Farmers need to protect their crops from damaging pests.

Pesticides help farmers have better harvests while using resources more efficiently.

Farmers use pesticides sensibly in a targeted way.

Farmers apply the right protection, in the right place, at the right time, in the right amount.

Regulatory authorities rigorously assess pesticide safety.

All pesticides undergo comprehensive evaluations by regulatory authorities before they can be sold.

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2. EPA.gov: [https://www.epa.gov/pesticide-registration/study-profile-templates](https://www.epa.gov/pesticide-registration/study-profile-templates)

---

The annual loss in harvests to weeds, insects, and diseases. This could double without crop protection products.

<table>
<thead>
<tr>
<th>Up to 40%</th>
<th>More than 100</th>
</tr>
</thead>
</table>

The number of safety studies required by regulatory authorities before a pesticide is approved.
Farmers Need New Herbicide Technologies

- Increased weed pressures
- Increased resistance from overuse of certain tools
- Encouraging growers to use multiple sites of action to help prevent resistance means new and diverse tools are needed
### Development of XtendiMax® with VaporGrip® Technology

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>Began working with the University of Nebraska, Lincoln</td>
</tr>
<tr>
<td>2006</td>
<td>Crop transformation and event selection begins</td>
</tr>
<tr>
<td>2008</td>
<td>Monsanto teams began researching new dicamba formulation</td>
</tr>
<tr>
<td>2010</td>
<td>Roundup Ready PLUS® Crop Management Solutions is introduced</td>
</tr>
<tr>
<td>2010-12</td>
<td>Vaporgrip® Technology discovered</td>
</tr>
<tr>
<td>2012</td>
<td>Trials begin</td>
</tr>
<tr>
<td>2013</td>
<td>Academics began testing M1691 for drift and weed control</td>
</tr>
<tr>
<td>2015</td>
<td>Roundup Ready 2 Xtend® soybeans receive approval</td>
</tr>
<tr>
<td>2015</td>
<td>Bollgard II® XtendFlex® cotton is approved</td>
</tr>
<tr>
<td>2015</td>
<td>XtendiMax® with Vaporgrip® Technology approved for in-crop use</td>
</tr>
<tr>
<td>Nov. 2016</td>
<td></td>
</tr>
</tbody>
</table>
Outstanding performance drives grower demand for Xtend Crop System

<table>
<thead>
<tr>
<th>Year</th>
<th>Acres Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>2017</td>
<td>25+M acres</td>
</tr>
<tr>
<td>2018</td>
<td>55+M acres</td>
</tr>
<tr>
<td>2019 (Expected)</td>
<td>60+M acres</td>
</tr>
</tbody>
</table>

Acres represent Roundup Ready 2 Xtend® soybeans and cotton with XtendFlex® Technology combined.
Multiple enhancements ensure success in 2018

<table>
<thead>
<tr>
<th>EPA label enhancements</th>
<th>Mandatory dicamba training</th>
</tr>
</thead>
<tbody>
<tr>
<td>RRXtend Spray App</td>
<td>1.1+ free million nozzles</td>
</tr>
<tr>
<td>Technical support call center</td>
<td>Collaborative inquiry process</td>
</tr>
</tbody>
</table>

Commitment to ongoing information sharing

Coordination with academics and state/federal officials
EPA Label Enhancements

Mandatory training

Record keeping requirements

Restricted Use Pesticide (RUP) designation
Understanding and following all label directions is key for any pesticide.

94,000 growers and applicators participated in trainings hosted by public and private sectors (registrants, universities, state Departments of Agriculture).
RRXtend Spray App

Introducing the RRXtend Spray App

The RRXtend Spray App provides farmers and applicators with a convenient and easy-to-use tool to support an improved spray decision process and an even more successful 2016 season.

Forecasts ➔ Provide field level, location specific, hourly forecasts, including the following:
- Wind speed and direction
- Temperature
- Relative humidity
- Dew point
- Inversion risk forecasts to show the probability by percentage of an inversion occurring at a particular location and forecast hour.
- Precipitation
- Snowfall
- Record Keeping ➔ Help applicators comply with and streamline mandatory federal dicamba record keeping requirements with the following features:
- Digitally complete application records with greater ease of use, including smart data capabilities.
- Create one time profiles and this information will auto population into future records.
- Store and export field records. All information remains stored within the phone.

Resources ➔ Access to helpful information all in one place, at your fingertips:
- Links to several key resources including training information, product labels and approved label mixtures and residues.
- Educational videos including insights on the methods and models utilized in the inversion risk forecast tool.

Available Now ➔

Monsanto Company Confidential
More research, investment & collaboration

Sharing Information and Advancing Knowledge Base About the Science Behind XtendiMax® with VaporGrip® Technology

<table>
<thead>
<tr>
<th>Field Trials and Research</th>
<th>Infrastructure Investment</th>
<th>Information Sharing</th>
</tr>
</thead>
<tbody>
<tr>
<td>Australia</td>
<td>Expanding Weather Station Network</td>
<td>Regular Updates Throughout Season</td>
</tr>
<tr>
<td>Multi-state large-scale GLP studies</td>
<td>10+ States</td>
<td>Engagement with Academics and Others</td>
</tr>
<tr>
<td>Multi-year weed management trials with 21 universities</td>
<td>Developed Enhanced Inversion Risk Model</td>
<td>Invitations to Observe Trials</td>
</tr>
<tr>
<td>VaporGrip Technology research with 13 university programs</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Expanding Weather Station Network

10+ States

Developed Enhanced Inversion Risk Model

Regular Updates Throughout Season

Engagement with Academics and Others

Invitations to Observe Trials
Arizona study shows VaporGrip® Technology effectively controls volatility in extreme heat
1-844-RRXTEND

1-844-RRXtend Call Center General Process Flow

Call to St. Louis based 1-844-RRXTEND

Grower Contacted Field Visit Data Entry QC Review Expert Review

Day 1 2 3 4 5 6 Day 7+

*This timeline should only serve as a general guideline as to the process and not infer actual completion times based upon date of call into 1-844-RRXtend.

Note: Inquiries are defined as the number of fields for which calls are received to 1-844-RRXTEND from applicators or non-applicators. The inquiry figures are not necessarily equal to the number of calls received since a single call could include one or multiple fields. It is also possible that a field could be counted twice if we receive a call from an applicator and a non-applicator about the same field. Please let me know if you have any questions.
Xtend acres ▲107%

- 2017: 27M
- 2018: 56M

Inquiries ▼27%

- 2017: 523
- 2018: 381

Inquiries per million acres

- 2017: ~19-20
- 2018: ~6-7

As of July 12, 2018

Resources and support through 1-844-RRXTEND

- Agronomics and best management practices
- Application requirements
- Record keeping requirements
- Weed resistance monitoring
- Potential off-target movement inquiries
- Potential contamination inquiries
- Environmental conditions and impacts
- Potential generic product use
Recap

Significant preparation and ongoing training were key to increasing grower awareness and achieving on-target applications

Ongoing commitment to proactive information sharing, coordinating with academics and state officials

Established a solid framework to streamline the inquiry and reporting process to support growing demand

Differentiating between inquiries that may be the result of dicamba and inquiries that are the result of other sources

Enhanced technology and additional tools are essential for continued growth and positive economic impact for growers
Thank You