins and grain piles.

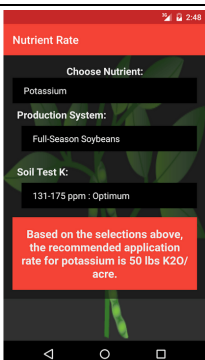
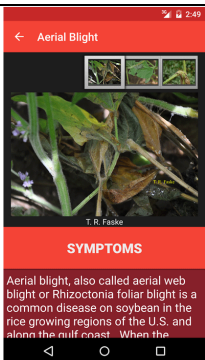
FREE

[iOS](#)
[Android](#)



Soybean Advisor

University of Arkansas System, Division of Agriculture



Assists soybean producers by calculating rates for lime and nutrients; identify and assess nutrient and water needs, and disease and insect pressure.

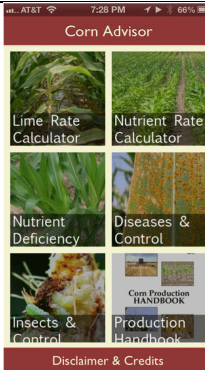
FREE

[Android](#)



Corn Advisor

University of Arkansas System, Division of Agriculture




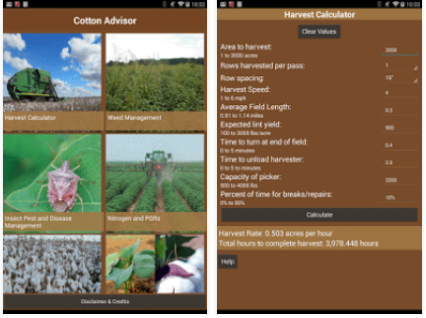

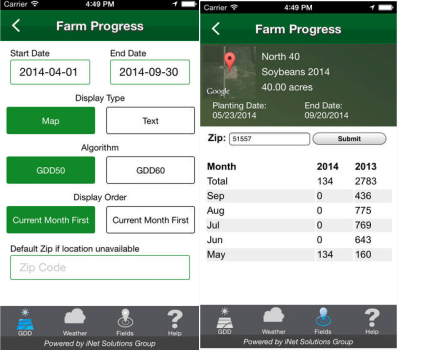
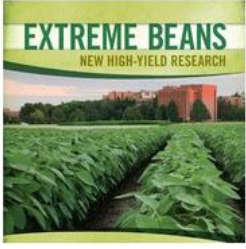

Assists corn producers by calculating rates for lime and nutrients; identify and assess nutrient and water needs, and disease and insect pressure.


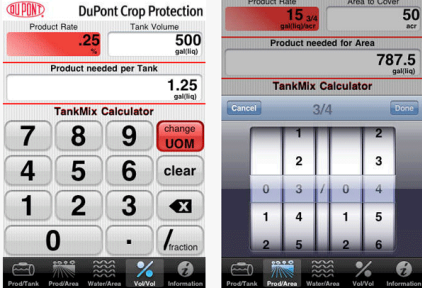

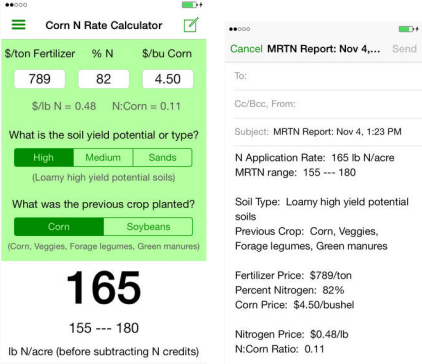

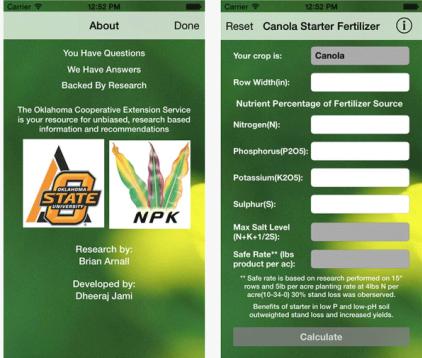
FREE



[iOS](#)
[Android](#)

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Calculation Apps

| Name of App and Source | Picture | Brief description and cost | Download | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|--------------------------------|------|-------|-----|------|-----|---|-----|-----|---|-----|-----|---|-----|-----|---|-----|-----|-----|-----|---|---|
| <p>Cotton Advisor</p>  <p>University of Arkansas System, Division of Agriculture</p> |  | <p>Assists cotton producers by calculating rates for lime and nutrients; identify and assess nutrient and water needs, and disease and insect pressure.</p> <p>FREE</p> | <p>Android</p> | | | | | | | | | | | | | | | | | | | | | |
| <p>Growing Degree Days</p>  <p>iNet Solutions Group</p> |  <table border="1" data-bbox="682 1144 868 1249"> <thead> <tr> <th>Month</th> <th>2014</th> <th>2013</th> </tr> </thead> <tbody> <tr> <td>Total</td> <td>134</td> <td>2783</td> </tr> <tr> <td>Sep</td> <td>0</td> <td>436</td> </tr> <tr> <td>Aug</td> <td>0</td> <td>775</td> </tr> <tr> <td>Jul</td> <td>0</td> <td>769</td> </tr> <tr> <td>Jun</td> <td>0</td> <td>643</td> </tr> <tr> <td>May</td> <td>134</td> <td>160</td> </tr> </tbody> </table> | Month | 2014 | 2013 | Total | 134 | 2783 | Sep | 0 | 436 | Aug | 0 | 775 | Jul | 0 | 769 | Jun | 0 | 643 | May | 134 | 160 | <p>This app measures the maturity of your crop by analyzing current and past growing degree days data for your farm's location.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| Month | 2014 | 2013 | | | | | | | | | | | | | | | | | | | | | | |
| Total | 134 | 2783 | | | | | | | | | | | | | | | | | | | | | | |
| Sep | 0 | 436 | | | | | | | | | | | | | | | | | | | | | | |
| Aug | 0 | 775 | | | | | | | | | | | | | | | | | | | | | | |
| Jul | 0 | 769 | | | | | | | | | | | | | | | | | | | | | | |
| Jun | 0 | 643 | | | | | | | | | | | | | | | | | | | | | | |
| May | 134 | 160 | | | | | | | | | | | | | | | | | | | | | | |
| <p>Extreme Beans</p>  <p>United Soybean Board</p> |  | <p>This app allows soybean farmers to access recent soybean research, and to calculate the most effective seeding rates for high yield results.</p> <p>FREE</p> | <p>Android</p> | | | | | | | | | | | | | | | | | | | | | |

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| <p>Tank Mix</p>  <p>DuPont</p> |  | <p>This app allows you to easily calculate the amount of product needed to treat a specific field area, with a specific tank size, for correct volume-to-volume ratio.</p> <p>FREE</p> | <p>iOS</p> |
| <p>Corn N Rate Calculator</p>  <p>University of Wisconsin Nutrient and Pest Management Program</p> |  | <p>This app is designed to assist in selecting an N rate that improves profitability when N and corn prices fluctuate.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>Canola Starter</p>  <p>Oklahoma State University</p> |  | <p>This app calculates the maximum amount of fertilizer that should be applied with winter canola seed at planting.</p> <p>FREE</p> | <p>iOS</p> |


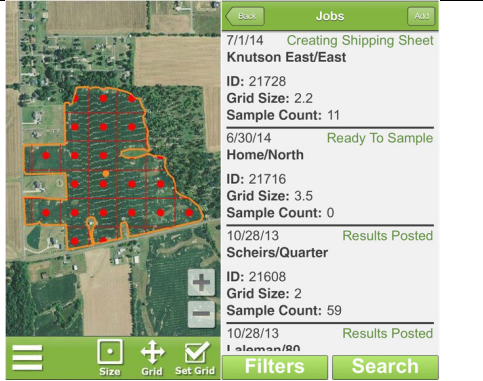
| | | | |
|---|---|---|---|
| <p>Manure Valuator</p>  <p>University of Arkansas</p> |  | <p>This app can be utilized to calculate the cost of the nutrients to be applied (fertilizer replacement value) and the nutrients needed by the crop.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
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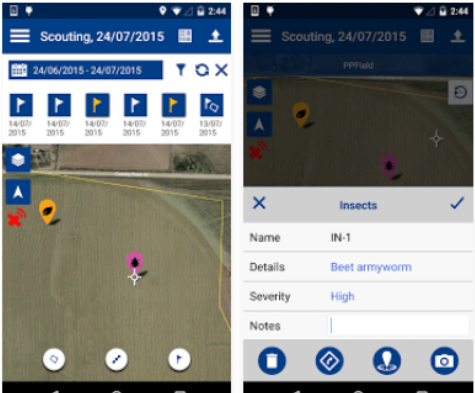


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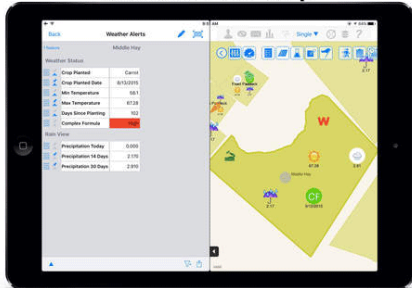
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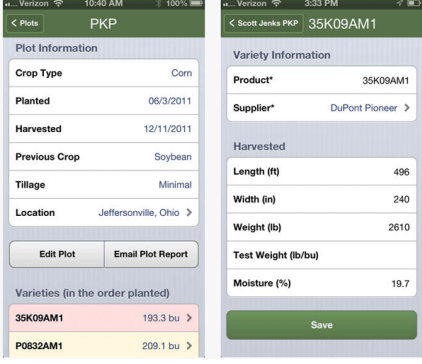

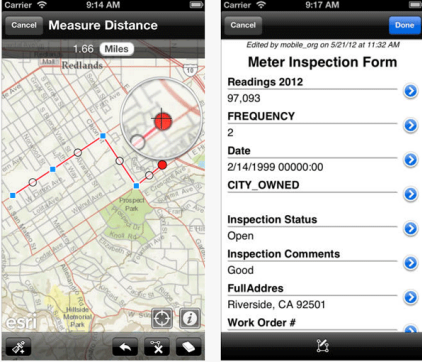

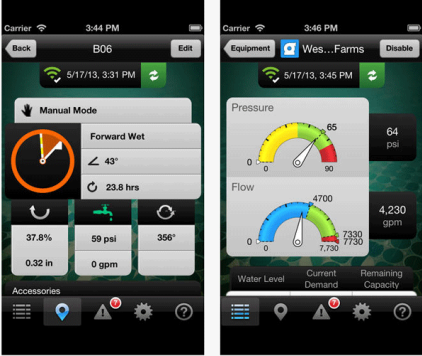
3. Scouting Apps

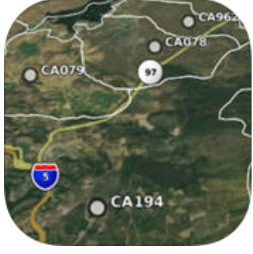
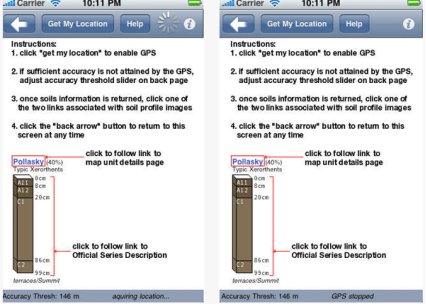
These Apps are primarily utilized for scouting purposes or for geo-positioning (soil sampling, recording notes, soil types, etc.).



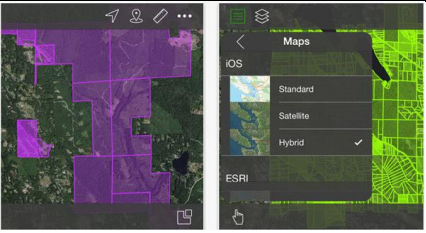
| <i>MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University</i> | | | |
|---|---|--|---|
| Scouting Apps | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>Ag PhD Soil Test</p>  <p>AG-PHD</p> |  | <p>With this app you will receive high quality lab results and personalized recommendations from Ag PhD experts.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |


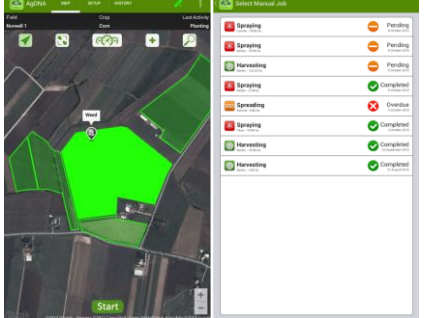
| | | | |
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| <p>Connected Farm Scout</p>  <p>Trimble Navigation Limited</p> |  | <p>The scout app uses your phone's GPS for mapping field boundaries, marking flags, and entering scouting information for points, lines, and polygon areas.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
| <p>eCropScout 2.0</p>  <p>Prairie Farm Club, Inc.</p> |  | <p>This app is designed to be used by crop consultants, farmers, seed dealers, agronomists, and Ag Professionals to deliver real-time crop condition maps.</p> <p>FREE</p> | <p>Android</p> |

| MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University | | | |
|---|---|---|----------------------------|
| Scouting Apps | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>iCropTrak</p>  <p>ScanControl</p> | <p>All Data ONE Map</p>  | <p>This app is user customizable, capable collecting and editing vectors, drone imagery, equipment, and more. It is a consultant in your pocket.</p> <p>\$1-5</p> | <p>iOS</p> |

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| <p>Pioneer Field360 Notes</p>  <p>DuPont Pioneer</p> |  | <p>This app pinpoints your field location via satellite imagery so you can record notes or photos on the spot. Organize your crop scouting information to save or share.</p> <p>FREE</p> | <p>iOS</p> |
| <p>AgPlots</p>  <p>August Knecht</p> |  | <p>This app offers a simple method of calculating and storing grain yields for your corn, soybean, and wheat plots. Simply punch the numbers into your phone to compare and save.</p> <p>FREE</p> | <p>iOS</p> |
| <p>ArcGIS</p>  <p>ESRI</p> |  | <p>With this app use your current location and discover information about what you see. Also measure distances and areas of interest, and share maps with others.</p> <p>FREE</p> | <p>iOS Android</p> |
| <p>FieldNET Mobile</p>  <p>Lindsay Sales & Service, LLC</p> |  | <p>With this app, you can remotely manage your pivots, laterals, drip/micro-irrigation systems, and pumps. Users can quickly monitor and control irrigation equipment.</p> <p>FREE</p> | <p>iOS Android</p> |

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| <p>SoilWeb</p>  <p>CA Soil Resource Lab</p> |  | <p>This app retrieves official soil series descriptions and summaries of soil types associated with the current geographic location.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
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| MOBILE AGRICULTURAL APPS – REVIEW from KSUCROPS ©Kansas State University | | | |
|---|---|--|---|
| Scouting Apps | | | |
| Name of App and Source | Picture | Brief description and cost | Download |
| <p>Sirrus</p>  <p>SST Software, Inc.</p> |  | <p>This app allows you to create field boundaries, soil sample, scout your crops, record field operations, create recommendations, check weather conditions, and graph rainfall estimates.</p> <p>FREE</p> | <p>iOS</p> |
| <p>Wolf-GIS APEX</p>  <p>Wolf-Tek, Inc.</p> |  | <p>This app provides a simple way to map, manage (customize drawings, measure distance, GIS functions) and display information from any location.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |

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|---|---|---|---|
| <p>AgDNA</p>  <p>AgDNA</p> |  | <p>AgDNA features include: farm planning, record keeping, boundary mapping, live equipment tracking, scouting observations, and data sharing.</p> <p>FREE</p> | <p>iOS</p> <p>Android</p> |
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