




California Rice Pesticide Needs and MRL Engagement



Roberta Firoved, Industry Affairs Manager
California Rice Commission
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Presentation Outline

- Background on the CRC
- What is CalRice?
- Pesticide MRLs & Residue Testing
- Pests & Pesticides for CalRice
- Future Collaboration



Where did it start?

Background on the CRC



California Rice Commission



Statutory organization – as a marketing order

- CDFA Food & Ag Code
- Not a state agency
 - Quasi-state
- State agencies defer program management
 - Rice Pesticide Program for thiobencarb

Represent all rice growers (producers) and mills (handlers)

- Different from an association
- Membership is mandatory
- Based off an assessment ¢/cwt

Strategic planning defines programs

- Regulatory
 - Air
 - Pesticides
 - Water quality
- Conservation
 - Wildlife and fish
- Public education

Counties Farmed to Rice

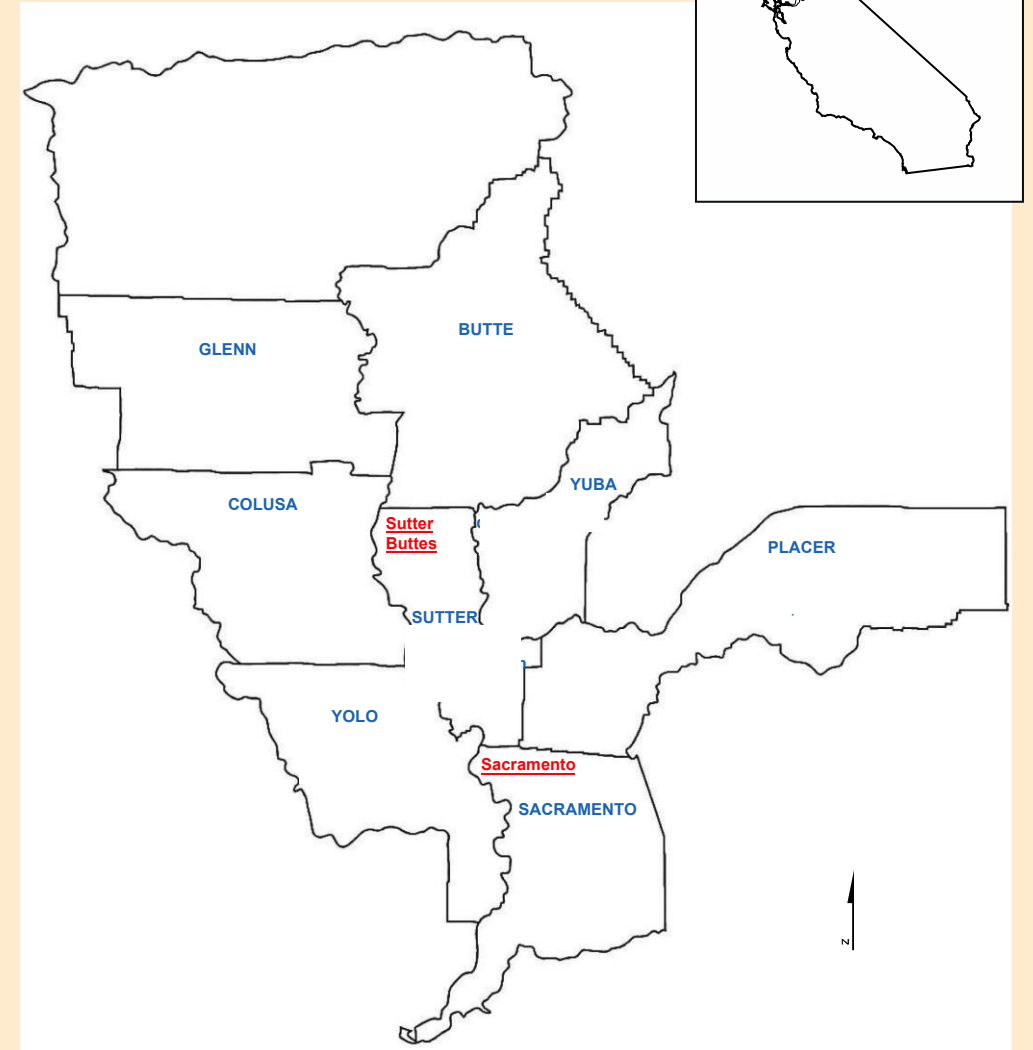
99.9% of rice is farmed in:

- Butte
- Colusa
- Glenn
- Placer
- Sacramento
- Sutter
- Yolo
- Yuba

Remaining <1%

- Fresno
- Merced
- San Joaquin
- Stanislaus

Counties Planted to Rice in the Sacramento Valley



What is CalRice?

California Rice



More than a Century of History

1912 to 2012
Centennial
Celebration



California Rice an industry changes...



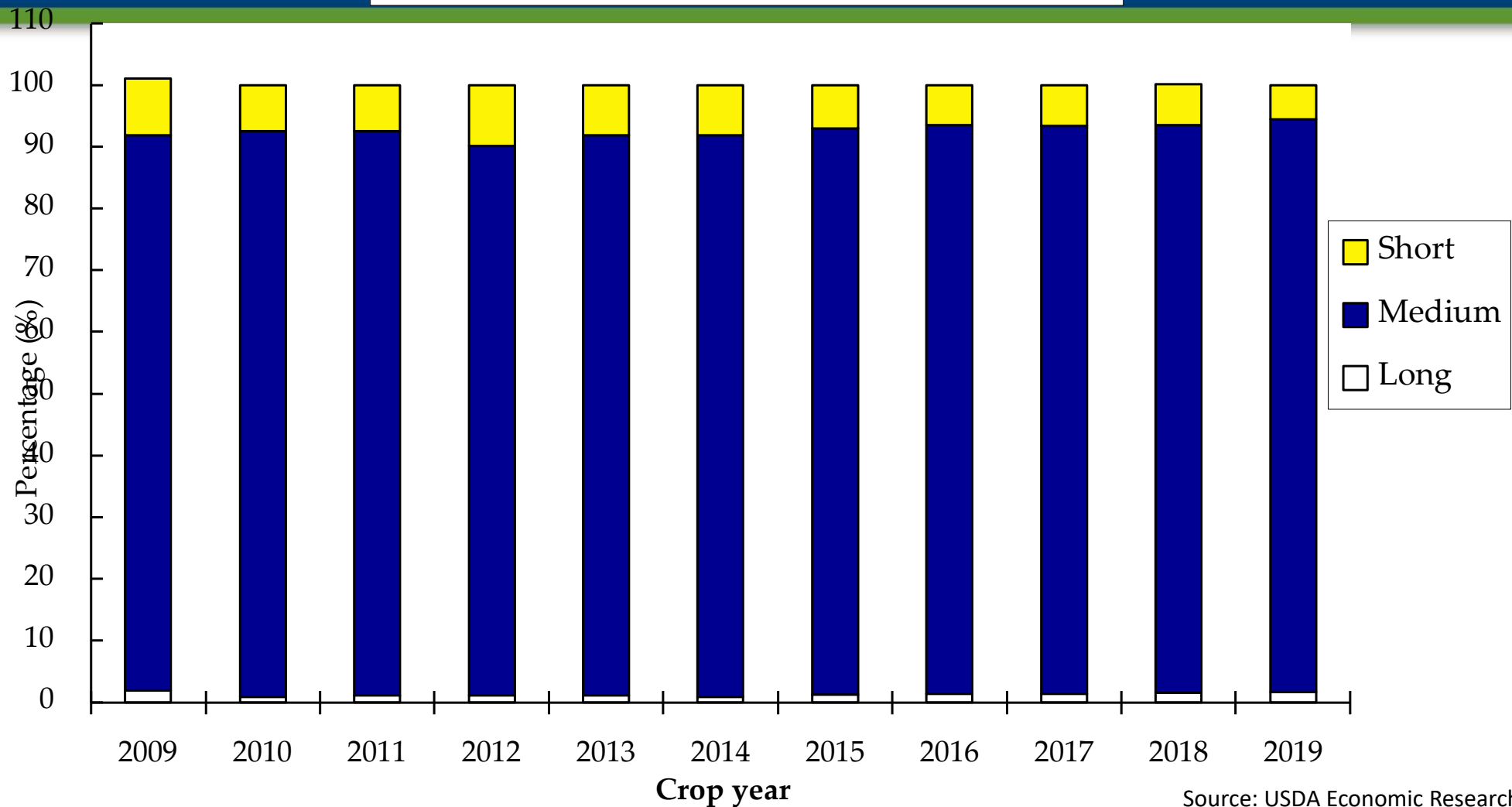


California Rice Industry

- Temperate medium grain 100+ years in California
- 525,000 Acres - average
- Premium Quality Medium and Short-grain Rice
 - Some long-grain
- Used in Many Specialty Cuisines
 - Sushi
 - Risotto
 - Paella
- All sushi rice in U.S. comes from the Sacramento Valley

California Rice Production By Type

2009 - 2019



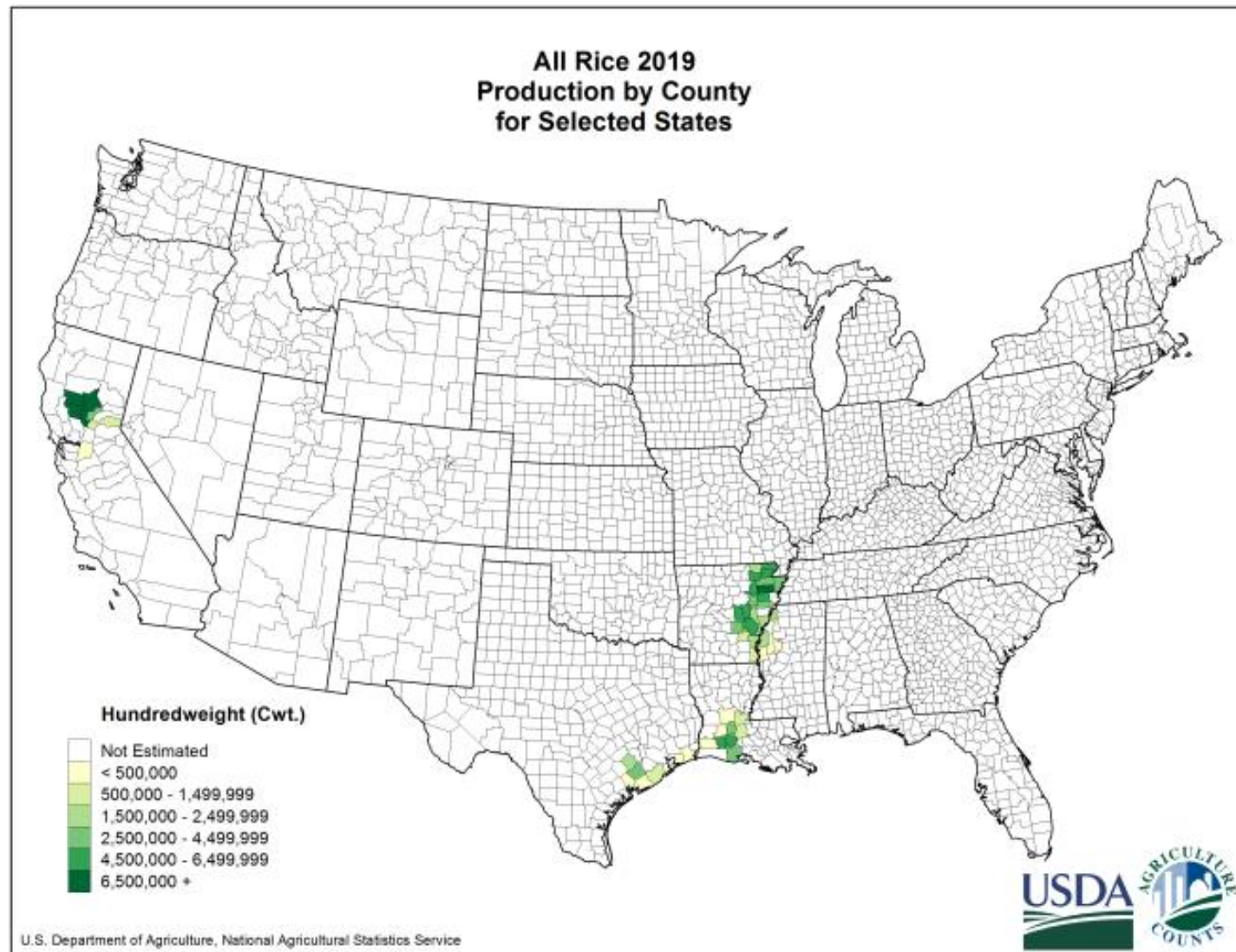


CA Rice Industry Statistics

- \$5 Billion Industry
- Estimated 25,000 jobs
- Top 20 of All Crops / Top 6 of Ag Export Value
- 2 Million Tons Annually
- Approx. 45% Exported
 - Japan: 25%
 - S. Korea, Taiwan, Turkey: 15-20%
- Average Cost of Production:
 - Over \$1837/Acre
 - Substantially higher than cost in southern rice states

Source: CDFA 2019

USA Rice Production

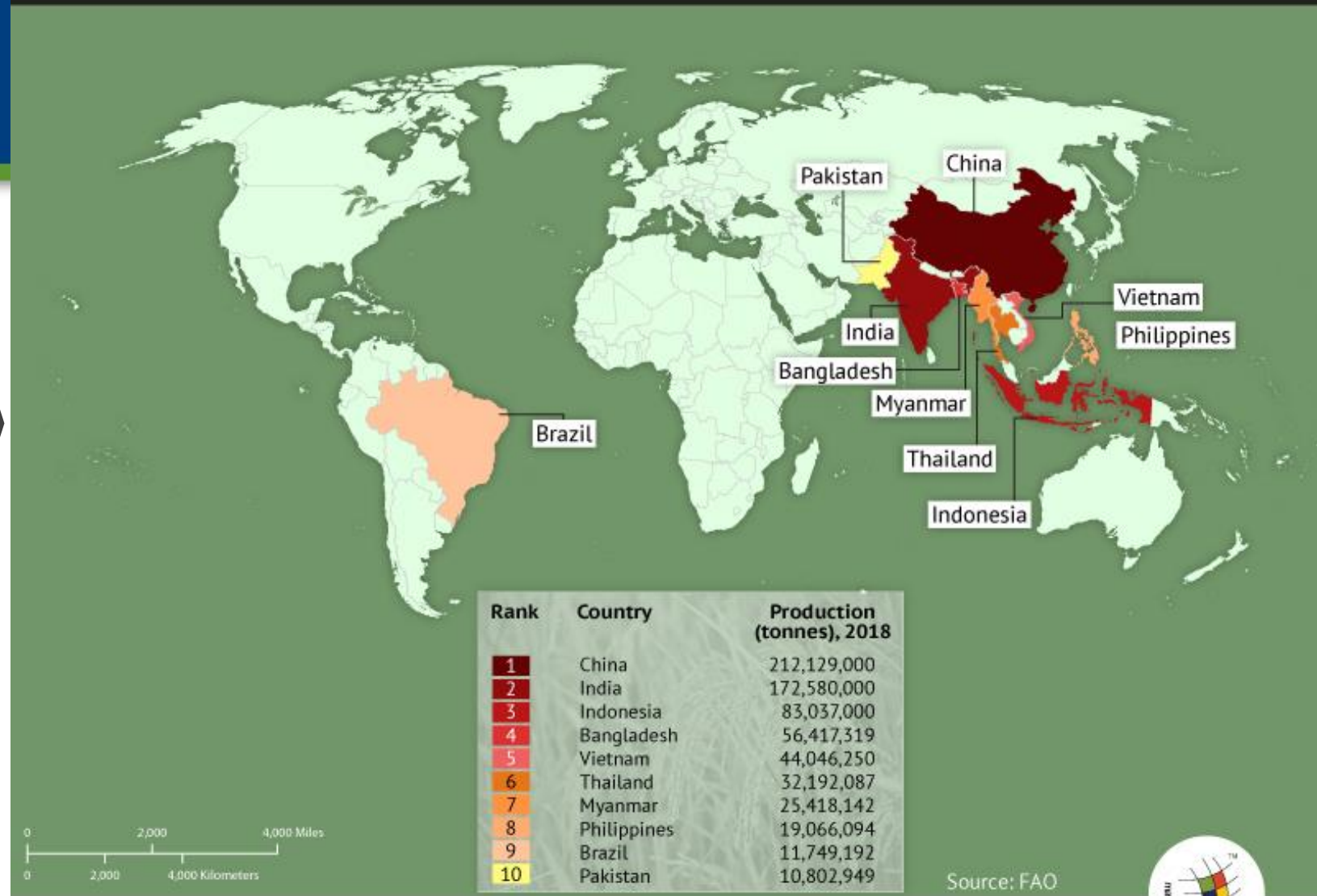


World Rice Production

- Staple food for 3.5 billion people
- 20% of calories consumed worldwide
- Cultivated in 100+ countries

Source: LSU AgCenter

TOP 10 RICE PRODUCING COUNTRIES IN THE WORLD



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Pesticide MRLs and Residue Testing



USA Pesticide Residue Inspection



U.S. Department of Agriculture's (USDA) Agricultural Marketing Service (AMS)

- AMS Monitoring Programs Division (MPD) directs and oversees the Pesticide Data Program (PDP)
 - Used by Federal agencies, academic institutions, food producers, food processors, chemical manufacturers, environmental interest groups, and food safety organizations
 - Residue issues for agriculture practices for domestic and international trade
 - Promoted export of U.S. commodities in global market
 - Works with EPA to monitor pesticide residue levels in food

Source: www.ams.usda.gov/pdp

U. S. Food and Drug Administration's (FDA) Pesticide Residue Monitoring Program

- Summarizes FDA program results of levels of pesticide residues in U.S. Food supply below established safety standards
 - Reports from Fiscal Years published in the Journal of the Association of Official Analytical Chemists/ Journal of AOAC International
 - Three statistical summary files
 - Product
 - Chemical
 - Country
 - Six other reference files

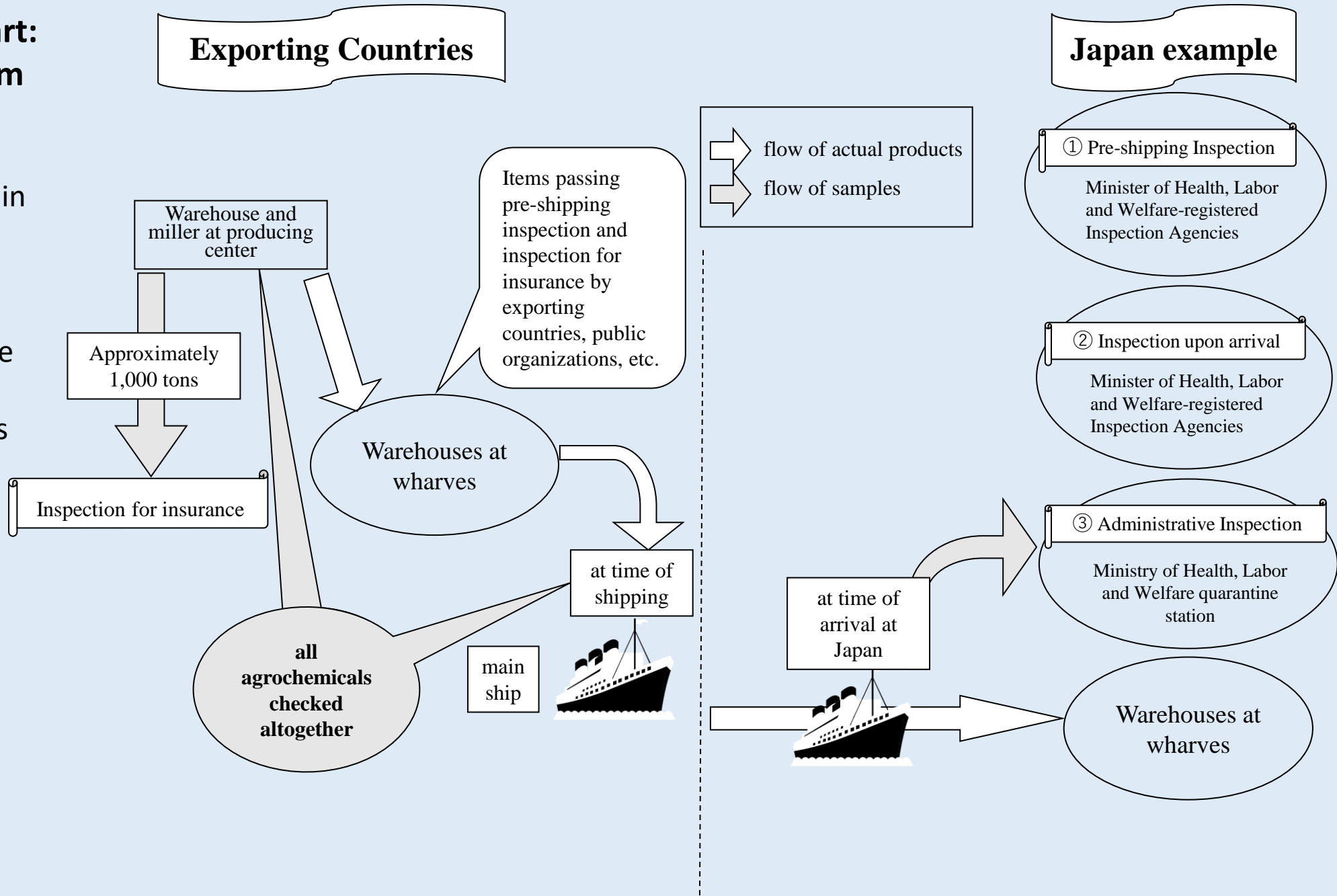
Source: <https://www.fda.gov/food/pesticides/>

It is about rice on
the ship leaving the
California port



Simplified flow chart: Rice shipments from California to Japan

- Early engagement in the Japan Positive List System
- MRL specific to rice
- All California rice is inspected for approximately 600 chemicals
- Pre-shipment samples provide inspection for insurance in the tendering system



Pests & Pesticides for California Rice



Management Practices for Weeds



Primary pest control for CA rice: weeds

Manage weeds:

Watergrass (early & late), barnyardgrass, sedges (smallflower umbrellasedge & ricefield bulrush), broadleaf-like (ducksalad, arrowhead, redstem, waterplaintain), red rice (weedy rice) and sprangletop

Herbicides:

2,4-D, bensulfuron-methyl, benzobicyclon, bispyribac-sodium, carfentrazone-ethyl, clomazone, cyhalofop-butyl, glyphosate, halosulfuron-methyl, orthosulfamuron, paraquat, pendimethalin, penoxsulam, propanil, thiobencarb, triclopyr-TEA

Classes/Modes of Herbicides



Synthetic auxins: Phenoxy-carboxylic-acid; 2,4-D

ACCase: Aryloxyphenoxy-propionate 'FOPs': Cyhalofop-butyl

ALS-inhibitor: (sulfonyleurea) Bensulfuron-methyl; Halosulfuron-methyl; Imazosulfuron, Orthosulfamuron;
(pyrimidinyl(thio) benzoate) Bispyribac-sodium; (triazolopyrimidine) Penoxsulam

HPPD-inhibitor: Benzobicyclon

Triazoline: Carfentrazone-ethyl

Isoxazolidinone: Clomazone

Dinitroaniline: Pendimethalin

Amide: Propanil

Thiocarbamate: Thiobencarb

Pyridine carboxylic acid: Triclopyr TEA

15 listed/10 options

Management Practices for Other Pests



Pest control for CA rice: disease and insects are minor use

Manage diseases:

Rice blast, aggregate sheath spot, stem rot, Bakanae

Fungicides:


Azoxystrobin, propiconazole, trifloxystrobin, sodium hypochlorite (seed soak for Bakanae only)

Manage insects:

Rice water weevil, tadpole shrimp, seed midge, crayfish, armyworm

Insecticides:

Bacillus thuringiensis (Bt), carbaryl, lambda-cyhalothrin, clothianidin, (s) or zeta-cypermethrin, diflubenzuron, malathion, methoxyfenozide (section 18)



Management Practices for Algae

- Five types of algae:
 - Nostoc “black algae” most prevalent
 - Green algae (Sphaeroplea, Tribonema, Ankistrodesmus, Tetraspora) and diatoms (Navicula) early in May to blue-green algae (Nostoc, with Anabaena and Phormidium) in late May, early June
- Algaecides:
 - Copper sulfate pentahydrate
 - Sodium carbonate peroxyhydrate

Areas of involvement to increase pest management awareness

Future Collaboration



Build relationships through credibility



Government Agencies

- Department of Pesticide Regulation
- County Agricultural Commissioners
- U.S. EPA
- State Water Board
- Region 5 Water Board
- Air Resources Board
- California Department of Food & Agriculture

Increasing Collaboration

- Stakeholders
- Registrants
- Consultants
- Other Commodities
- Other Coalitions
- University
- UC Cooperative Extension
- Conservation Groups
- Environmental Justice

Establish yourself as a reliable source of information



How to
build
credibility

Build trust

- Relationships
- Actions
- Consistency
- Messaging

How to build trust

- Often requires independence
- Message is always same
- Don't use "What I do on my farm"
 - Use an industry model

Key Events in Typical Rice Year



Critical things to remember



The CRC is different from other commodity groups

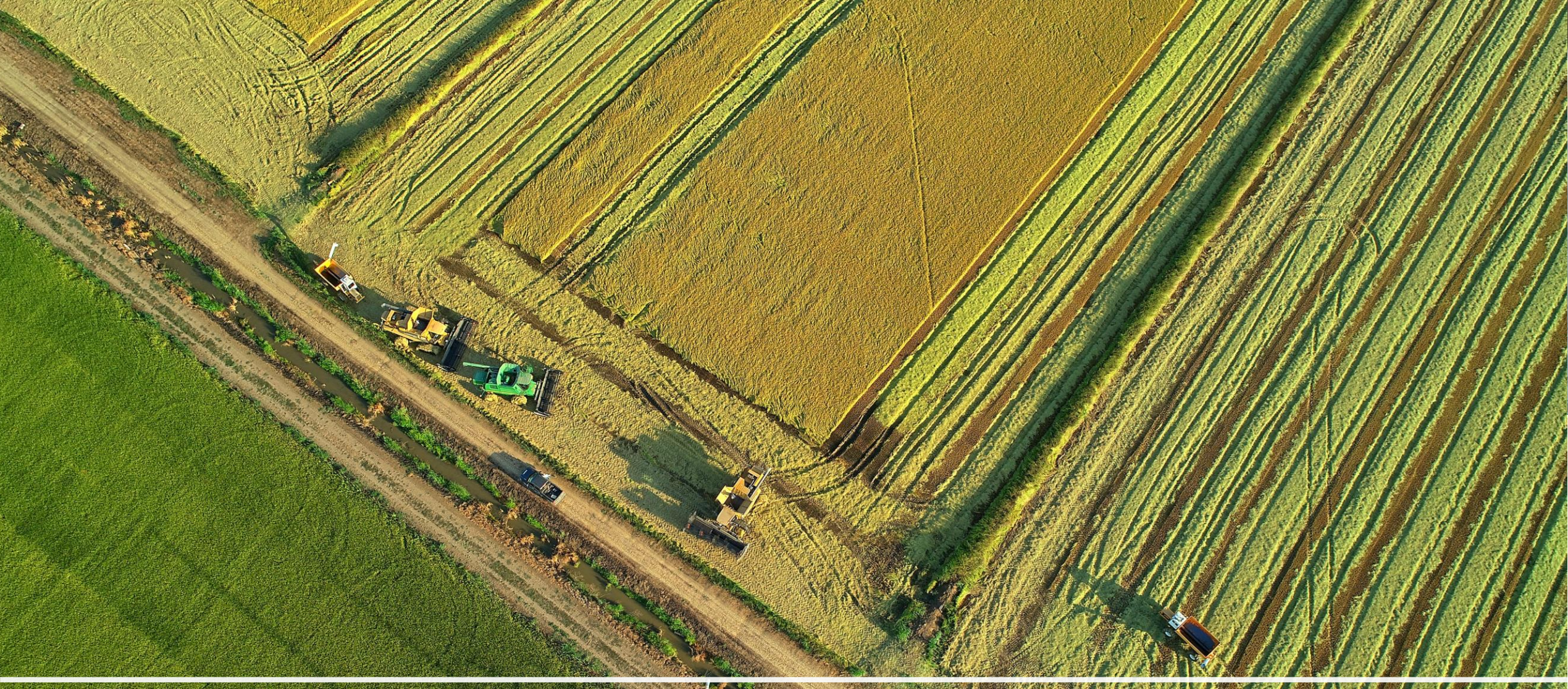
California rice is grown in a basin

Future ag. trends in water quality will drive pesticide regulation

Pesticide regulation well established in the state

Stewardship is critical in maintaining pesticides

Collaboration is essential in registration, reregistration and stewardship of pesticides



Thank You/Questions?

