

Survey of Canola Growers: Practices, Inputs and Production

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AAFC - Lethbridge Research Centre
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Our Vision

Driving innovation and ingenuity
to build a world leading agricultural and food economy
for the benefit of all Canadians.

Our Mission

Agriculture and Agri-Food Canada provides leadership
in the growth and development of a competitive, innovative
and sustainable Canadian agriculture and agri-food sector.


Overview

- Survey of canola growers - purpose
- What do growers do?
- Factors influencing canola yield
- Factors influencing decisions
- Summary

Canola Survey

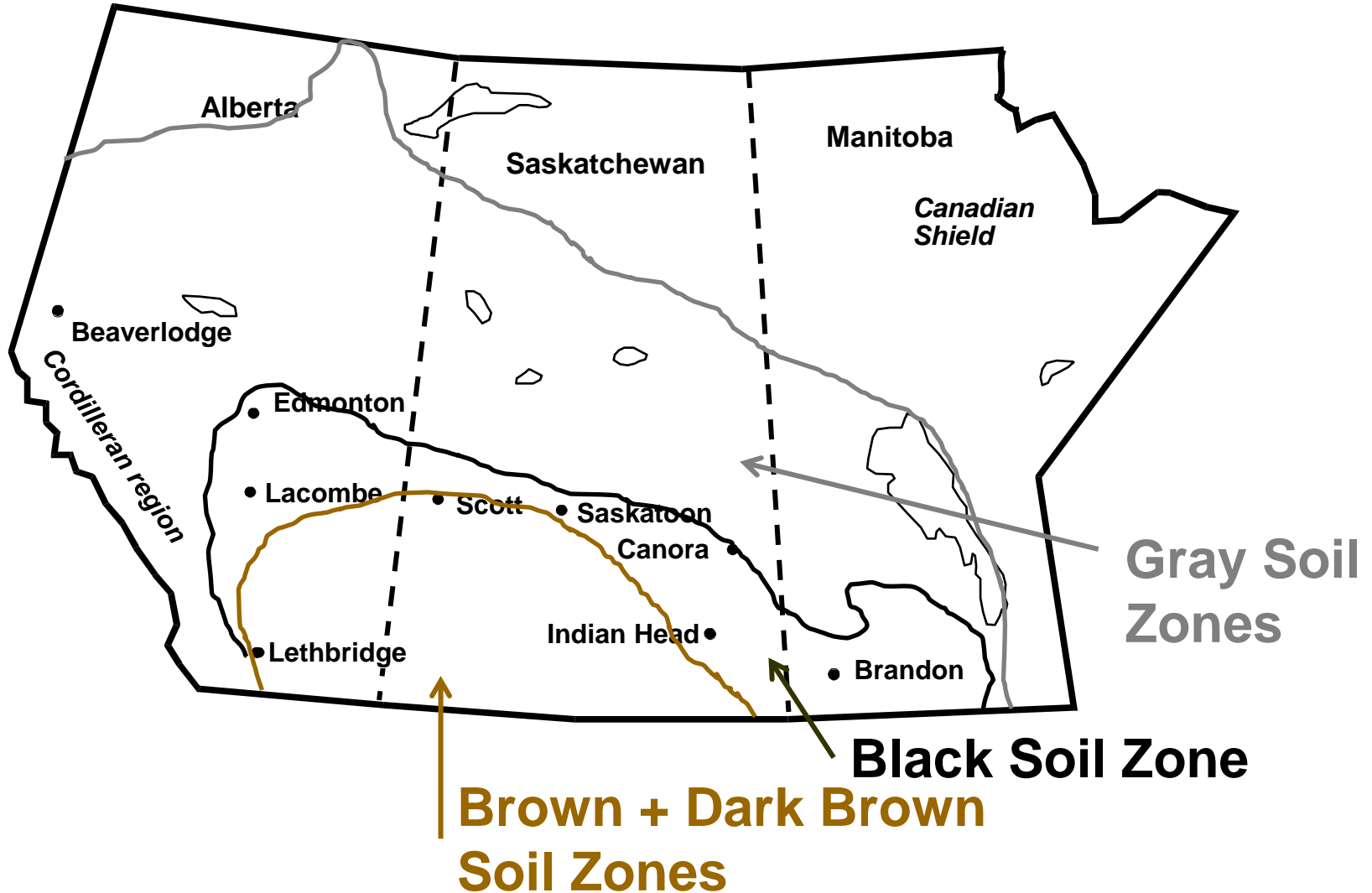
- To better understand canola management at the farm level
- To determine factors that contribute to canola yield
- To determine where extension efforts would best be applied to increase producer returns and canola production

Canola Survey

- Collaboration with AAFC and the Canola Council of Canada The logo for the Canola Council of Canada, featuring a stylized yellow and black flower icon to the left of the text "canolacouncil" in a bold, sans-serif font.
- The 2011 crop
- Nearly 1000 growers completed the survey
- Questions on farm structure (size, crops, livestock), production practices (techniques, timing, decisions), sustainability and trends (input use, prices), and grower characteristics

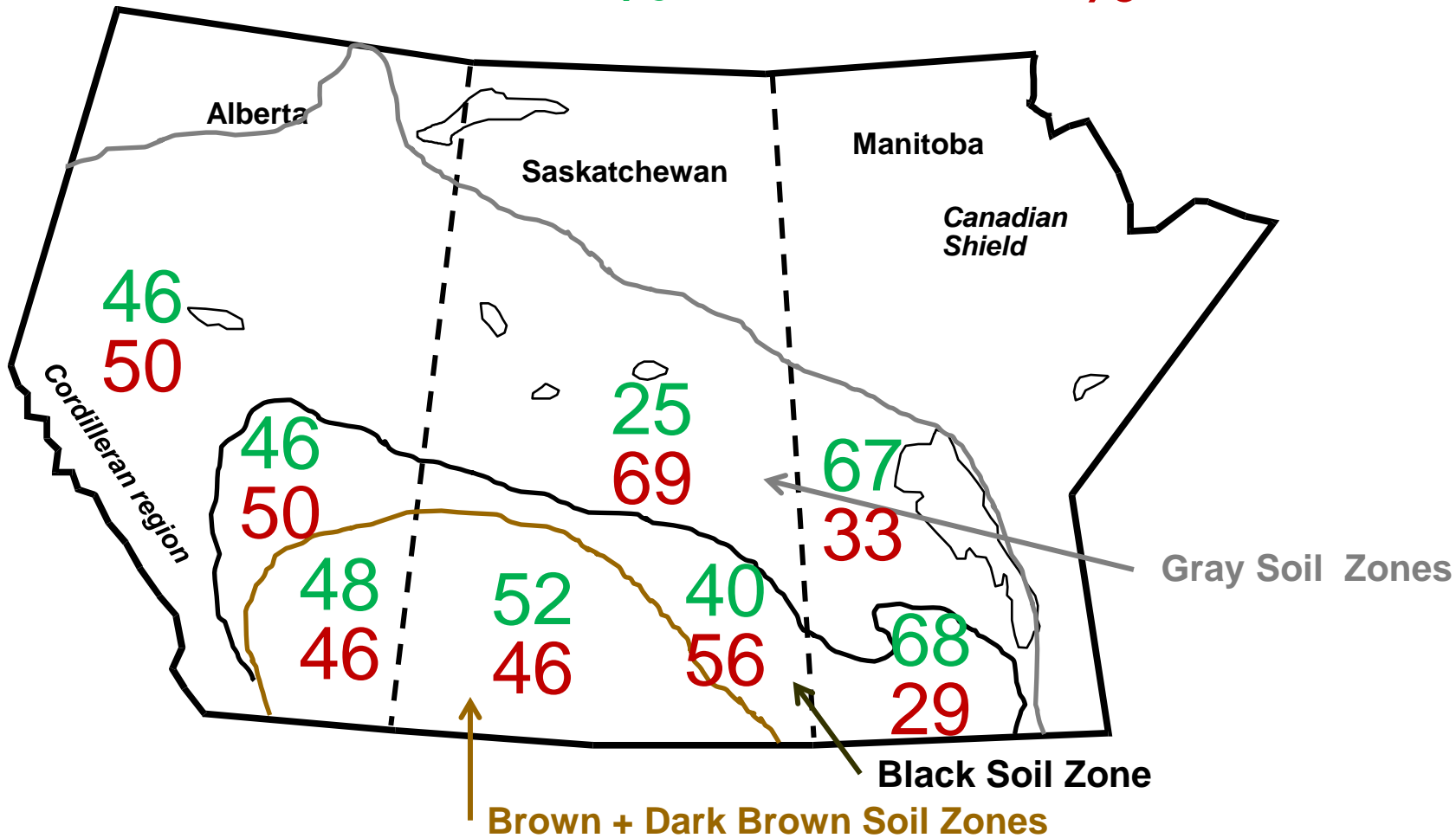
What Do Growers Do?

Overview of Survey Results



Hybrid: Liberty or Round-up

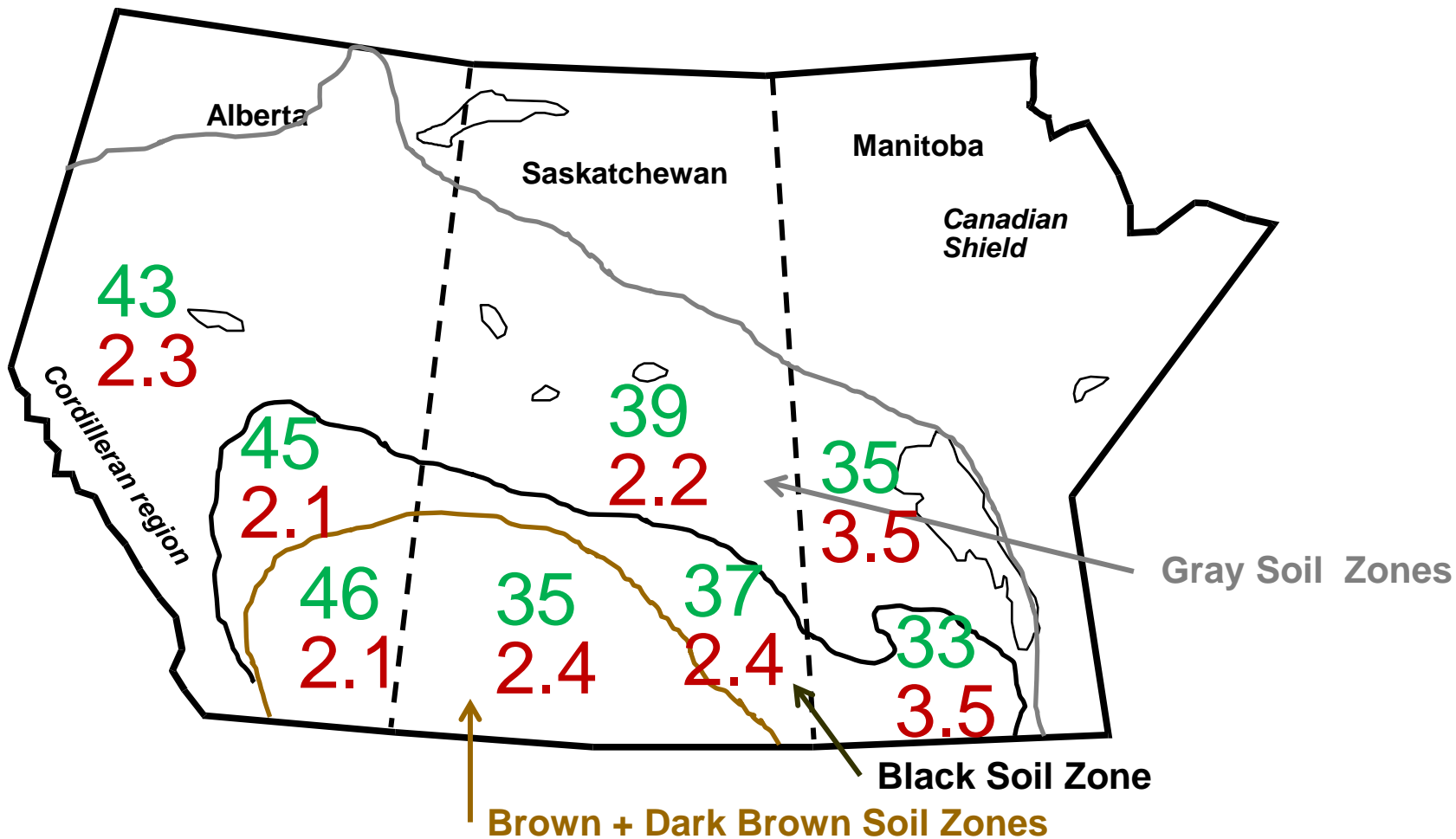
% %



Yield and N-efficiency

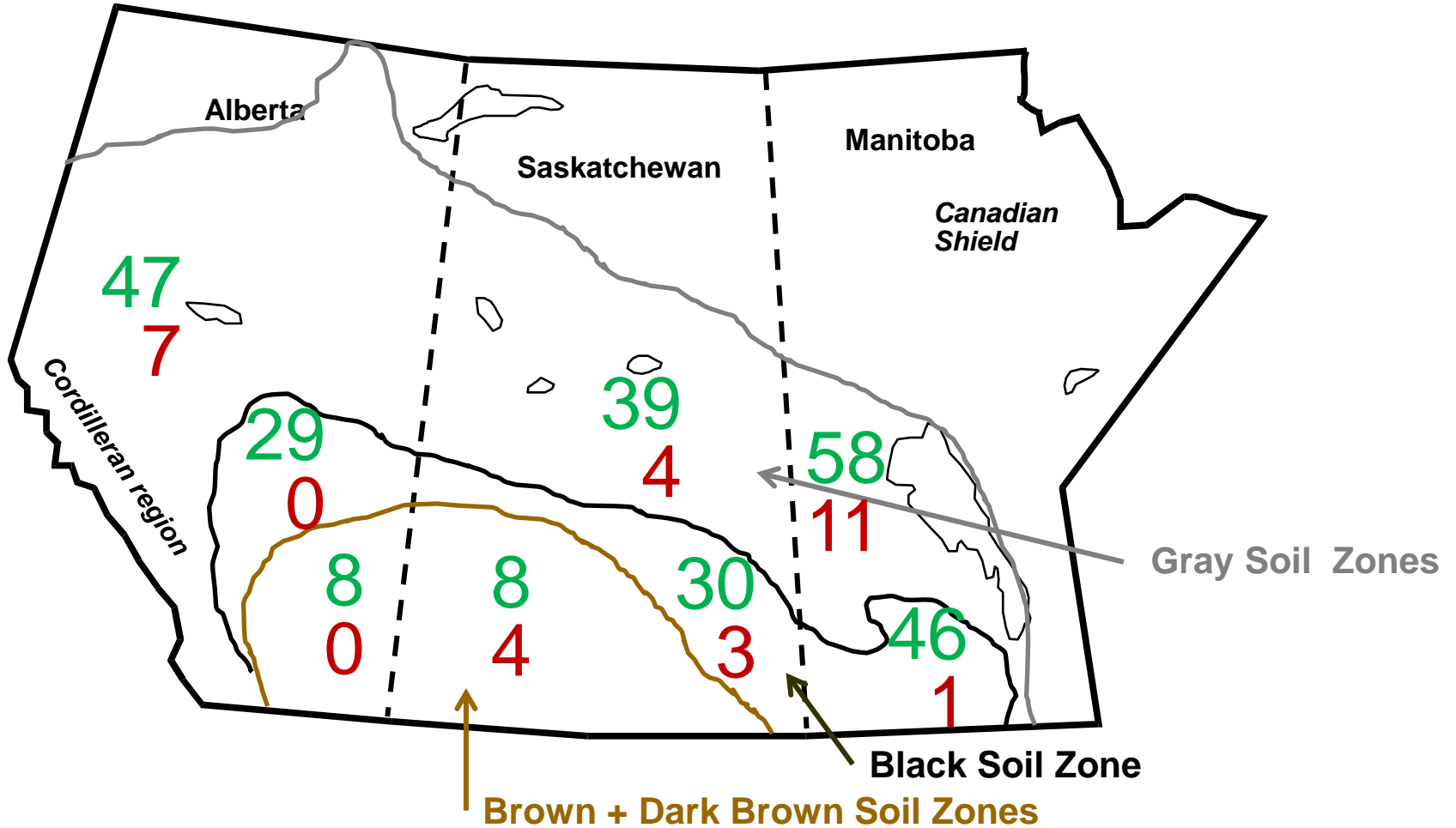
bu/ac

lb N/bu



Canola on Same Field in 2009 or 2010

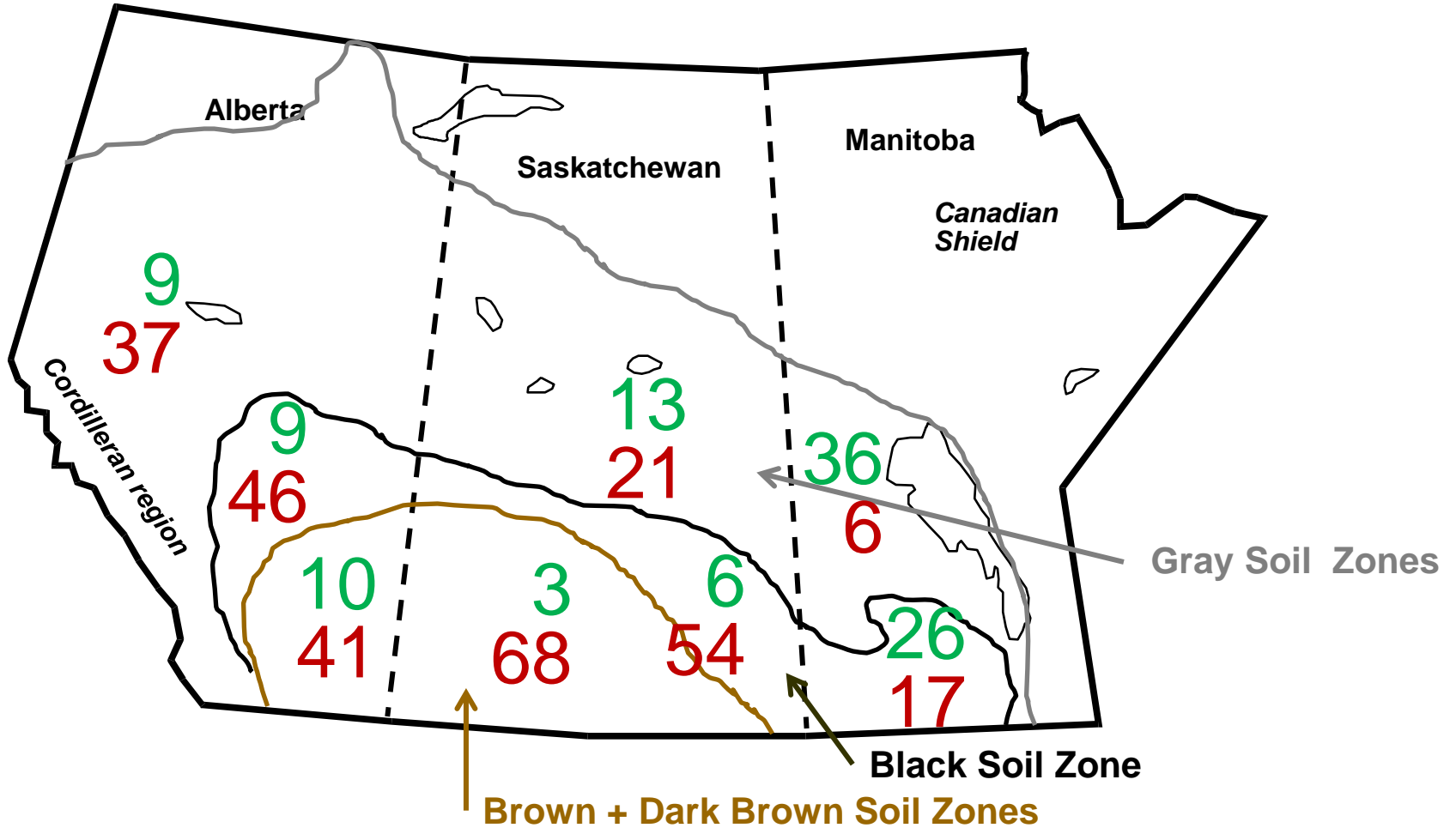
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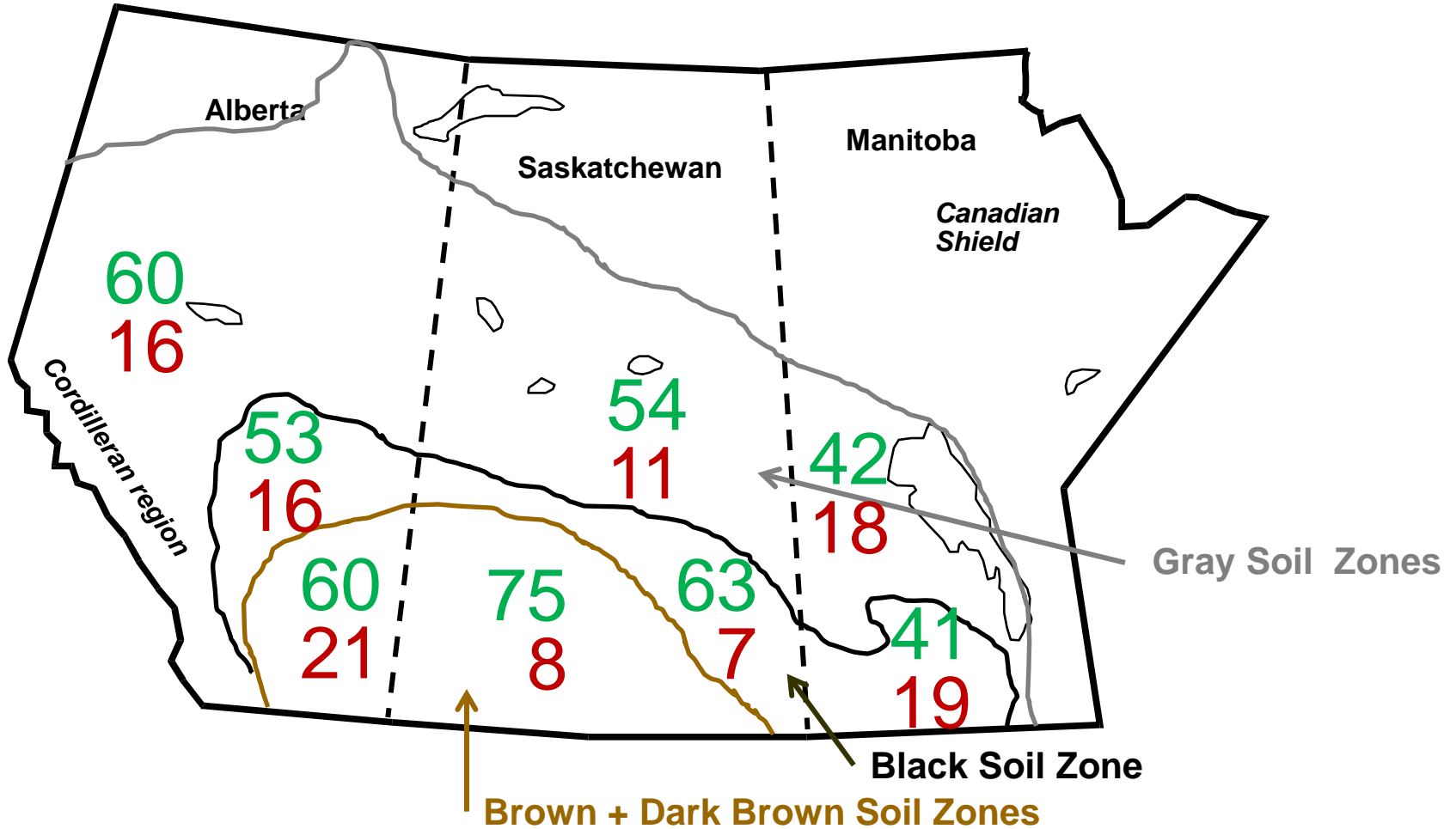
Conventional or no-till

%

%

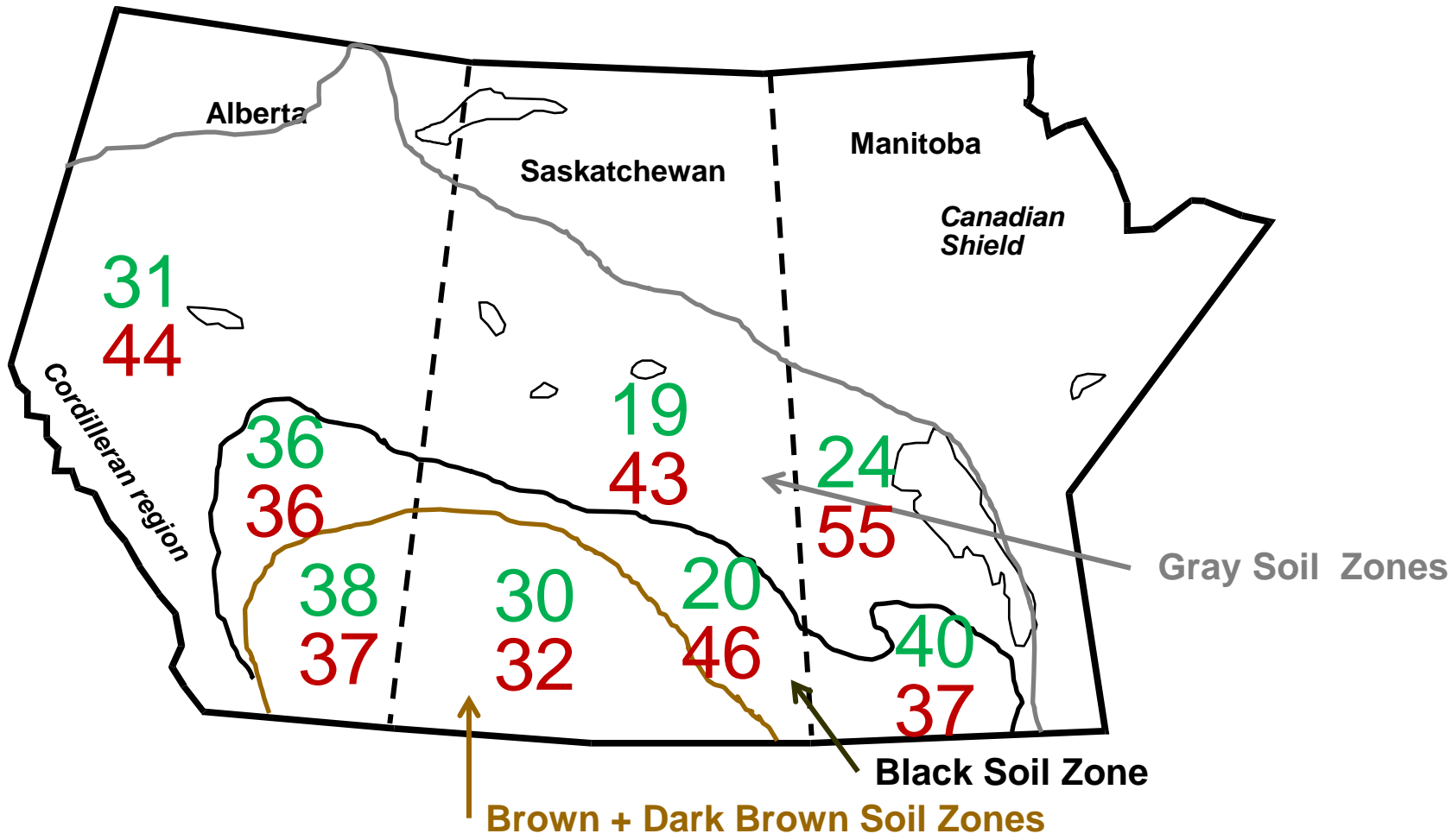


Seed with **air-drill(shank)** or **drill** % %



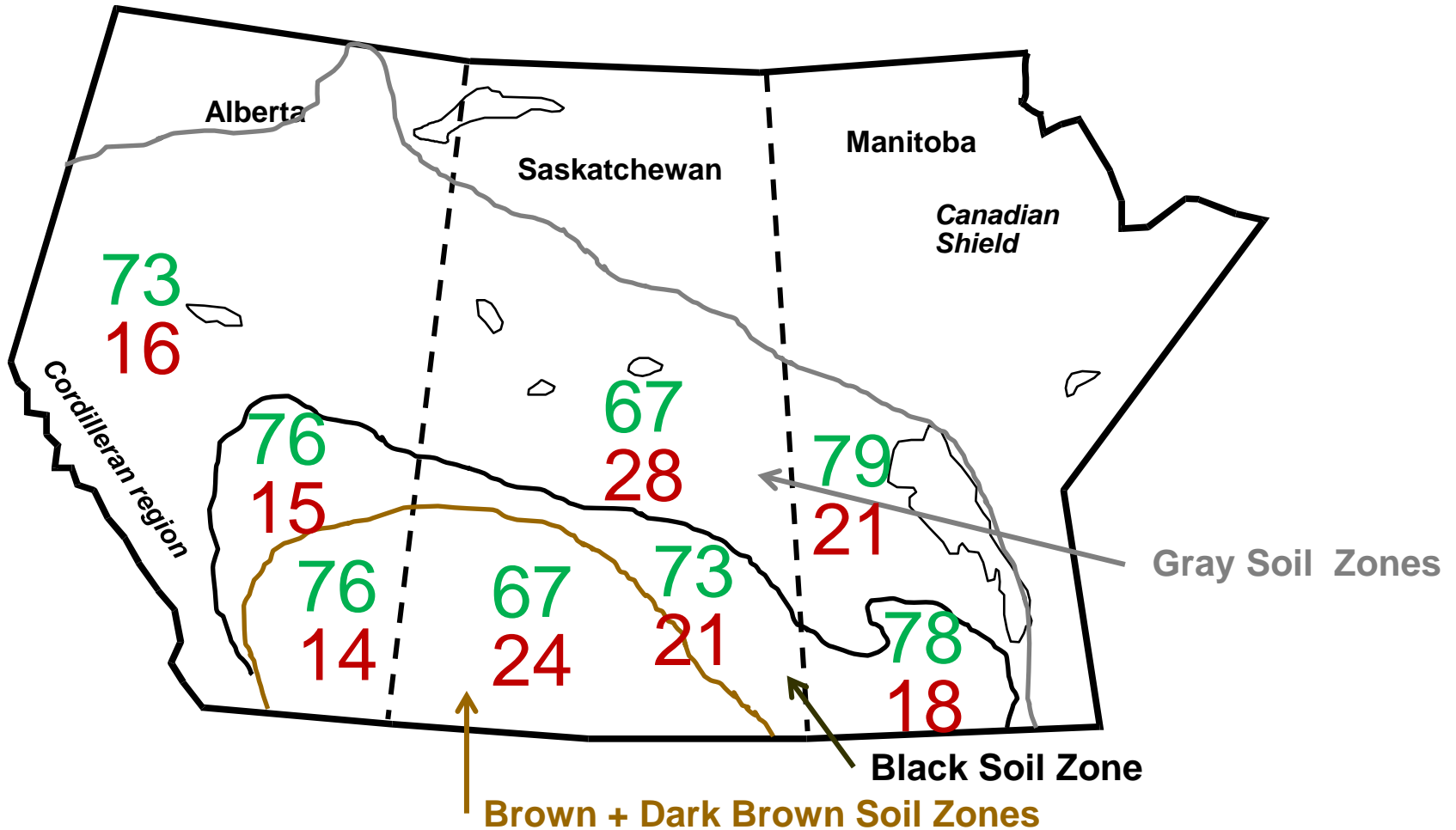
Fertilizer: soil test or experience

%
%



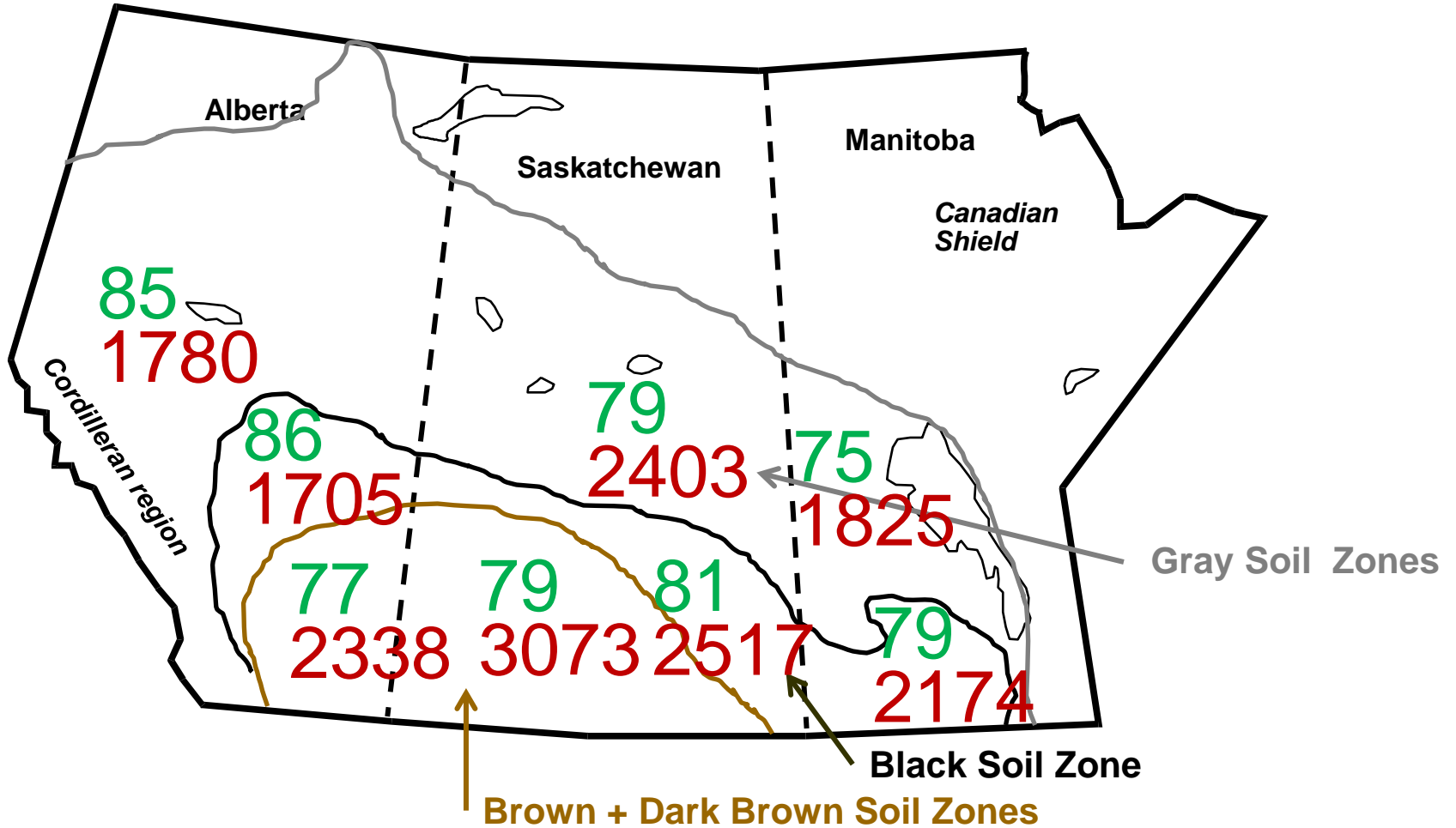
Swath: seed or pod + field

% %



Age and Farm size

% > 45 **acres**



Factors Influencing Yield

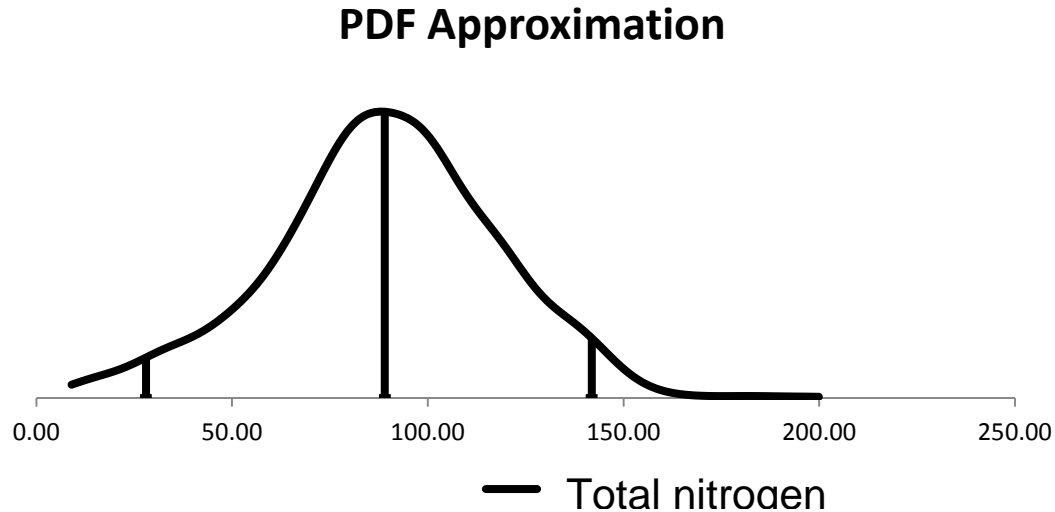
Canola Yield Factors

- Environment (precipitation, growing conditions, moisture, heat, soil problems, region/soil zone)
- Inputs applied (fertilizer, irrigation, herbicides, pesticides, fungicides)
- Decisions made (canola type/hybrid, seeding date, fertilizer requirement, seed calibration, swathing criteria)

Canola Yield Factors

- Factors that could influence yield need to be considered together, NOT individually
 - Most factors are inter-related, therefore, the need for multivariate analysis
- Some factors might not show a relationship, when one is expected.
 - With survey data there is very often similar levels of inputs or decisions, so it is difficult to determine a yield relationship

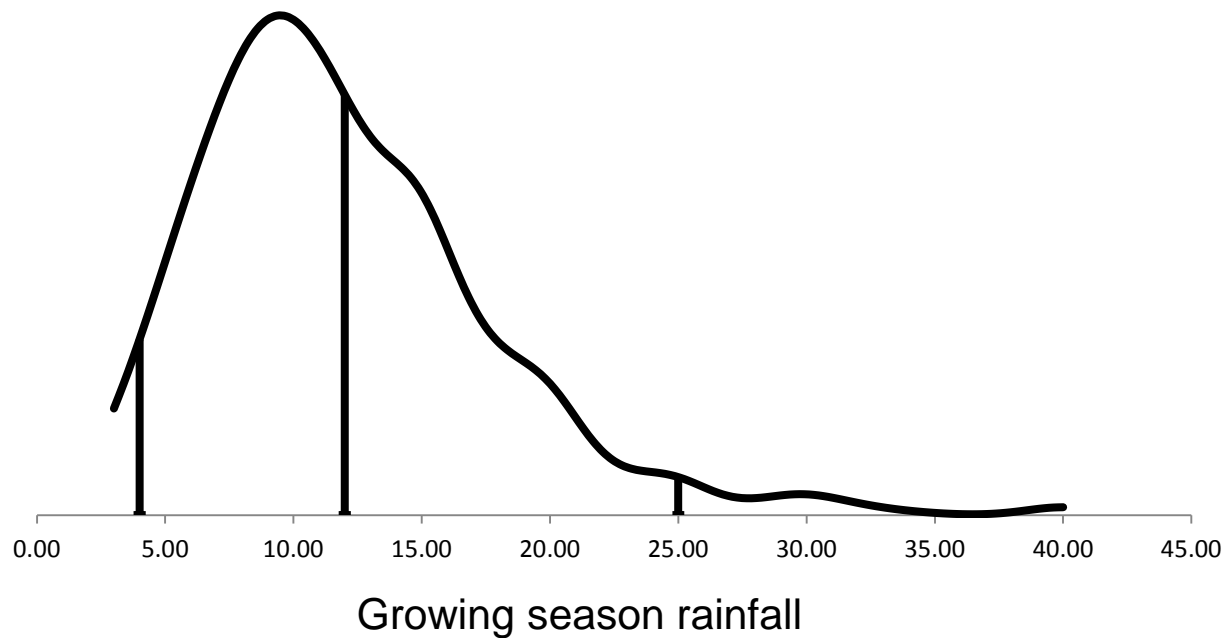
N application



- Over 50% of producers applied from 75 to 105 lb/ac of actual N
- Some extremes (low- not report all?) high (reported product?)

Rainfall

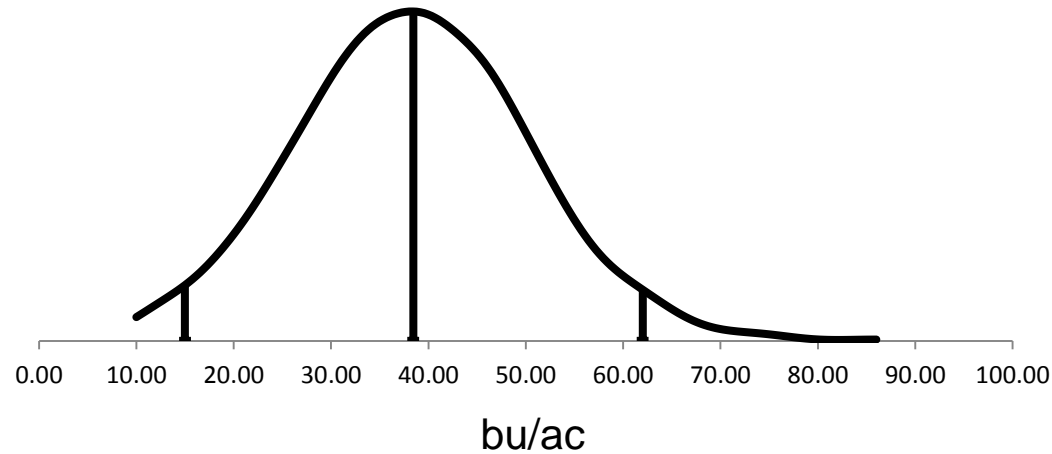
PDF Approximation



Rain: 3" to 40": 10% > 20"; 25% > 15"

Canola Yields from the Survey

PDF Approximation



- Average yield 38 bu/ac
- Less than 10 bu/ac excluded

Impact of Selected Factors on Yield

Factor	Impact	Units
Nitrogen	0.05	bu/lb
Calibrate seeder	1.2	bu/ac
Specialty oil	-2.5	bu/ac
Fertilizer – cost	-4.4	bu/ac
Fertilizer – soil test	2.1	bu/ac
Liberty Link	3.7	bu/ac
Swath – green seed	-5.0	bu/ac
Swath – field/plant colour	-4.1	bu/ac
Seed late (May 22)	-3.6	bu/ac

Impact of Selected Factors on Yield

Factor	Impact	Units
Precipitation	-0.13	bu/in
Irrigation	10.9	bu/ac
Brown soil zone	-2.5	bu/ac
Salinity	-1.7	bu/ac
Adverse conditions	-2.4	bu/ac
Moisture – Fair	-3.8	bu/ac
Moisture – Poor	-11.9	bu/ac
Flowering temperature – Fair	-6.1	bu/ac
Flowering temperature - Poor	-14.1	bu/ac



Factors Influencing Decisions

Decision Making Influences

- Tillage system (no-till)
- Fertilizer determination (soil test)
- Swathing criteria (seed colour)
- Fungicide application (environment)
- Record keeping (physical records)

Tillage

- Factors that were associated with growers who use no-till:
 - Larger sized farms
 - Growers with college or university education
 - Growers in the Brown and Dark Brown soil zones

Fertilizer

- Growers more likely to use soil tests to determine fertilizer rate:
 - Larger farms
 - Growers with university education
 - Growers in the Black soil zone

Swathing

- Growers who use seed colour change to decide when to swath:
 - Younger growers
 - Experienced growers (years of growing canola)
 - Growers with college or university education

Fungicide

- Growers using environmental conditions to determine whether to apply fungicide:
 - Growers with more years of growing canola
 - Growers in the Black soil zone

Record Keeping

- Growers can keep many different records. Focussing on physical records, those producers who are likely to keep 4 or more:
 - Larger farms
 - Growers with college or university education
- (herbicide use and product name, swathing date, grain sample prior to binning, nutrient program applied to each field, results from soil tests, details of any weed problems in each field, details of any disease problems in each field)



Summary

Summary

- Production practices vary across the Prairies
 - Preferred herbicide tolerance
 - N source
 - Canola rotation length
 - Tillage system
 - Seeder type
 - Fertilizer determination criteria
 - Swathing criteria

Summary

- Factors impacting canola yield
 - N
 - Growing conditions (precipitation, heat, other)
 - Seeder calibration
 - Determination of fertilizer rate
 - Hybrid
 - Seeding date
 - Swathing criteria

Summary

- Factors influencing decisions
 - Farm size
 - Formal education level
 - Soil zone (region)
 - Experience growing canola

Acknowledgements

- Agriculture and Agri-Food Canada
- The Canola Council of Canada



- Kace Warner
- Jordan Wregget
- José Barbieri

THE END