Drilling Down on Stand Establishment

PNWCA Workshop

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Stand Establishment

The most important aspect of canola production!!

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Ideal Stand

Adequate unform plant population

Even, quick emergence.

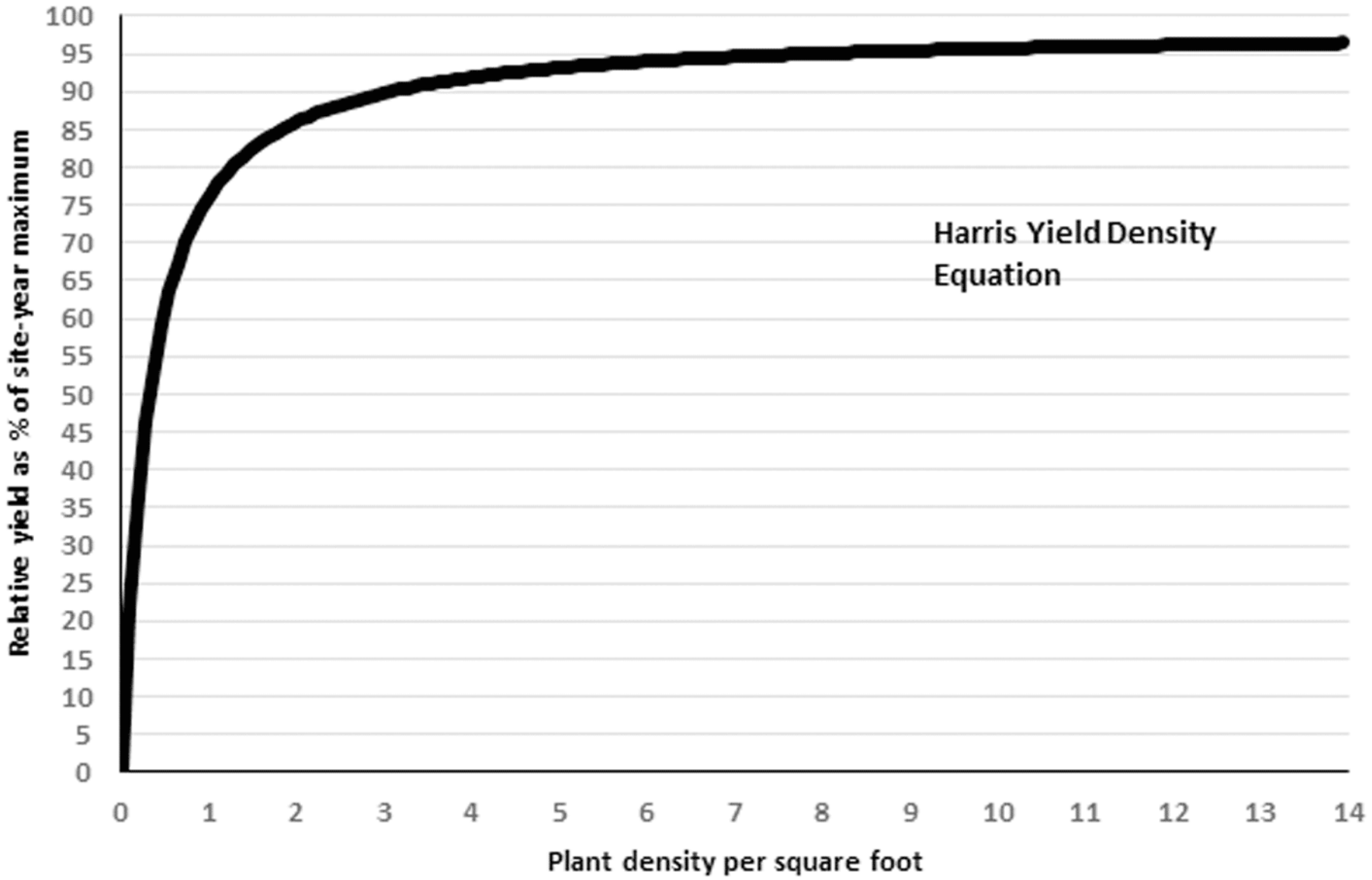
Stand Establishment

The most important aspect of canola production!!

- **Sowing Rates**
- **Sowing Depth**
- **Field and Soil Conditions**
- **Fertilizer Placement**
- **Crop Residue**
- **Drill Performance**
- **Weather Conditions**

What is a Suitable Stand of Canola?

Spring	Winter
6-7 plants/ft^2 optimum	4-5 plants/ ft^2 optimum
4-5 plants/ft^2 adequate	2-3 plants/ft^2 acceptable
2 plants/ft^2 marginal	1-2 plants/ft^2 marginal


Hybrid Herbicide Tolerant Canola Density and Relative Yield from Meta-analysis of 85 Site Years Data from Western Canadian Trials
Relative yield as % of site-year maximum
100
95
90
85
80
75
70
65
60
55
50
45
40
35
30
25
20
15
10
5
0
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
Plant density per square foot
Harris Yield Density Equation

Calculating a Sowing Rate of Canola?

3 factors to consider

1. Seed Count Canola nominally 100,000/lb
2. Germination % (on seed tag) example 95%

3. Mortality or Recruitment

50 to 70%

Calculation of Sowing rate

Seed Count from the seed tag 121,000/lb

Germination percentage from seed tag 96 %

Assumed Recruitment 50% or 70%

Desired plant population $7/ft^2$

$7/(.50 \times 0.96) = 14.6$ seed/ft^2 or $7/(.70 X0.96) = 10.5$ seed/ft^2

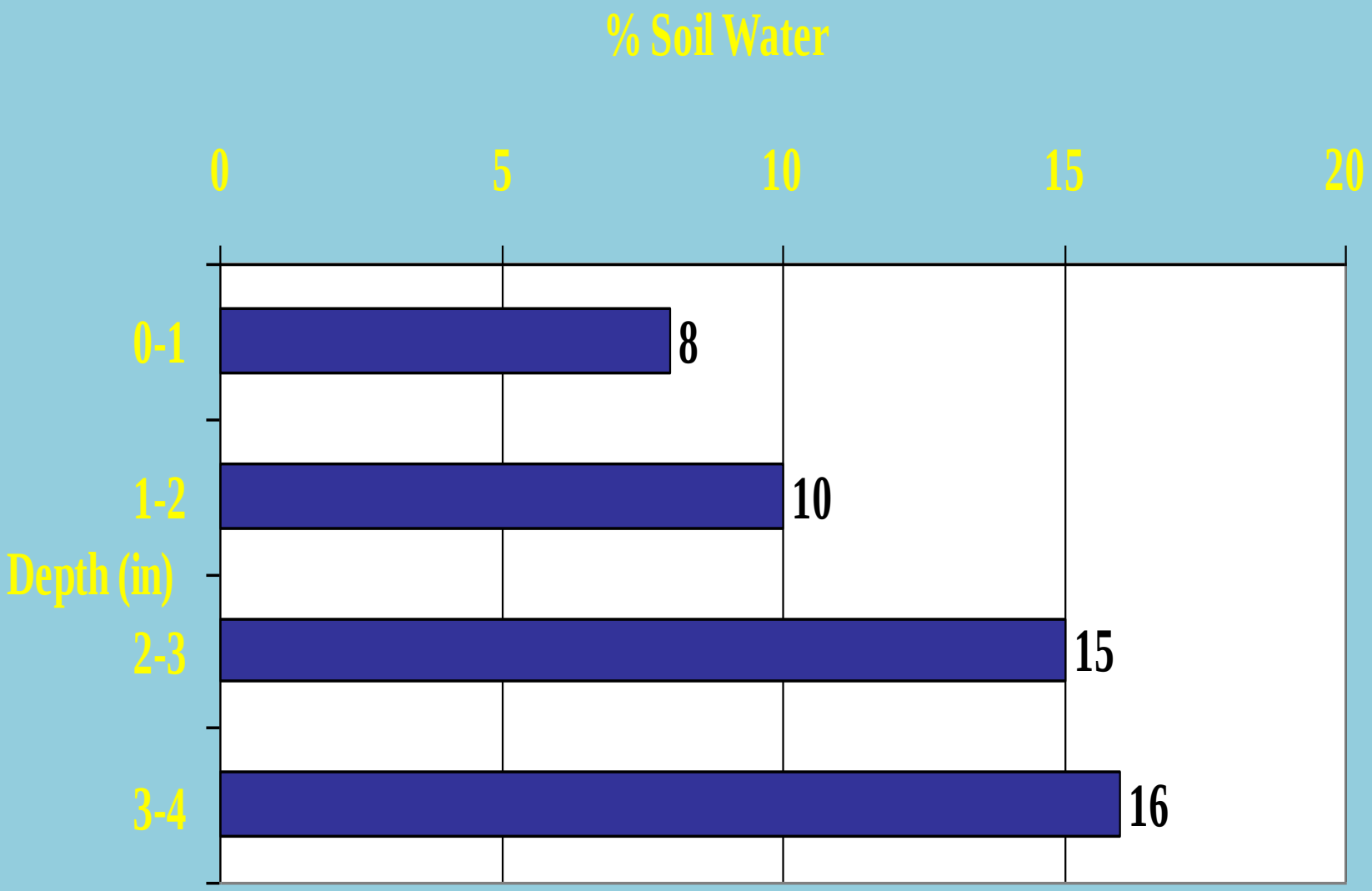
14. 7 X 43,560/121,000 = 5.3 lb/acre 10.5 X 43,560/121000 = 3.8 lb/acre

What Affects Mortality or Recruitment

1. Drill Opener Placement
2. Drill Speed
3. Drill Metering Systems
4. Seedbed conditions
    a. Seed zone water content
    b. Residue amount
5. Seed Count
6. Germination % (on seed tag)


Steel Rule

September Precip.


% Soil Water
0
5
10
15
20
Depth (in)
0-1
1-2
2-3
3-4
8
10
15
16

Field Operations

- Seeded Ericka Canola @ 8 lbs/acre
- Seeding date - Sept. 28
- Fertilizer at seeding:

  46-0-0 @ 162 lbs/acre (75 N),

  16-20-0-14 @ 100 lbs/acre

Canola stand establishment, plant weight and yield

Seed Placement	Stand	Dry Matter April 1	Yield
	Plants/ft^2	lbs/acre	lbs/acre
Over fertilizer	4.6 b	783 b	2350 b
1 in. to the side	2.9 b	403 c	2240 b
2 in. to the side	10.4 a	1590 a	2980 a

Questions and Discussion