

Potato Agronomy

Irrigated Crops Update January 16, 2018 Dr. Michele Konschuh Alberta Agriculture and Forestry



Potato Agronomy and BMP's

- Best Management Practices
- Or realistically "Better Management Practices"
 - Recommended methods, structures or practices designed to maximize economic use of resources while minimizing environmental disturbances
 - In many areas, voluntary adoption of BMP's by producers may help improve public perception of the industry and possibly reduce the need for regulation and mandatory controls.
 - Many BMP's are already standard practices, known to be both environmentally and economically beneficial



Irrigation

- Providing optimal irrigation can affect yield more than any treatments being evaluated.
- ACIS (Alberta Climate Information Service) https://agriculture.alberta.ca/acis/
- AIMM (Alberta Irrigation Management Model) free decision support software
- Various equipment and approaches
 - Variable rate pivots, sub-surface drip, PDMI?
 - Replacement ET, soil moisture sensors, decision support software





Fertility

- Strategies that match crop N needs with applications can improve N-use efficiency
- Split or periodic N application procedures have become common in many potato-producing regions.
- A recent trial (2013-2017) verified that there are several winning approaches to N fertilization of Russet Burbank. The use of split applications, slow release fertilizers and fertigation produced yield and quality required for processing





Plant Density

Bed Planting

 Some varieties responded well to higher plant density; yielding 25 to 30% higher which more than compensated for higher seed costs

Row Spacing

 Tighter row spacing essentially increases plant density without increasing the soil handling; requires equipment changes in production system

In-row spacing

Optimizing in-row spacing has
been valuable for fresh market,
especially for creamer sized potatoes
New varieties do not always
respond like the familiar varieties





Variety Development

Need for replacement varieties

 Growing environments vary significantly between potato production regions in Canada and the U.S. Regional data is essential when selecting varieties appropriate for our climate, our customers and industry stakeholders.



Variety specific agronomics

 Agronomic evaluations allow us to provide growers with relevant information to mitigate the risks associated with producing new varieties.



IPM – Integrated Pest Management

- Scouting
- Economic thresholds
- Resistance Management
- Crop rotation
- Green manuring
- Biosecurity
- Decision Support Software