Updates from PFI’s Horticulture Program

Liz Kolbe

2019 Annual Conference
- Programming Overview
- Cooperators’ Program
- Whole Farm Financial Project
- Yield Data Website
- Pesticide Drift
- The Future
- Questions and Discussion
HORTICULTURE

CROPS
Vegetables
Orchard and Tree Crops
Berries and Brambles
Cut Flowers
Culinary and Medicinal Herbs
Seedlings and Plants
Mushrooms
Other crops that don’t fit anywhere else
HORTICULTURE

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TOPICS
In-Field Practices
Tools, Tractors, Implements
Packing House, Cold Storage
High Tunnel, Greenhouse
Pricing, Marketing
Farm Financials
Business Management
Labor Management
Life Balance and Wellness
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ALSO
On-Farm Research
Pesticide Drift
Pollinator and Beneficial Insect Habitat

PRACTICALFARMERSOFIOWA
Farmer-led HORTICULTURE event totals, 2017 & 2018

- 31 Annual Conference Sessions
- 21 Field Days
- 12 Farminars
+ 20 Workshop Days, Meet-Ups
- 83 Horticulture Events
HORTICULTURE events, 2017 & 2018 (and a few 2019)
HORTICULTURE – 2017 Field Days

Weed-Slayers: Two-Wheel Tractors – Jill Beebout and Jeff Lauber
Tools and Tractors with T.D. – T.D. Holub
Grafting, Summer Pruning, New Fruit at Berry Patch – Dean and Judy Henry
Earning a Living on an Urban Farm – Jon Yagla and Wren Almitra
Growing Giants for the Fair – Marty and Mary Schnicker
Oyster Mushroom Production – Tyson Allchin
Farmer-Led Aggregation – Jan Libbey
A Little Bit of Everything in Everly – Mike and Darla Eeten
Dried Flower Production – Fred Howell
Looking Back at the First Year of Farming – Jayme Fowler and Susan Jutz
Hand Tools and Implements for Small Vegetable Farms – Jason Grimm (Partner: Grow Johnson County)
Tools and Tractors with T.D.
Garden Oasis Farm, T.D. Holub
Dried Flower Production
Howell’s Floral and Greenhouse, Fred Howell
HORTICULTURE – 2018 Field Days

Growing Garlic and Marketing the Farm – Jordan Clasen and Whitney Brewer
Teaming Up and Starting a Vegetable Farm – Hannah Breckbill and Emily Fagan
Landing a Farm: Long-Term Leases – Kate Edwards
Terry’s Techniques: Seed-Saving and Weed Control – Terry Troxel
Raising Prairie: Seeds, Plants and Restoration – Dwight and Bev Rutter
Planning and Installing Beneficial Insect Habitat – Andrew and Melissa Dunham (Partner: Xerces Society)
Tree Crop Field Class – Tom Wahl and Kathy Dice
Cider and Pumpkins at Historic Deal’s Orchard – Chris and Tracy, Benji, Jerald and Cindy Deal
Production to Market at Pheasant Run Farm – Ann and Eric, Calvin Franzenburg
Root and Tuber Crop Production – John and Janna Wesselius
Growing Garlic and Marketing the Farm
Grade A Gardens, Jordan Clausen & Whitney Brewer
Raising Prairie: Seeds, Plants and Restoration
The Prairie Flower, Dwight & Bev Rutter
- Managing a Young and Growing Orchard
- Using Habitat to Increase Beneficial Insects on Fruit and Vegetable Farms
- Ecology and Management of Iowa’s Common Vegetable Insect Pests
- Alternative Models & the Future of CSA
- Field Preparation, Cultivation & Fertility
- Physical Strengthening, Recovery & Injury Prevention for Vegetable Farmers
- Hiring Migrant and Seasonal Workers and Year-Round Employees
- Learning from On-Farm Research: Horticulture
- Winter Vegetable Production
- Indoor Mushroom Production and Marketing
- GAP, FSMA and Post-Harvest Handling for Food Safety
- Foraging for Market: Morels and Greens
- Pack Shed and Post-Harvest Efficiency
- Growing Better Brussels Sprouts
Conference Recordings on PFI’s Youtube Channel

Tony Gallo - Physical Strengthening, Recovery and Injury Prevention - PFI 2018 Annual Conference
HORTICULTURE – 2017-18 Workshops and Meet-Ups

Alternative Berry Short Course (2 days)
Advanced Financial Planning for Fruit & Vegetable Farms with Holistic Management International (2 days)
High Tunnel Build (2 days) x 2
Welding Workshops x 3
Tractor Operation, Safety and Maintenance for Fruit and Vegetable Farmers (2 days) x 2
Orchardist Gathering
Fruit and Vegetable Farmer Meet-Ups x4
Tractor Operation, Safety and Maintenance (2-day x 2)
Shane LaBrake
HORTICULTURE – 17-18 Farminars

Watch in the Farminar Archive!

2017
Risk Management for a Diversified Farm – Andrew Dunham
Variety Selection for Vegetable Production – Rob Faux
Organic Apple Production – Maury Wills
Effective Mentor Relationships - Denise O'Brien, Scott Yahnke, Ali Clark
Achieving Profitability with Fruits and Vegetables – Natasha Hegmann, Ryan Pesch (MN)
Grow Flowers That Sell: Top 10 Sellers at Brightflower Farm -Jeanie McKewan (IL)

2018
Using Permaculture Design and Farming Solo – Clare Hintz (WI)
Dive Into Growing Woodies as Cut Flowers – Rachael Ackerman (MN)
Pollinator Habitat: A Guide to Native Restoration - Jessi Strinmoen (MN), Dennis Pederson
Managing Disease in Organic Vegetable Crops – Beth Kazmar (WI)
Organic Seedling Production – Paul Betz (VT)
Getting Started Growing and Marketing Unusual Fruits – Tim Clymer (PA)
HORTICULTURE – 2019 Farminars
New Platform! (mobile-friendly)
Tues. 7 p.m.

Feb. 5 – “No-Till Vegetable Production”
Elizabeth and Paul Kaiser, Singing Frogs Farm (CA)

Feb. 12 – “Ridge-Till Vegetable Production”
Brian Caldwell, Cornell University (NY); Jordan Scheibel, Middle Way Farm
Chestnut Growers Workshop

Saturday, February 2 | 9am–5pm
Iowa Arboretum
1875 Peach Ave | Madrid, IA 50156

$10 for Practical Farmers of Iowa Members
$60 for Non-Members of Practical Farmers of Iowa
Lunch is included with registration.
Join PFI now and receive the member registration rate for the workshop!

Speakers include:
Tom Wahl & Kathy Dice, Red Fern Farm
Mike Gold, Missouri Center for Agroforestry
Roger Smith, Prairie Grove Chestnut Growers
Meet-Ups – Breakfast with farming friends and PFI!
9:30 - 11:30 a.m.

Feb 5: Waverly, Wild Carrot
Feb. 7: Logan, Logan Flours
Feb. 26: Solon, Salt Fork Kitchen
Feb. 28: Decorah, Potluck!
Date TBD: Des Moines, HoQ
Date TBD: Northwest Iowa?
How does PFI decide which programs and events to do?

Do we have evidence that farmers want it?
Does it fit with our strategic plan?
Does it fit with our mission and vision?
Does it foster our key niche (farmer-to-farmer)?
Does it have board support?
Is it non-duplicative of our current programming or our partners’ programming?
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Is it funded?
Is it fundable?
Is it likely to bring in members and/or funding?
As staff, do we have the interest and capacity to take it on?
Do we have the partnerships to take it on?
Has it been done before? Should it be done again?
Are we the only group that can take this on?
How do we get ideas for events?

- Evaluations
- Conversations
- Emails
- Phone Calls
- Facebook Groups
- Word-of-Mouth
- Watching at Events
- Networking

HORTICULTURE STEERING COMMITTEE
- Jill Beebout
- Jordan Clausen & Whitney Brewer
- Rob Faux
- Emma & Marcus Johnson
- Laura Krouse
- Jan Libbey
- Danelle Myer
- Jordan Scheibel
- John Wesselius
Where, who, what next? Ideas welcome!
PRACTICAL FARMERS OF IOWA
COOPERATORS' PROGRAM
FARMER-LED RESEARCH
2018 Horticulture Projects

- Summer Lettuce Variety Trial
- Cauliflower Variety Trial
- High Tunnel Tomato Variety Trial
- Summer Broccoli Variety Trial
- Summer Lettuce Germination Trial
- Enterprise Budget Comparison for Strawberry
- Enterprise Budget for Cherry Tomatoes
- Brassica Production Following Grazed and Ungrazed Cover Crop
- Smother Crops for Organic Control of Canada Thistle
### 2018 Summer Lettuce Variety Trial

<table>
<thead>
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<th>Rep 1</th>
<th>Rep 2</th>
<th>Rep 3</th>
<th>Rep 4</th>
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#### Lettuce Yield, Scheibel, lb/ft², Plots and Means

![Graph showing lettuce yield comparisons]
2018 Greenhouse Tomato Variety Trial

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<td>Dena</td>
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Mean Fruit Size, Matteson/Schick

- Big Beef Average
- Big Dena Average

Graph showing mean fruit size from May 20 to Aug 28.
2018 Cherry Tomato Enterprise Budget

Net Income by Unit

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<tr>
<th></th>
<th>Roller/Schintler</th>
<th>Johnson</th>
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<tbody>
<tr>
<td>Per Pound</td>
<td>$2.42</td>
<td>$1.79</td>
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<tr>
<td>Per Pint</td>
<td>$1.82</td>
<td>$1.34</td>
</tr>
<tr>
<td>Per sq-ft</td>
<td>$4.45</td>
<td>$3.76</td>
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</table>
2018 Cherry Tomato Enterprise Budget

Labor (Time) Breakdown by Task, per pound of cherry tomatoes produced

- Trellising and Pruning
- Planting and Transplanting
- Packhouse and Delivery
- Harvest
- Field Maintenance

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<th>Johnson</th>
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<td>2.0 minutes</td>
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<td>Planting and Transplanting</td>
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<td>1.0 minute</td>
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<tr>
<td>Packhouse and Delivery</td>
<td>3.0 minutes</td>
<td>1.0 minute</td>
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<tr>
<td>Harvest</td>
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<td>Field Maintenance</td>
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# The Latest Research from PFI

<table>
<thead>
<tr>
<th>Title</th>
<th>Year</th>
<th>Category</th>
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<tr>
<td>Winter Cereal Rye Cover Crop Effect of Cash Crop Yield – Year 10</td>
<td>2018</td>
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<tr>
<td>Whole Farm Financial Project: Analysis of 2013 – 2016 Financials</td>
<td>2018</td>
<td></td>
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<td>Annual Wildflower and Herb Mix for Pollinators</td>
<td>2018</td>
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<td>Underseeded vs. Mid-Summer-Seeded Green Manures for Corn</td>
<td>2018</td>
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<td>Spring-Seeded Cover Crops Ahead of Soybeans</td>
<td>2018</td>
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<tr>
<td>Corn Leaf Architecture for Interseeded Cover Crop</td>
<td>2018</td>
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</tbody>
</table>
2019 Horticulture Projects

- One-Cut Lettuce Variety Trial
- Romaine Variety Trial
- Summer Cabbage Variety Trial
- Cauliflower Variety Trial
- High Tunnel and Field Heirloom Tomato Variety Trial
- Mustard Variety Trial
- Dahlia Enterprise Budget
- Sweet Potato Enterprise Budget
- Summer Lettuce Germination Trial
- Squash Vine Borer Control
- Tea Bag Index in Agroforestry Trial
- Fertility Trial in Brassica
- Buckwheat as a Living Mulch in Sweet Potatoes
- Demonstration Trial: Mushroom as Understory Crop in Eggplant
Whole Farm Financial Project, 2013-2016

Introduction

In 2014 vegetable farmers asked Practical Farmers to collect and anonymously report whole farm financial data from themselves and their peers. Participating farms had a shared concern that attention to the bottom line of the local food movement was not receiving enough attention— too many aspiring farmers had unrealistic or naive expectations for profitability and a farming lifestyle. The results from the four years of this study are intended to be a resource for aspiring and beginning farmers to provide a realistic view of the costs and risks for new farms and how they can vary from year to year.

Though many new farmers start because of a love of growing vegetables and feeding communities, without a business plan, most farms are riskier than they may think. A business plan can help a farmer understand their situation and the steps needed to take to be financially sustainable. If a person is not ready to start a farm, they need to be ready to do the hard work to prepare.

This report cannot be used as a blueprint for farm financial success. This report is an everyday guide to financial success over years of financial numbers of their own crop. For beginning and aspiring farmers, this report can show them where to focus, what that means for their bottom line, and what level of revenue, and costs, may be reasonable to expect.

When deciding the methods for this project, several previous researchers have worked, and one of interest to other farmers and researchers. Farmer members have found innovation (2002) particularly informative for farm business comparisons. Several reports from Iowa State University were employed to evaluate farm business health (Chock 2013, Prat et al. 2014, Evans 2016) as well as reports from other universities (Brandon, 2008) Practical Farmers of Iowa (1995 & “Practical Farming By Rodgers et al. (2012).”

Data Collection and Reporting

This report provides a look at finances from eight farms from 2013-2016. Though more farmers participated through 2013 and 2014, only farms that provided at least three years of data, 2013, 2014, and 2015, were included in this study. The use of a whole farm financial data set from 2013 and 2014 is available on the Practical Farmers of Iowa website, practicalfarmers.org (2013, Kudles, 2014).

For this report, farmers were asked to complete a checklist of 167 tax forms that was modified to include a more detailed breakdown of farm income and expenses. The data was collected in several rounds with the following steps: income and expenses were reported in a 15-question survey (Appendix 1) to provide an overview of the farms. The data is primarily reported by transforming data into common financial ratios and per-acre values.

Table 3: Selected Farm Financials, 2013-2016

<table>
<thead>
<tr>
<th>Farm</th>
<th>Non-Farm Income</th>
<th>Farm Income</th>
<th>Total Income</th>
<th>Operating Expenses</th>
<th>Net Income</th>
</tr>
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<tbody>
<tr>
<td>Farm A</td>
<td>$50,000</td>
<td>$75,000</td>
<td>$125,000</td>
<td>$90,000</td>
<td>$35,000</td>
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<tr>
<td>Farm B</td>
<td>$60,000</td>
<td>$80,000</td>
<td>$140,000</td>
<td>$100,000</td>
<td>$40,000</td>
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<tr>
<td>Farm C</td>
<td>$70,000</td>
<td>$90,000</td>
<td>$160,000</td>
<td>$110,000</td>
<td>$50,000</td>
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</table>

Note: Income includes non-farm income, farm income, and total income. Operating expenses include only those directly related to farming operations. Net income is calculated as total income minus operating expenses.
Whole Farm Financial Project, 2013-2016

Local Food success?
Romanticized lifestyle?
Why does it work for them? (Does it??)
Evolving market – relevance of “old” models?
Whole Farm Financial Project, 2013-2016

What we asked:

Schedule F (income category modification)
Itemized Depreciation
Total Equity and Liabilities

10 Demographic Questions:

1. Acres in vegetable production
2. Total acres earning income
3. Number of years farming as a business
4. Goal percent of household income from farming
5. Current percent of household income from farming
6. Type of farm business (LLC, C-corporation, etc)
7. Estimated hours each owner worked on farm
8. Estimated owners draw
9. Are you meeting your expectations for farm profitability?
10. If you are not meeting your expectations for farm profitability, are you planning to make changes?
<table>
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<tr>
<th>Farm</th>
<th>Number of produce market types used</th>
<th>% produce sales in top 2 markets</th>
<th>% produce of total farm revenue</th>
<th>Gross Revenue Per Acre ($)</th>
<th>Labor expense % of total</th>
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<td>24,689</td>
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*Note: Values in parentheses indicate negative numbers.*
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2013-2016 Average
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<th>% produce sales in top 2 markets</th>
<th>% of total revenue</th>
<th>Rice Production Per Acre ($)</th>
<th>Labor expense % of total</th>
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2013-2016 Average
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<th>Number of produce market types used</th>
<th>% produce sales in top 2 markets</th>
<th>% produce of total farm revenue</th>
<th>Gross Revenue Per Acre ($)</th>
<th>Labor expense % of total</th>
<th>Supplies expense % of total</th>
<th>Depreciation expense % of total</th>
<th>Net Farm Profit per acre ($)</th>
<th>Net Income Ratio</th>
<th>Rate of Return on Farm Assets</th>
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2013-2016 Average
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<th>Net Income Ratio</th>
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Take-aways

• No single, correct business model. Success looks different to everyone.
• Expect and plan for year-to-year variation in financials.
• Be prepared to weather a lean year (or several).
• Define realistic expectations.
• Set financial goals and create a manageable process to track them.
• Track labor; know what you are paying yourself.
• Excellent teaching / comparison / conversation tool
• You need your own data.
Next Steps

• Talk to other farmers about what has helped them.
• Get Quickbooks, learn to use it.
• Educate yourself about farm finances.
  • *The Organic Farmers’ Business Handbook*, Richard Wiswall
  • *Fearless Farm Finances*, Padgham, Chase, Dietmann
  • PFIfarminar recordings, past annual conference sessions
• Set financial goals for your farm, and create a plan to track them.
data.practicalfarmers.org

Farmer to Farmer Vegetable Yield and Production Data.

Founded in 1985, our mission is to equip farmers to build resilient farms and communities.

Submit Data

EXPLORE
## All Crops

Browse all crop data

<table>
<thead>
<tr>
<th>Crop name</th>
<th>Variety</th>
<th>Area Planted (ft²)</th>
<th>Total Yield (lbs)</th>
<th>Transplanted</th>
<th>Seeded Date (Transplanted Date)</th>
<th>Spacing within rows (in.)</th>
<th>Spacing between rows (in.)</th>
<th>Infrastructure</th>
<th>Irrigation</th>
<th>Harvest Window</th>
<th>Mulch</th>
<th>State</th>
<th>Zip</th>
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</tbody>
</table>
Search Crops
Filter and export crop data

Crop Name:
- Any -

Variety:
- Any -

Harvest Date(s):
Select An Option

Advanced Search

Structure
Select some options or leave blank for all

State
Select Some Options

Zone
Select Some Options
Farmer to Farmer Vegetable Yield and Production Data.

Founded in 1985, our mission is to equip farmers to build resilient farms and communities.

Submit Data

EXPLORE
Welcome, PFI Research!

Here is your farm and associated crops

Edit My Account

PFI Research
info@practicalfarmers.org
50010
Public Profile
Farmer
1985

Crops: Asparagus, Beans, Fresh, Broccoli, Cabbage, Carrot, Cauliflower, Corn, Sweet, Cucumber, Eggplant, Garlic, Greens, Kale, Kohlrabi, Leek, Lettuce, Melon, Okra, Onion, Peas, Green, Peppers, Potato, Pumpkin, Radish, Shallot, Squash, Sweet Potato, Swiss Chard, Tomato, Turnip, Watermelon

Edit Farm

Crops (492)

Crop Name:
- Any -

Harvest Year:
2017 2016 2015 2014 2013 2012 All

Export All to CSV Add Crop
Add Crop!

Required Information

Crop: Select An Option
Variety: Select An Option

Area Planted: [Input Field] Ft²
Harvest Window: [Input Field]

Calculate by dimensions
Calculate acres to Ft²

Total Yield: [Input Field] lbs
Additional Information

State: Iowa
Zone: - Select -
Zip:
Direct Seeded: Transplanted
Seeded Date:
Spacing Within Rows: inches
Spacing Between Rows: inches
Farmer to Farmer Vegetable Yield and Production Data.

Founded in 1985, our mission is to equip farmers to build resilient farms and communities.

Submit Data

EXPLORE
Pesticide Drift

We are at home in our fields. Please don’t let pesticides drift.

Legal Resources for Pesticide Drift

The purpose of this document is to provide farmers and their families with legal resources for pesticide drift on their land. This page was created for educational purposes only, and is not an endorsement of any specific product or service.

Pesticide Action Network
912-294-5025
pesticideinfo.org

Pesticide Information Center
913-326-3595
pesticideinformation.org

Central Region Regional Operations Center
515-333-2000

Protect Your Right to Farm

Pesticide Drift Response Guide for Iowa’s Farmers and Rural Residents

What to Expect from the IDALS Pesticide Bureau

- The Pesticide Bureau at the Iowa Department of Agriculture and Land Stewardship (IDALS) regulates pesticide use across all of the state, including drift. The bureau ensures that pesticides are used safely and effectively, and that they do not drift onto neighboring properties.
- Pesticide Drift is the movement of a pesticide through the air at the time of application or soon thereafter, to any other place that is not intended for application. Avoiding ALL off-target movements is the responsibility of the applicator.

After the IDALS Pesticide Bureau Investigation

The Pesticide Bureau may try to fix a problem quickly, especially if the delay poses a risk to human health. The bureau will try to resolve any chemical analysis of samples to provide results within two weeks.

Video Series: Don’t Let Pesticides Drift

Video Series: Don’t Let Pesticides Drift

Legal Resources for Pesticide Drift

- **Protect Your Right to Farm**: Pesticide Drift Response Guide for Iowa’s Farmers and Rural Residents

- **Pesticide Action Network**: 912-294-5025, pesticideinfo.org

- **Pesticide Information Center**: 913-326-3595, pesticideinformation.org

- **Central Region Regional Operations Center**: 515-333-2000

- **We are at home in our fields. Please don’t let pesticides drift.**
Pesticide Drift Cases in Iowa

More than 90% of land in the state of Iowa is dedicated to agriculture. Nearly 77% of this land was treated with pesticides in 2012 (USDA). In Iowa, the pesticides that are most commonly involved in drift events include the herbicides 2,4-D, acetochlor, atrazine, glyphosate, and dicamba; the insecticides chlorpyrifos, pyrethroids (lambda cyhalothrin and bifenthrin); and the fungicides pyraclostrobin and propiconazole.

This map depicts all pesticide drift cases reported to the Pesticide Bureau of the Iowa Department of Agricultural and Land Stewardship for enforcement purposes. Data were extracted from narrative case reports from 2010-2015 for generating maps. In these six years, the Pesticide Bureau received 471 reported drift cases.

Note: Not all reported drift cases were confirmed by investigators. Twenty-eight percent of cases did not have enough evidence to confirm that drift had occurred.
Opportunities for Growth?

- Community and "go-to" organization for vegetable farmers
- Diversity farmer experience and enterprise
- Nuance of farmer knowledge
- Commercial apple orchards
- Larger-scale vegetable growers
- Next generation of field crop farmers
- Cut flowers
- Profitable, integrated, perennial systems and businesses
Questions?

- PFI’s farmer-led model
- Horticulture events / programming
- Cooperators’ Program / on-farm research
- Whole Farm Financial Project
- Farmer to Farmer Vegetable Yield and Production Data (data.practicalfarmers.org)
- Pesticide drift
- Opportunities for growth and engagement
- Anything else?