Using myFields.info to make decisions and manage pests

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Why?

Resources
Land, H2O, Energy

Environment
Climate change

Competition
Food or Fuel?

Food Producers

7B to 9B
2016 to 2045

Sustainable Biointensification
Godfray et al. 2010
Information

*when and where* you need it.
Small size, large computing power

*Faster networks!
Google Goggles

Use pictures to search the web. Watch a video

GPS, accelerometer, camera, bluetooth, wifi, 3G, voice, etc.

Google Glasses
being online vs going online

the web as an application platform

the participatory (read-write) web

digital self expression

social affiliation

web 2.0

“footprint”
Field (few acres to >100s)
Crop (3-6 types)
Varieties (1000s)
+ Management Decisions

K-State Research and Extension

Agronomy
Pathology
Entomology
Grain Science
Mobile technologies to increase efficiency and effectiveness

Facilitating networks, not just extending programs
- Form & function
- Shared database
- Community
- People first, mobile second
myFields.info

Customize your Extension experience.

K-STATE
Research and Extension
Crop & field specific  Customizable

Find Resources  Diagnostic Guides

Variety Support System  Manage Fields

My Pest Map  Scout a Field

[INTEGRATION]

Agronomy, pathology, entomology, economics, geography, etc.
asymmetrical dataflow

Who (username)

When (timestamp)

Where (geolocation)

Variety planted (IPM)

User preferences:
- alerts/notifications
- access times/duration
- networks/members

Variety bookmarks

Pest sampling plans

How to sample

Crop specific plans:
- What to sample
- When & where to sample

Region-specific alerts

Variety performance

Retail distributor lists

Optimal planting dates

...too many to list!
Found a pest, now what?
...ask Google, of course!

Step inside the world of Rio's favelas

Precision agriculture?
How to Use This Guide

This publication was prepared to help producers manage insect populations with the best available methods proven practical under Kansas conditions. It is revised annually and intended for use during this calendar year. The user should be aware that pesticide label directions and restrictions are subject to change, and some may have changed since this publication was written. The economics of control should be considered in any pest management decision. Because costs vary greatly over time and are influenced by factors beyond the scope of this publication, product cost in general is not considered a reason for including or omitting specific insecticide products in these recommendations. Always compare product price, safety and availability when making treatment decisions. The user bears ultimate responsibility.

Bend about 1.5 row feet of plants from adjacent rows over the cloth, and shake vigorously for a few seconds. Count the insects that fall on the cloth. Repeat this operation in at least 10 locations per field, and average the results. Use of a slick-sided material will help keep the insects from crawling away before they are counted.

Recent problems in Kansas seem to be most serious where heavy rates of liquid or solid livestock manure have been spread on the field just before planting or where soybeans are planted in no-till situations.

Some planter box seed treatments containing permethrin (Kernel Guard Supreme or KickStart VP) are labeled for controlling these pests in soybeans. In addition, the seed treatments thiamethoxam (Cruiser 5FS or CruiserMAXX) and imidacloprid (numerous products) are labeled for protecting soybeans against the seed corn maggot. Follow label directions and DO NOT use leftover seed for food, oil, or livestock feed.

Aphids

Soybean Aphid

The soybean aphid, *Aphis glycines*, has been present in eastern Kansas since 2002.
kudzu bug (Megacopta cribraria) January 1, 2009 - December 31, 2015

Legend


Source of information
Pest Sampler and Economic Decision Support

**Speed Scouting for Soybean Aphid**

For blank forms and an interactive example, go to www.soybeanaphid.info

**Directions for Speed Scouting:**

1. Go to a plant at random and start counting aphids. If less than 40 aphids are on the ENTIRE plant, mark a minus [-] for that non-infested plant. If you reach 40 aphids, STOP COUNTING (this is the speedy part!) and mark a plus [+] for that infested plant.

2. Walk 30 rows or paces at random to find the next plant. Repeat Step #1 until 11 plants are sampled in different areas of the field. Total the number of infested plants [+] to make a treatment decision.

3. If you must ‘CONTINUE SAMPLING’ (7-10 plants with a [+]), sample 5 more plants and use the new total number of plants to make a decision.

4. If no decision is reached, sample additional sets of 5 plants until 31 plants are sampled. Remember, always use the total number of infested plants [+] to make a decision. If no decision can be made after sampling 31 plants, resample the same field in 3-4 days.

5. A ‘TREAT’ decision must be confirmed a second time 3-4 days later. If confirmed, apply an insecticide in 3-4 days.

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**Decision Table**

<table>
<thead>
<tr>
<th>DO NOT TREAT, resample in 7-10 days</th>
<th>CONTINUE SAMPLING 5 more plants</th>
<th>TREAT, confirm again in 3-4 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>6 or less</td>
<td>7 to 10</td>
<td>11 or more</td>
</tr>
<tr>
<td>10 or less</td>
<td>11 to 14</td>
<td>15 or more</td>
</tr>
<tr>
<td>14 or less</td>
<td>15 to 18</td>
<td>19 or more</td>
</tr>
<tr>
<td>18 or less</td>
<td>19 to 22</td>
<td>23 or more</td>
</tr>
<tr>
<td>22 or less</td>
<td>23 to 26, Stop sampling! Return in 3-4 days.</td>
<td>27 or more</td>
</tr>
</tbody>
</table>

Remember: Use [+ or [-] notations for each plant sampled.

- = < 40 aphids/ plant (‘non-infested’)
+ = ≥ 40 aphids/plant (‘infested’)

Remember: If you have to continue sampling, add the previous number of infested plants [+] to the next 5-plant count to make a treatment decision.

Speed Scouting was originally developed by Erin Hodgson, Brian McCormack, and David Ragsdale, University of Minnesota Entomology Department.
Union Station, InfoAg 2016

Field Site Soybean Expo has been created.

Actions

- Plant a crop
- Scout for pests
- View pest map

Pest sample history
<table>
<thead>
<tr>
<th>Insecticide</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acephate (selected formulations of Acephate, Bracket, and Orthene)</td>
<td>(See supplemental labels for formulations)</td>
</tr>
<tr>
<td>Acetamiprid plus bifetethrin (Justice)</td>
<td>0.0351 to 0.0422 lbs. a.i./acre (2.5 to 3.0 fl oz./acre)</td>
</tr>
<tr>
<td>Alpha-cypermethrin (Fastac EC)</td>
<td>2.8 to 3.8 fl oz./acre</td>
</tr>
<tr>
<td>Beta-cyfluthrin (Baythroid XL)</td>
<td>0.0155 to 0.022 lbs. a.i./acre (2.0 to 2.8 fl oz./acre)</td>
</tr>
<tr>
<td>Bifenthrin plus imidacloprid (Tempest)</td>
<td>0.06 to 0.095 lbs. a.i./acre (3.8 to 6.1 fl oz./acre)</td>
</tr>
<tr>
<td>Chlorpyrifos (Lorsban 4E)</td>
<td>1 to 2 pints/acre</td>
</tr>
<tr>
<td>Chlorpyrifos plus gamma-cyhalothrin (Cobalt)</td>
<td>13 to 26 fl. oz. of product/acre</td>
</tr>
<tr>
<td>Chlorpyrifos plus zeta-cypermethrin (Stallion)</td>
<td>5.0 to 11.75 fl. oz./acre</td>
</tr>
</tbody>
</table>
## My Field Guide

Refresh page to update your list

- Select Pest -

Go

>> View all profiles in your guide.

## My Variety List

- Select Variety -

<table>
<thead>
<tr>
<th>Pest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sorghum alsinum</td>
</tr>
<tr>
<td>Sorghum Webworm</td>
</tr>
<tr>
<td>Southwestern Corn Borer</td>
</tr>
<tr>
<td>Soybean Aphid</td>
</tr>
<tr>
<td>Sugarcane Aphid</td>
</tr>
<tr>
<td>Western Bean Cutworm</td>
</tr>
<tr>
<td>Wild Garlic</td>
</tr>
</tbody>
</table>

Find it once & “follow”
Not just insect pests
Chemical selector

Crop type: Soybean
Application type: Postemergence

Pounds of active ingredient per acre
Lactofen 0.16 to 0.2

Product quantity per acre
10 to 12.5 oz Cobra, or 10 to 12.5 oz Phoenix

Comments and limitations
A contact herbicide that controls many broadleaf weeds. Apply to small, actively growing weeds before they reach size limits listed on the labels (normally 2 to 3 weeks after planting). Apply with 1 pt/acre COC when soybean is at the first or second trifoliate leaf stage. NCS applies this rate of trifoliate soybean.
Where are we headed?

http://myfields.info/features

Customize your Extension experience.
Select variety

Plant field

Scout field

Select pesticide

Harvest

Decision support tools (mobile and desktop)

Alerts

Select content

Few varieties, location and stage specific recommendations (pests, fertility, etc.) based on crop/variety planted and predicted crop stage...

Module

Planting module

Phenology module

Controller
(module, permissions)

Pests

Fertility

Field data: history, GPS, variety, conditions, etc.

All content

1000’s of varieties, year x location variability, diverse pest distributions and phenologies, fertility interactions, rotational effects...
According to Rogers’ Diffusion of Innovation Theory, “spreading innovation is a social process that requires people talking to people about new ideas” (Rogers 1995).
Do

- Think people first, mobile second
- Form and function
- Adoption through feedback
- Users as “uploaders”
- Try new things, small bytes
- **Adapt, it’s what we do best!**

Don’t

- Create detour activities
- Exclude users from the sandbox
- Put all your bytes into one basket
- Expect to know it all
small UAS

“one more data layer”
One image, several experts:

- Insects?
- Diseases?
- Water?
- Weeds?
- Nutrients?
- Other?

Smart analysis engines & communication
Perry Holden discusses corn germination tests on the Seed Corn Gospel Train that traversed Iowa in the early 1900s. *Photo from Iowa State University Archives.*

“I follow the principle that all people in the state are, in reality, students of the college... therefore, we must go to them and help them where they are, under their own conditions, with their own problems.”—Perry Holden