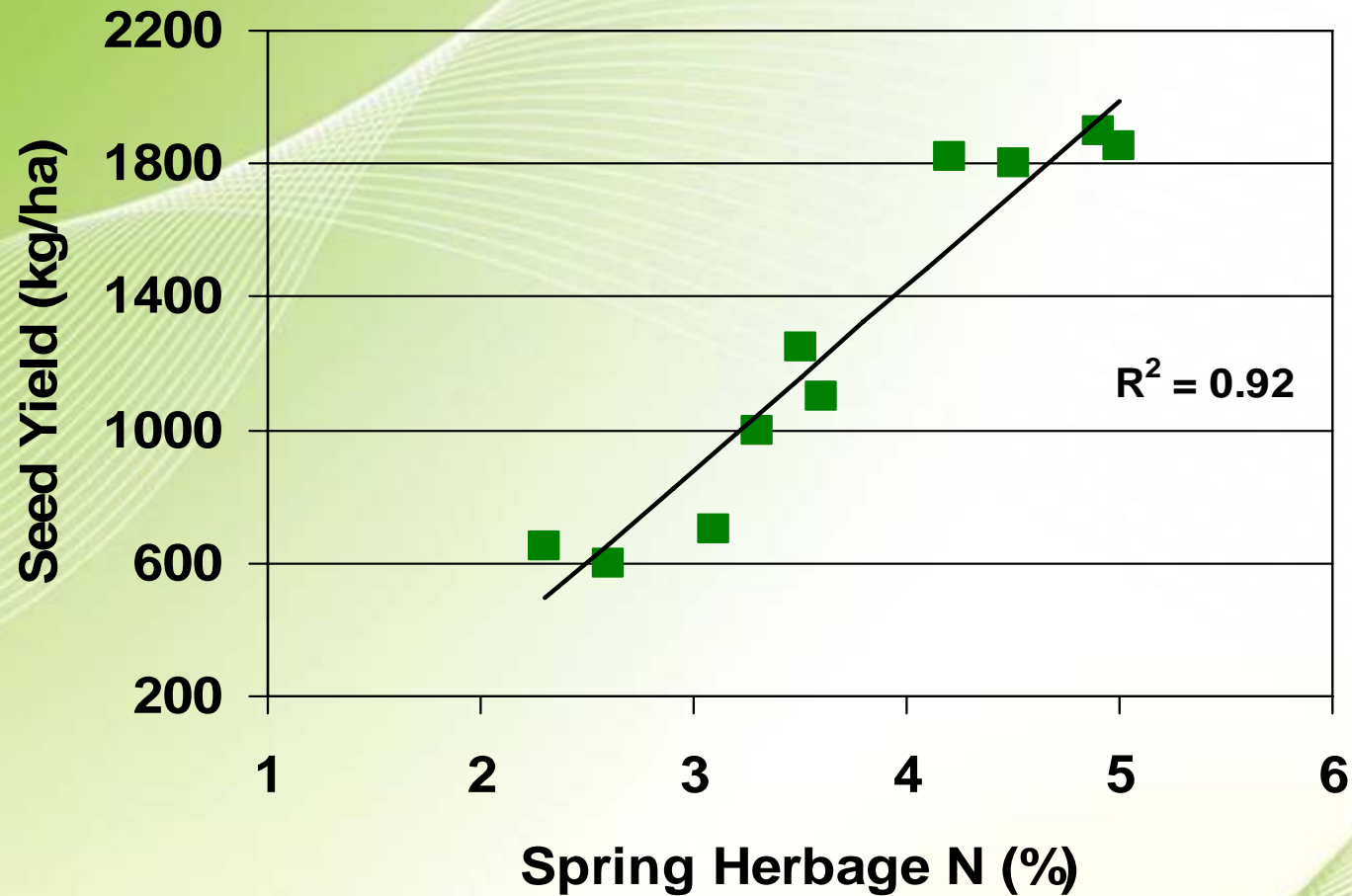


# Ryegrass Systems Trials & how much N is too much?



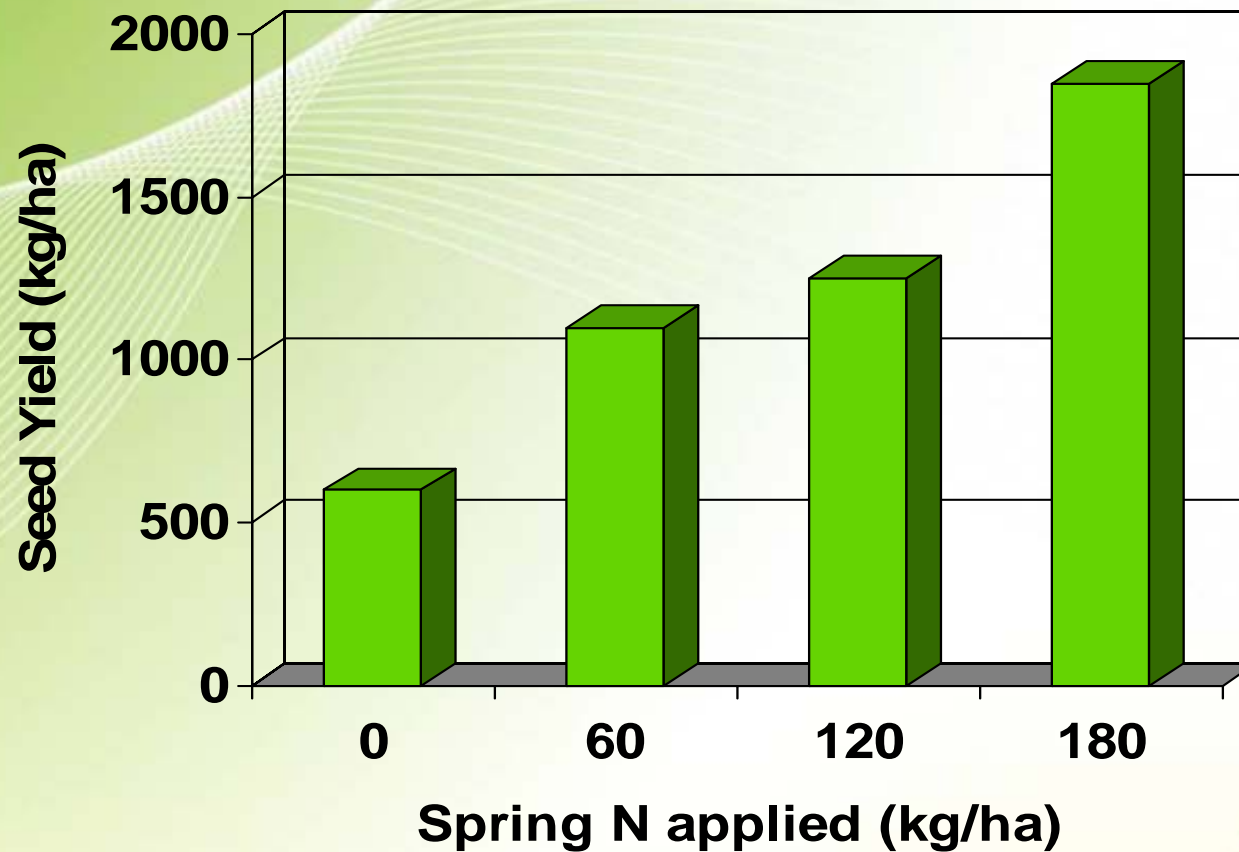
**Bede McCloy & Phil Rolston**  
**NZ Arable & AgResearch**  
**June 2005**

# Relationship between spring herbage N and seed yield



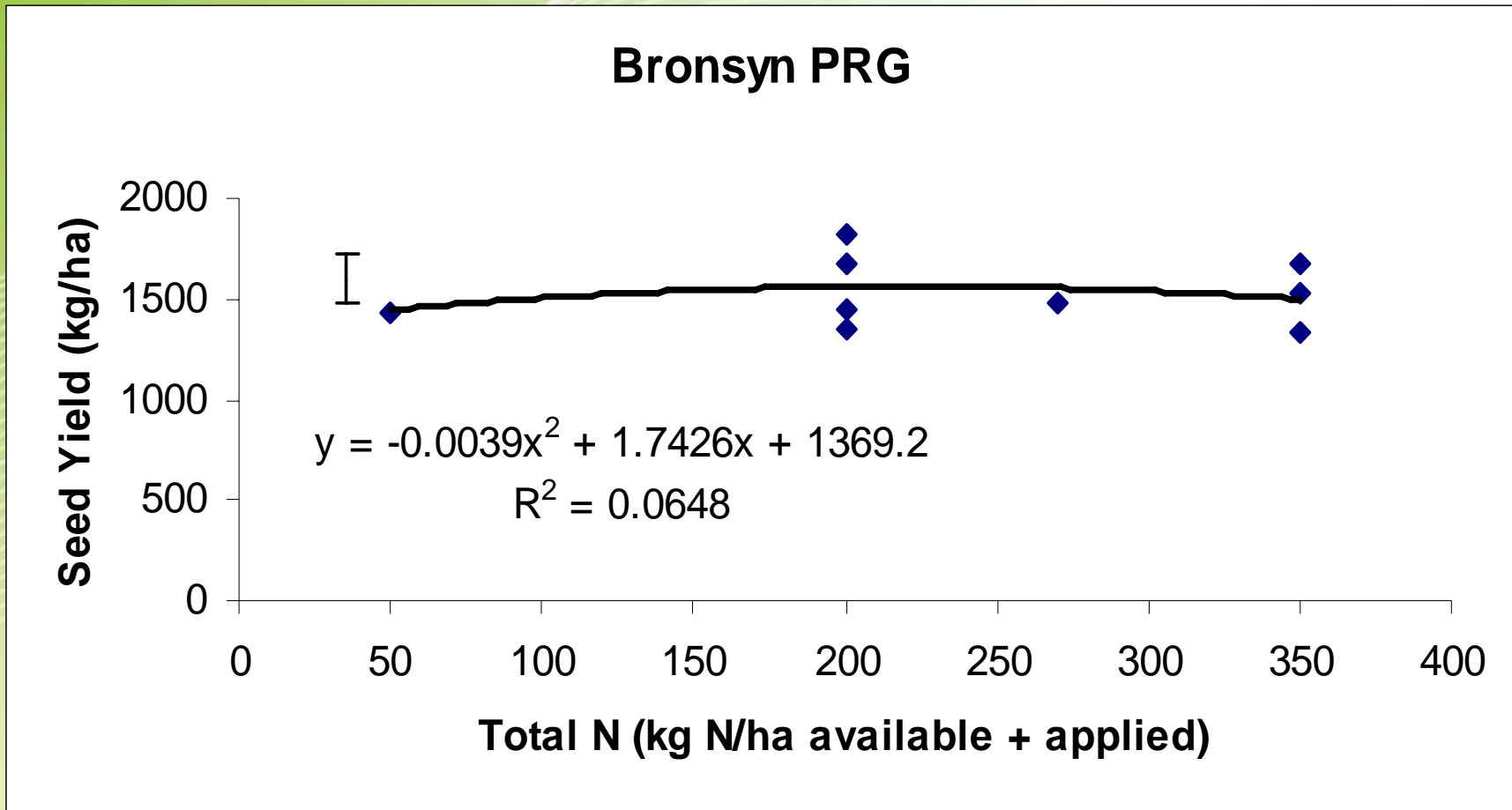
Source: Rowarth & Rolston FAR Update No.4 1996

# Response in Seed Yield to Spring N



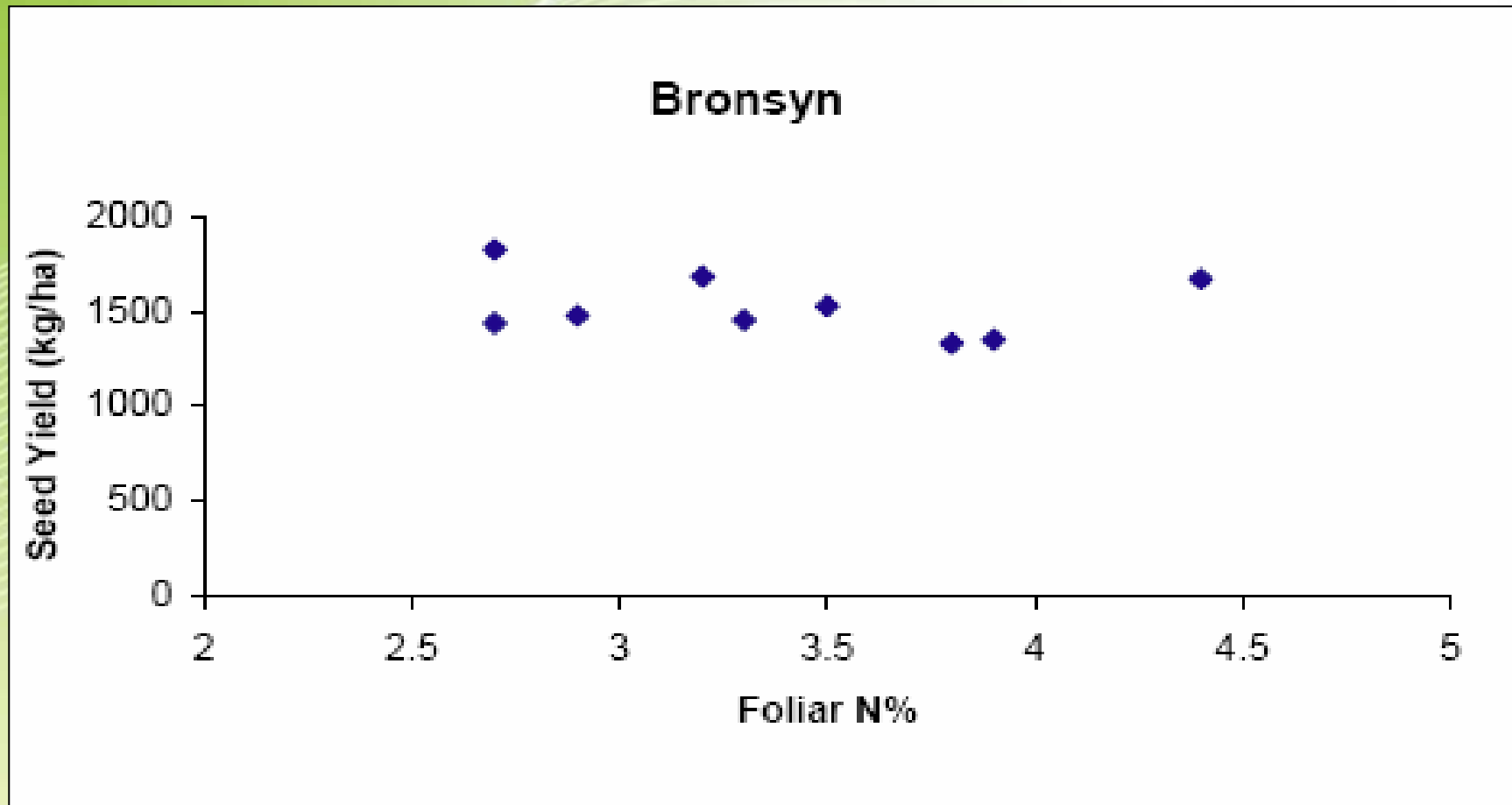
Source: Rowarth & Rolston FAR Update No.4 1996

# 2003/04 Bronsyn PRG

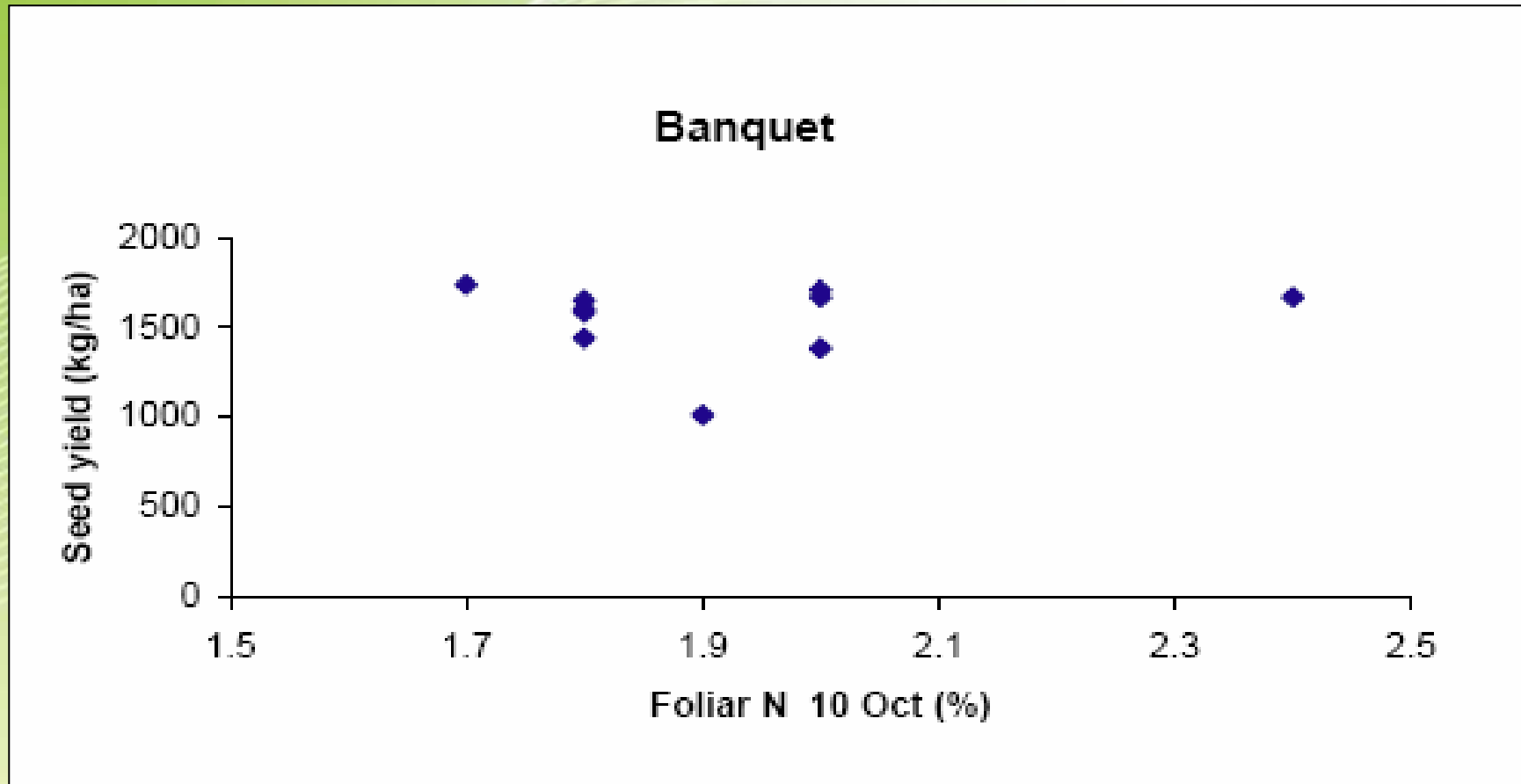


Soil available N 50 kg/ha

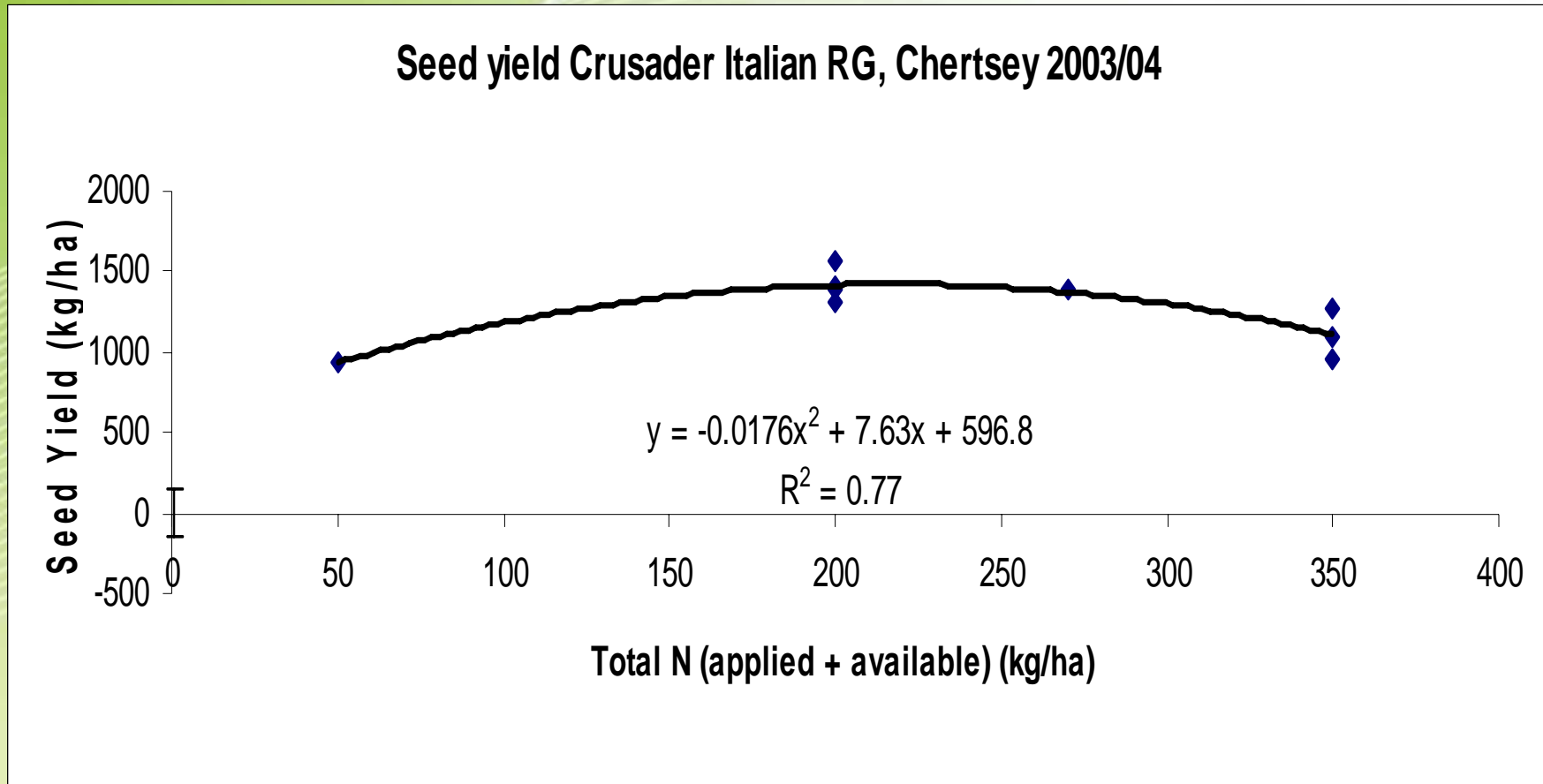
# 2003/04 Foliar N% relationship to Seed Yield



# 2003/04 Foliar N% relationship to Seed Yield



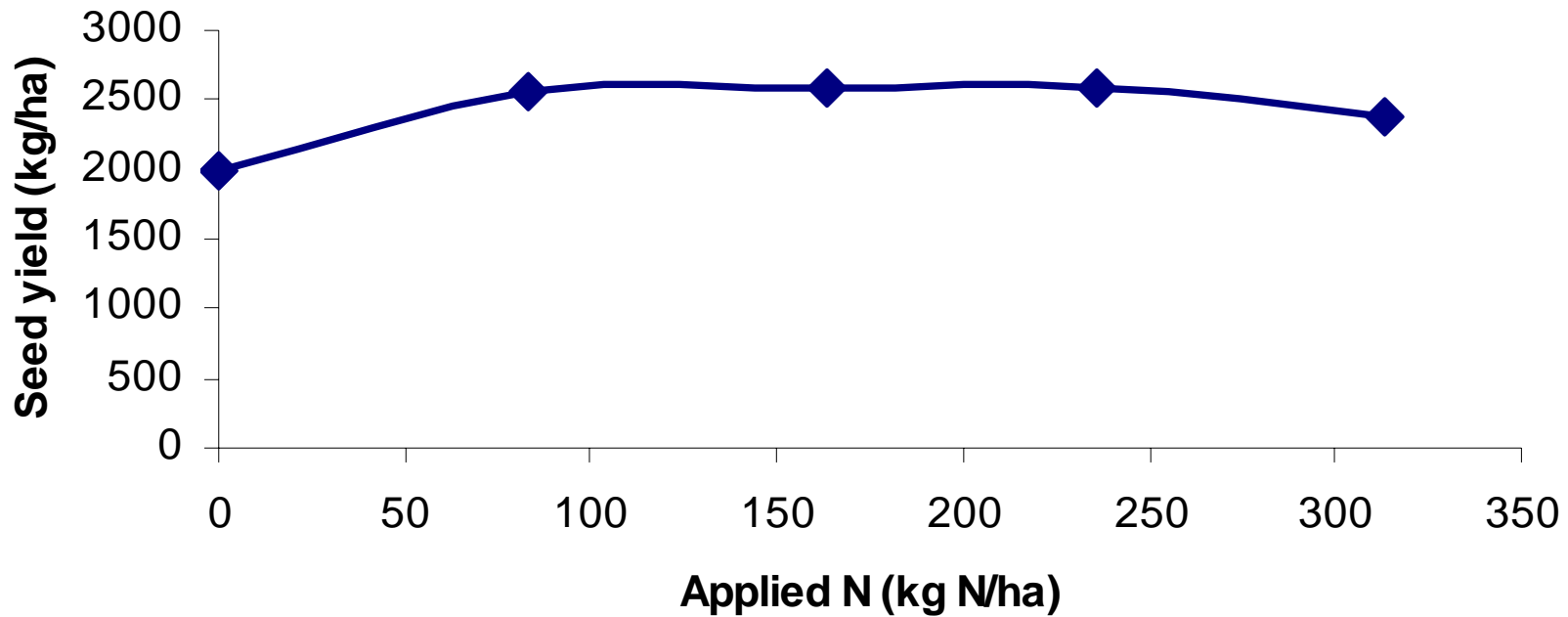
# 2003/04 Crusader IRG



Available soil N 50 kg/ha

# Italian ryegrass 2004/05 Crusader

## Italian cv Crusader @ Southbridge



Soil mineral. N 37 kg/ha (0-30cm)

# Crusader N (2004/05)



Applied N = 0

Total N = 40

Seed Yield = 1980

Applied N=**80**

Total N= **120**

Seed Yield = **2720**

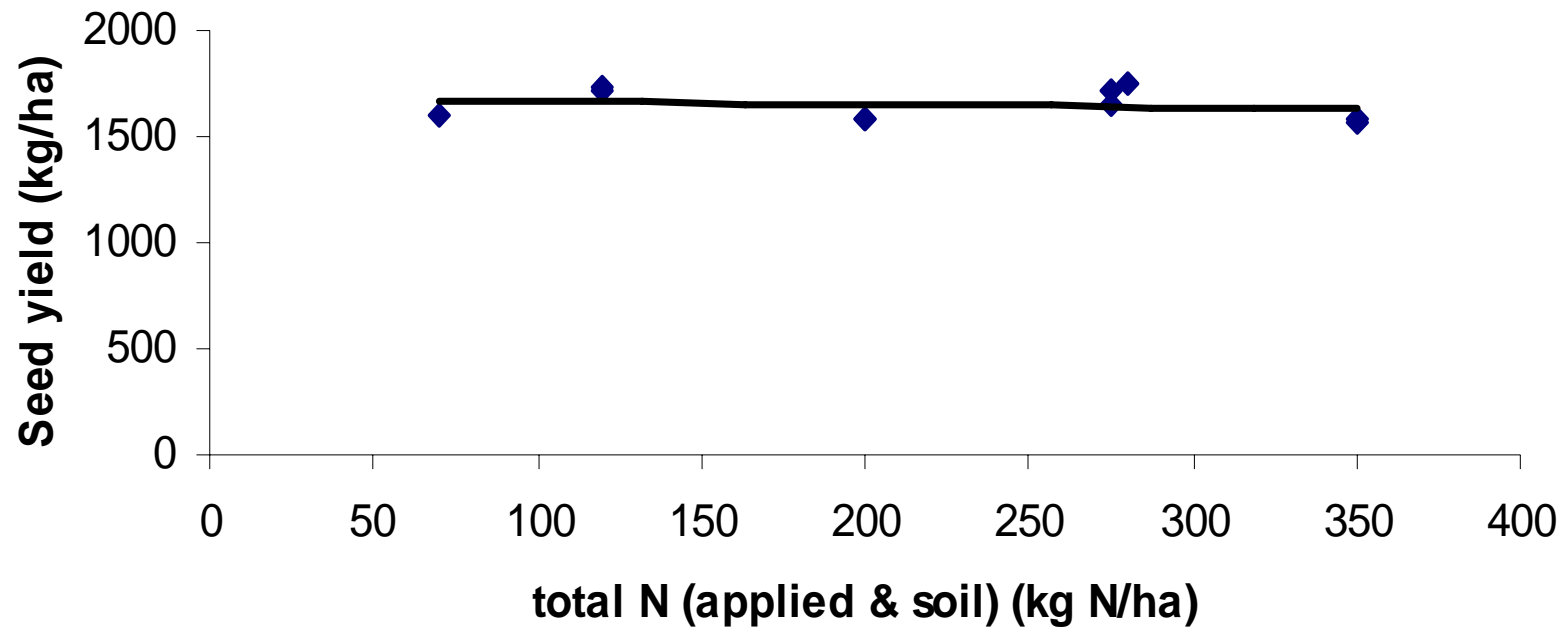
Applied N=235

Total N=275

Seed Yield = 2440

# Perennial ryegrass cv “Bronsyn”

Methven 2004/05



Soil mineral. N 71 kg/ha (0-30cm)

# 2004/05 Bronsyn - Seed Yield response to kgN applied



# Impact of Seed Yield on N removed

<b>Yield (kg/ha)</b>	<b>Seed (kg N/ha)</b>	<b>Straw (kg N/ha)</b>	<b>Total removed (kg/ha)</b>
<b>1000</b>	<b>20</b>	<b>200</b>	<b>220</b>
<b>1500</b>	<b>30</b>	<b>200</b>	<b>230</b>
<b>2000</b>	<b>40</b>	<b>200</b>	<b>240</b>
<b>2500</b>	<b>50</b>	<b>200</b>	<b>250</b>
<b>3000</b>	<b>60</b>	<b>200</b>	<b>260</b>

# What does this mean?

- Two years ago we thought we had most of the answers for growing ryegrass.

*“Growing grass seed is easy”*

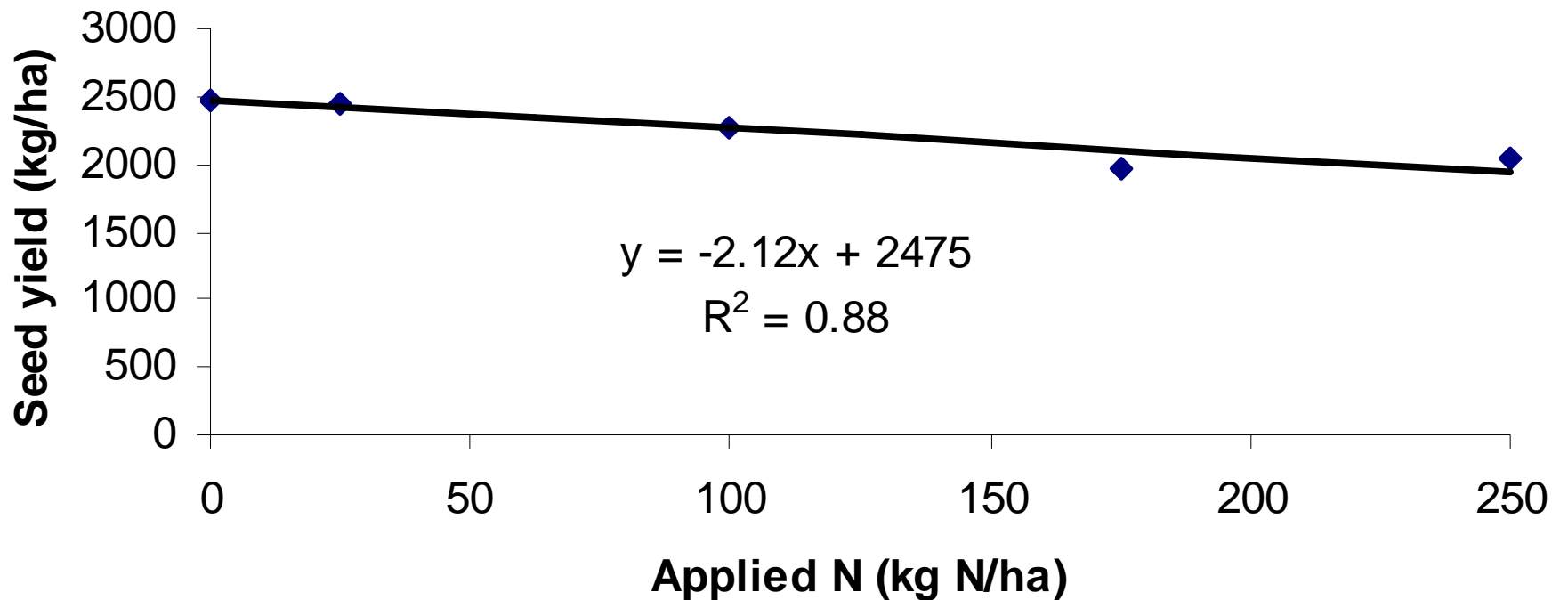
- BUT these results have tipped our thinking over!!

# 2004/05 Example Trial Treatments

Tmt	Total N	Applied N	31Aug E.Tiller	15Oct Close	10Nov Mid stem EI	29Nov Head Emg
1	100					
2	125	25	25	0	0	-
3	200	100	25	38	38	-
4	275	175	25	75	75	-
5	350	250	25	113	113	-
6	120	20	-	7	7	7
7	200	100	-	33	33	33
8	275	175	-	58	58	58
9	350	250	-	83	83	83

# Italian ryegrass

## Italian cv "Crusader" @ Temuka 2004/05



Soil mineral. N 100 kg/ha (0-30cm)

# Italian ryegrass Temuka 2004/05

<b>Total N (kg/ha)</b>	<b>Applied N</b>	<b>Seed yield (kg/ha)</b>
100	<b>0</b>	<b>2480</b>
125	25	2450
200	100	2280
275	175	1970
350	250	2030

# Timing of N on Italian ryegrass

Italian cv "Crusader" @ Temuka 2004/05

