

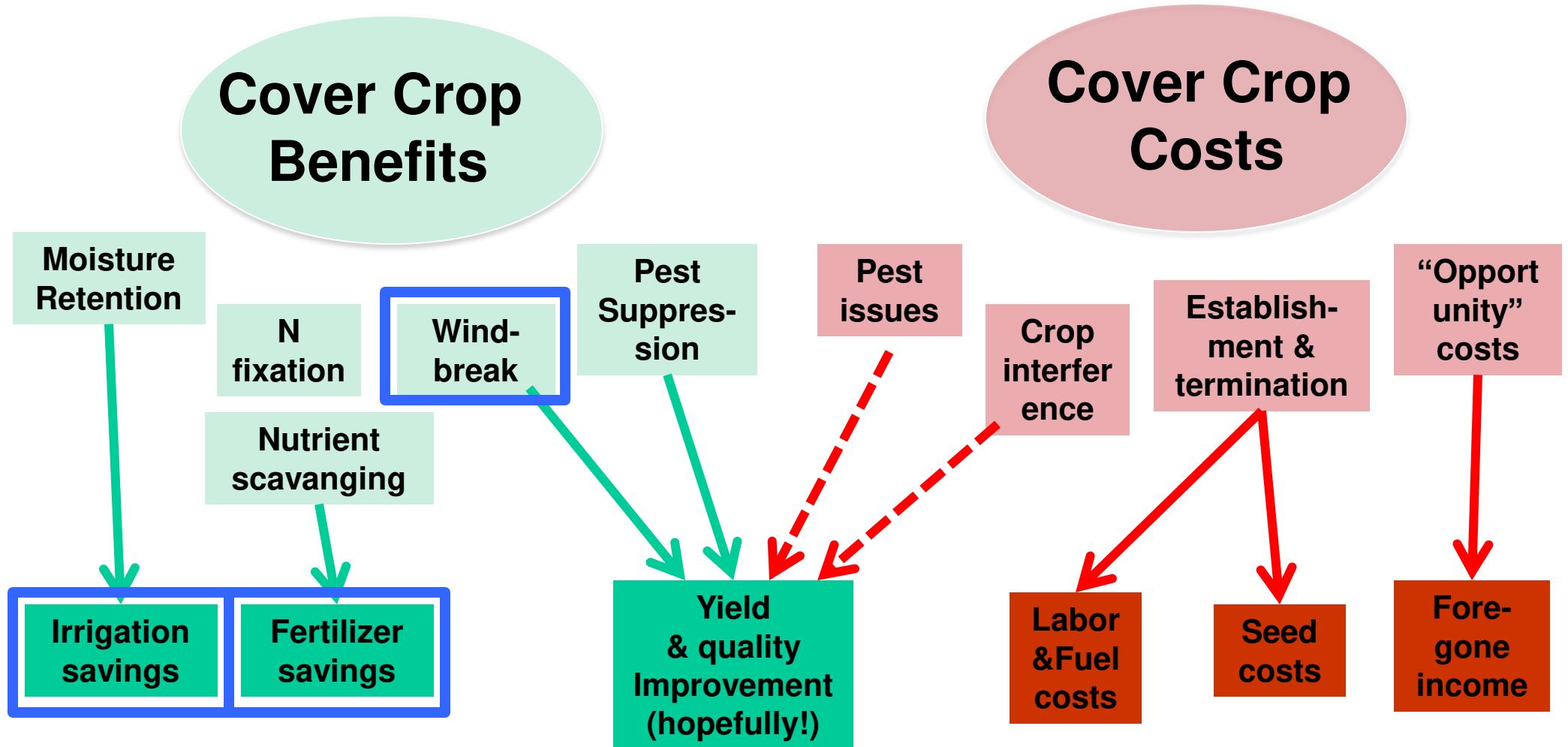
Making \$ense with Cover Crops



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Michigan State University
MCC Meeting, London, ON
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Short term costs and benefits of cover crops

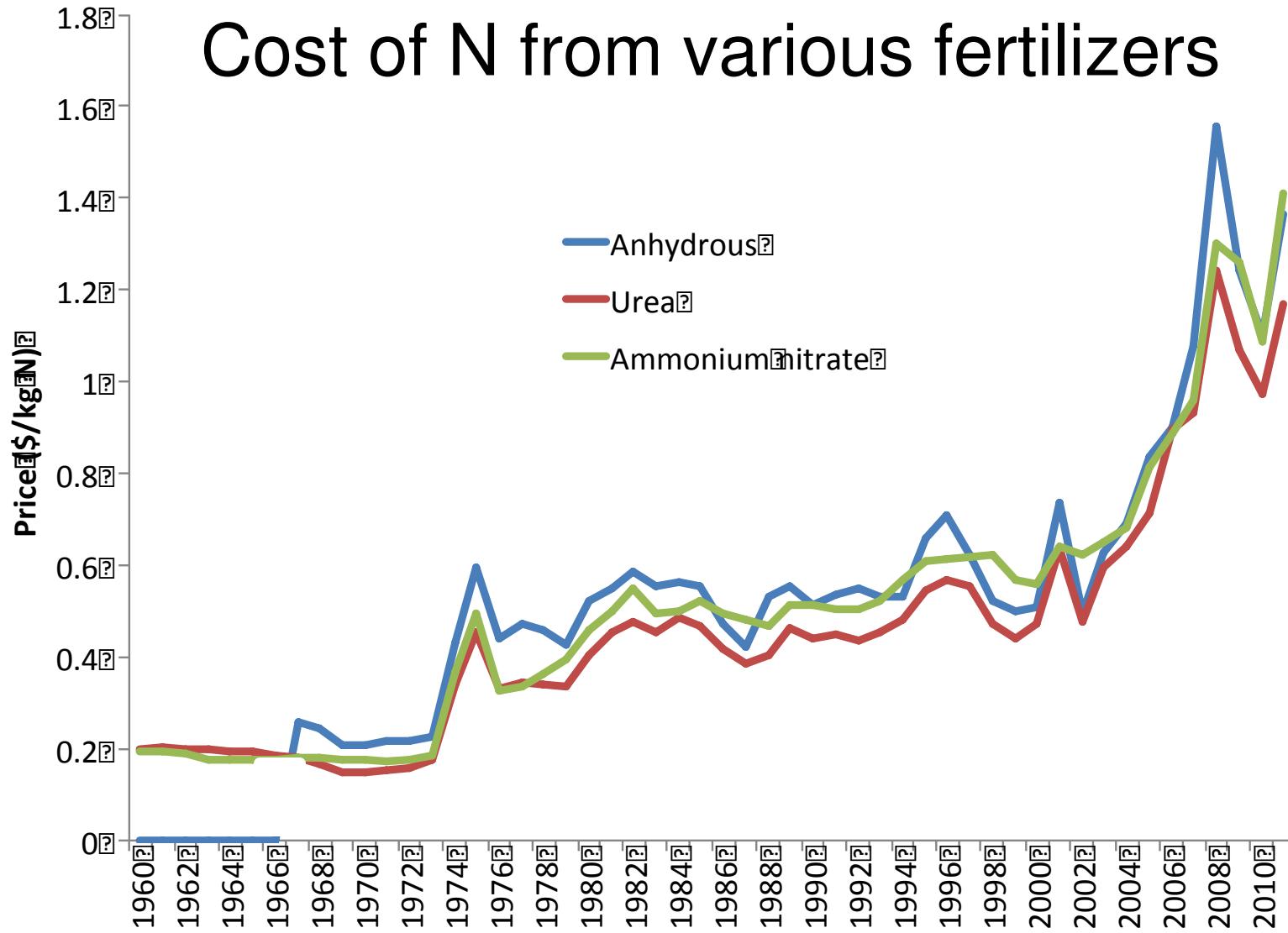


Gross Revenue - Costs
= Net Revenue

A photograph of a agricultural field. In the foreground, there is a dense crop of green soybean plants with trifoliate leaves. Behind them, a grassy area leads to a fence and a line of trees under a clear sky.

1. N fertilizer replacement

Cost of N from various fertilizers



What is the cost per kg of N fixed from legumes?

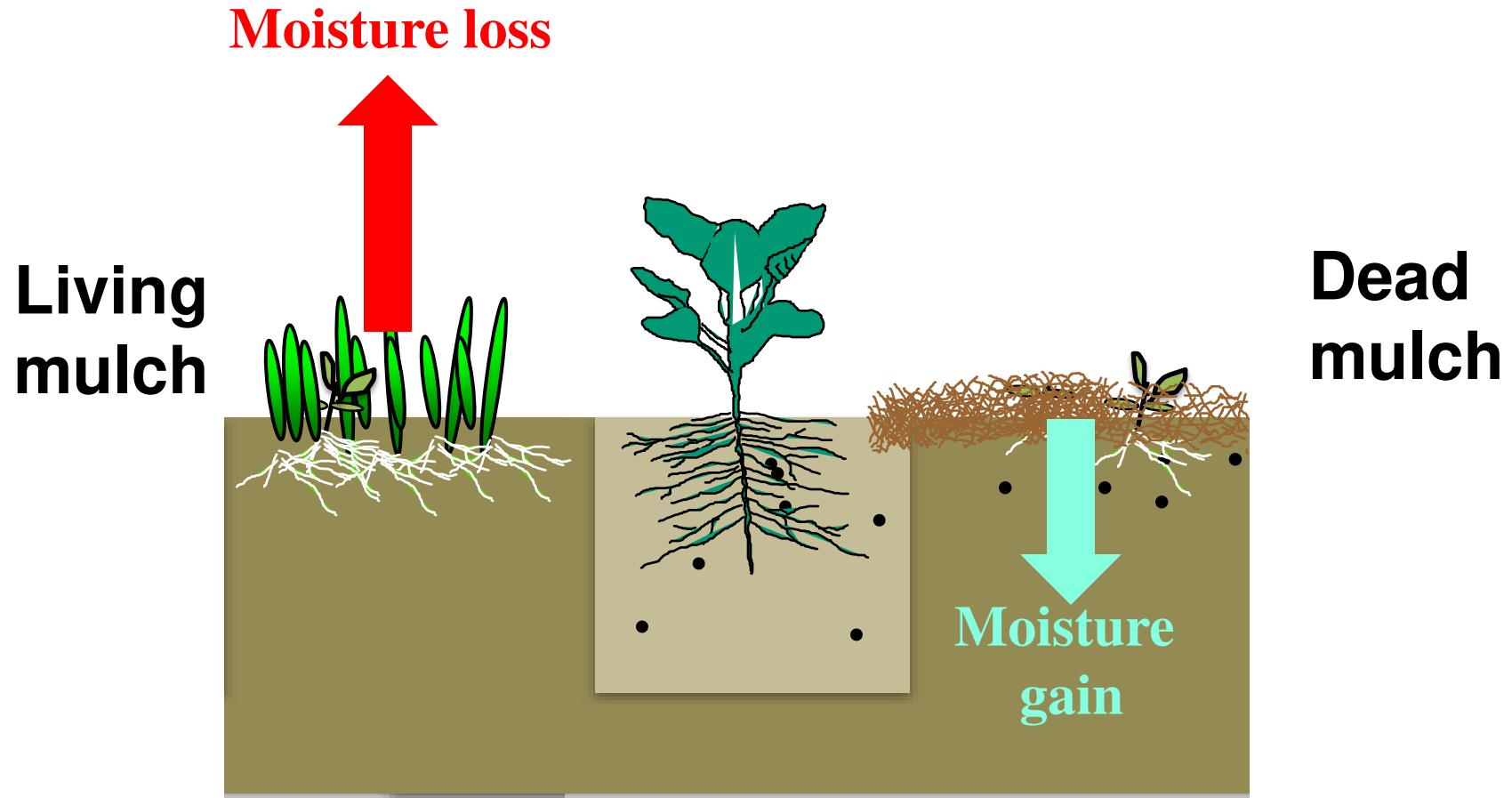
Estimated seed costs per kg of N fixed

	\$/kg N
vetch ^a	1.99
vetch + rye ^a	1.13
cowpea	3.43
cowpea + sorghum + sudangrass	3.19
cowpea + Japanese millet	1.39
soybean	0.84
soybean + sorghum + sudangrass	1.98
soybean + Japanese millet	1.58
Approximate cost of N from Urea	1.20

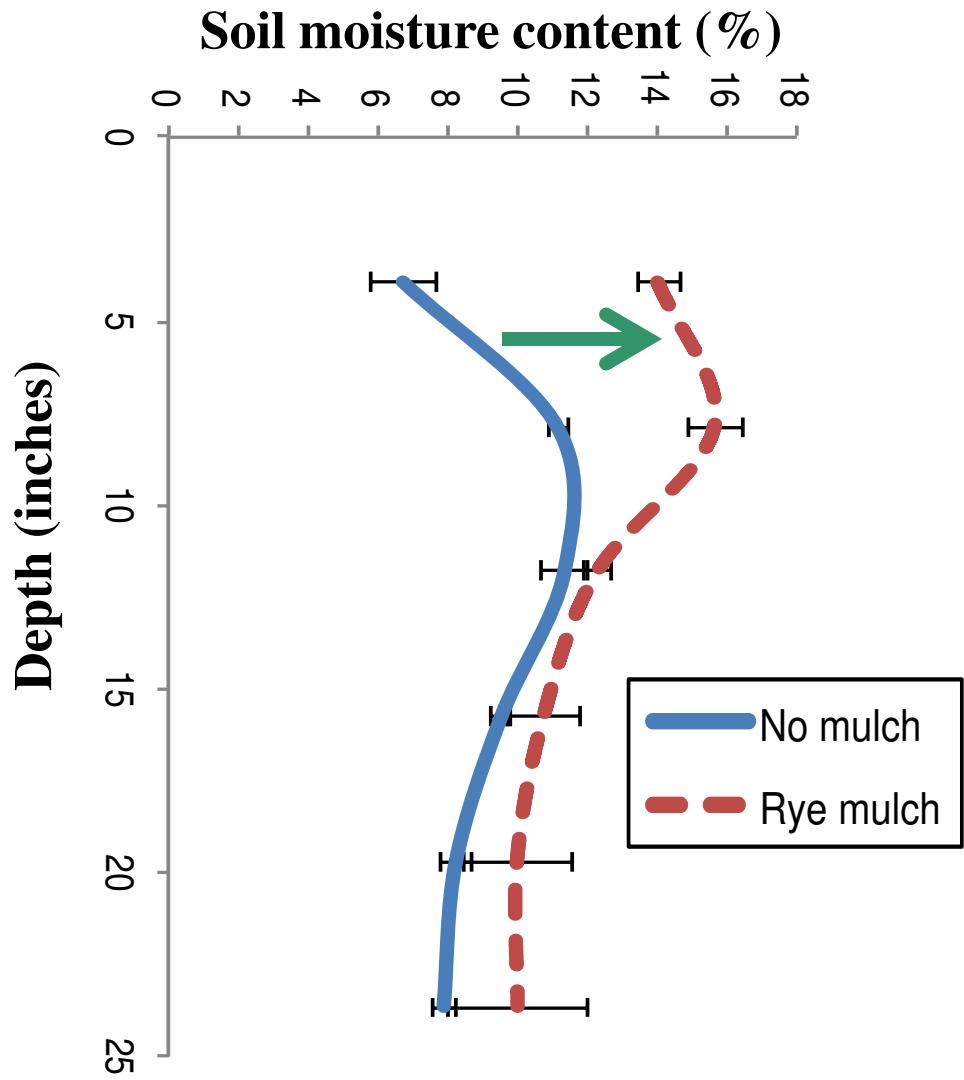


2. Irrigation Savings

Strip Tillage with Living and Dead Mulches



Soil moisture in strip-tilled sweet corn, 2012

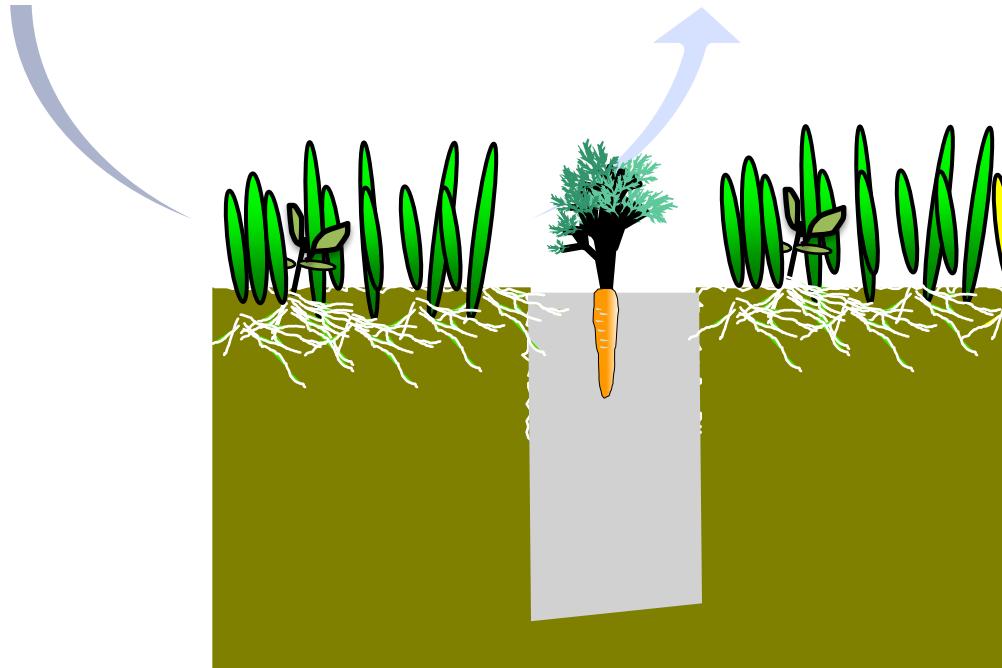


Rye mulch:
1.5 cm more water
in crop root-zone

A photograph of a cornfield that has suffered significant damage from strong winds. The corn plants are bent over at the base, with their green leaves and yellow-tinted ears lying flat against the brown, sandy soil. In the background, a dense line of trees stands under a clear blue sky.

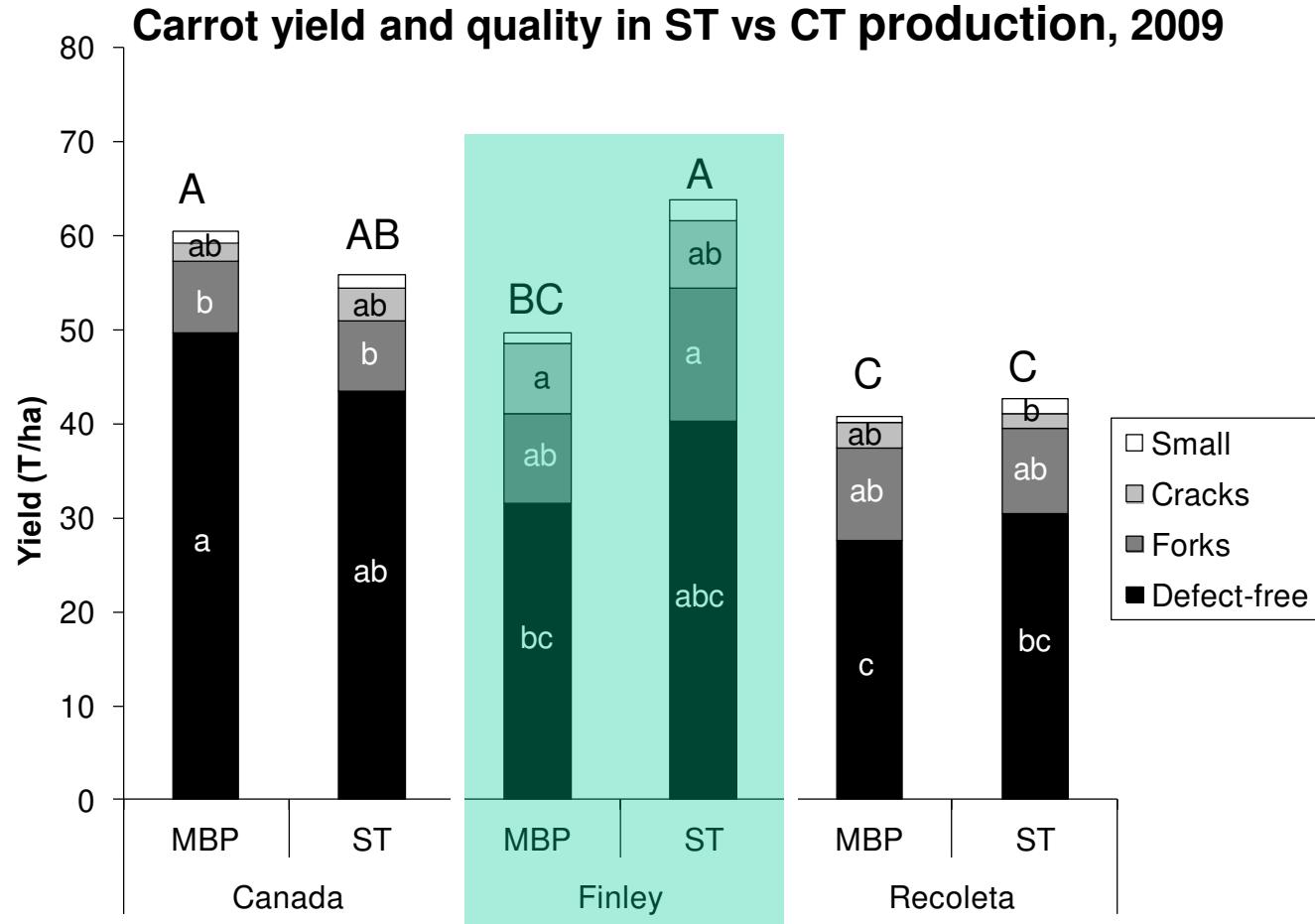
3. Wind Insurance

Strip-till and windbreaks in carrots



Early in season

Living Mulch: Wind Break



Brainard and Noyes. 2012. *HortSci.* 47: 1073-1079.



Acknowledgements

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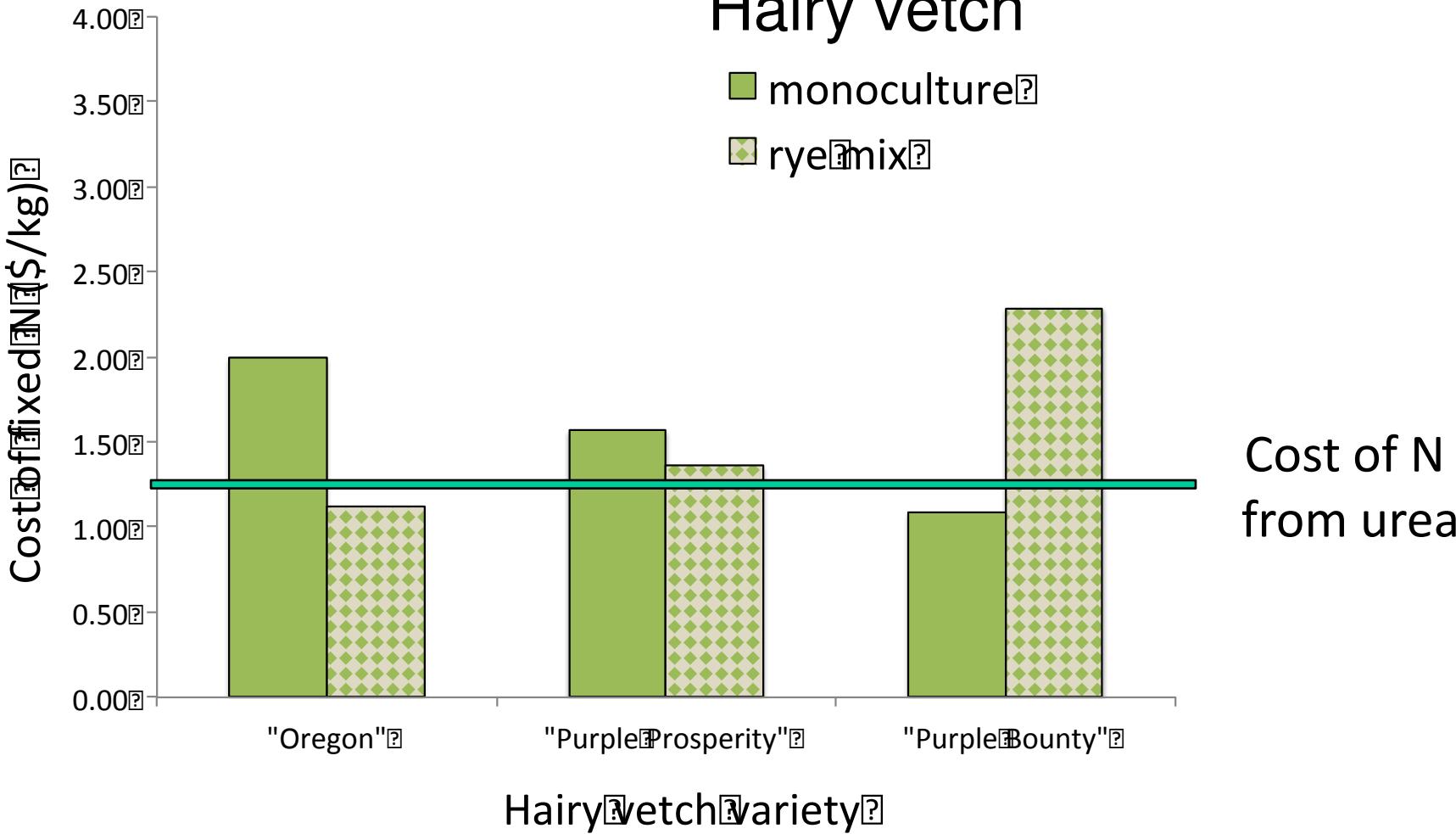
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- Rick Oomen
- Malburg Farms
- Ralph Oomen

Supplementary Info

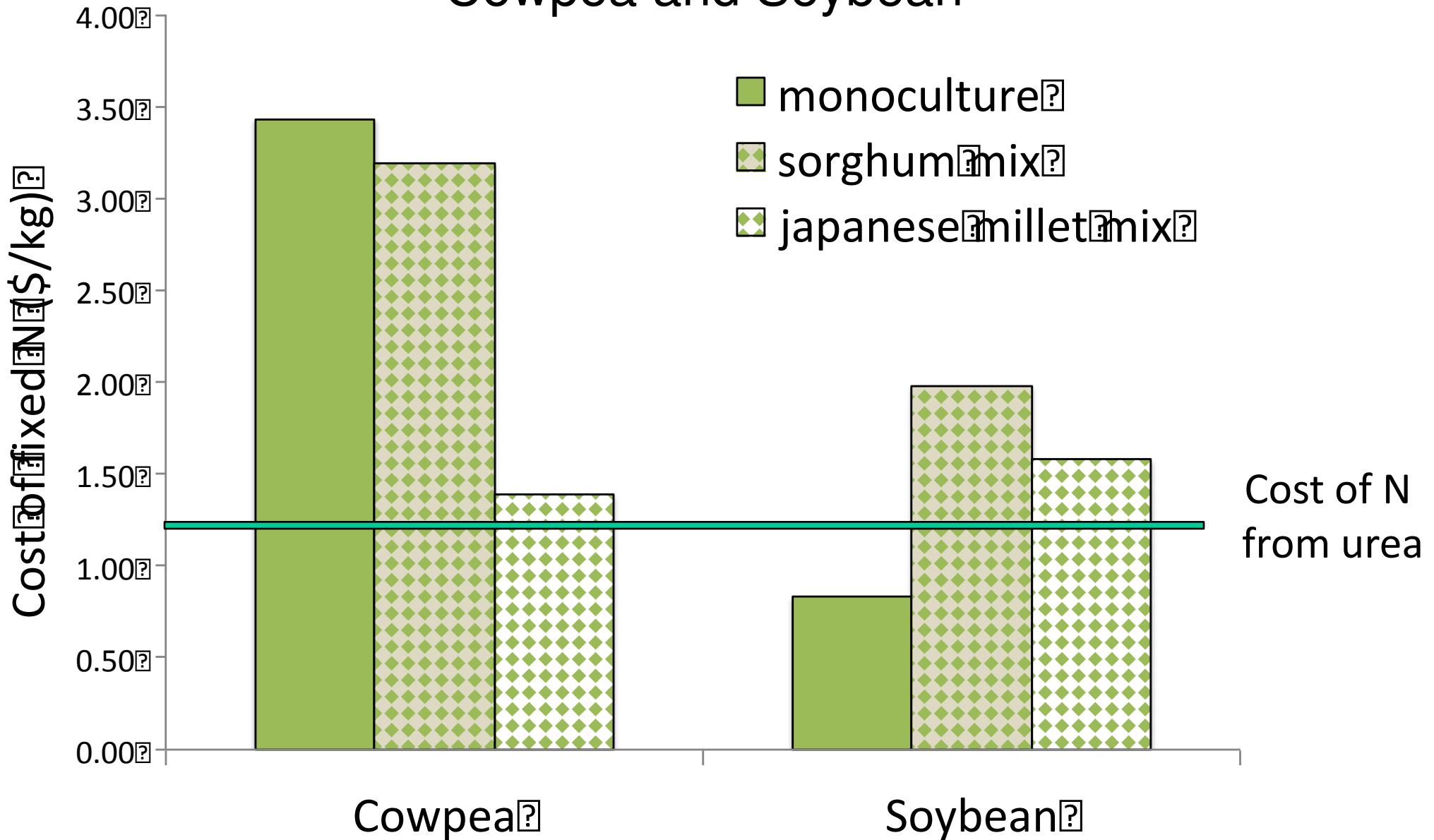
Seed costs per kg of N fixed Hairy vetch



- Hairy Vetch Variety**
- **“New N” from legumes becoming more economical**
 - **Grass legume mixtures can reduce costs (sometimes!)**

Seed costs per kg of fixed N

Cowpea and Soybean



Available N in the First Season

