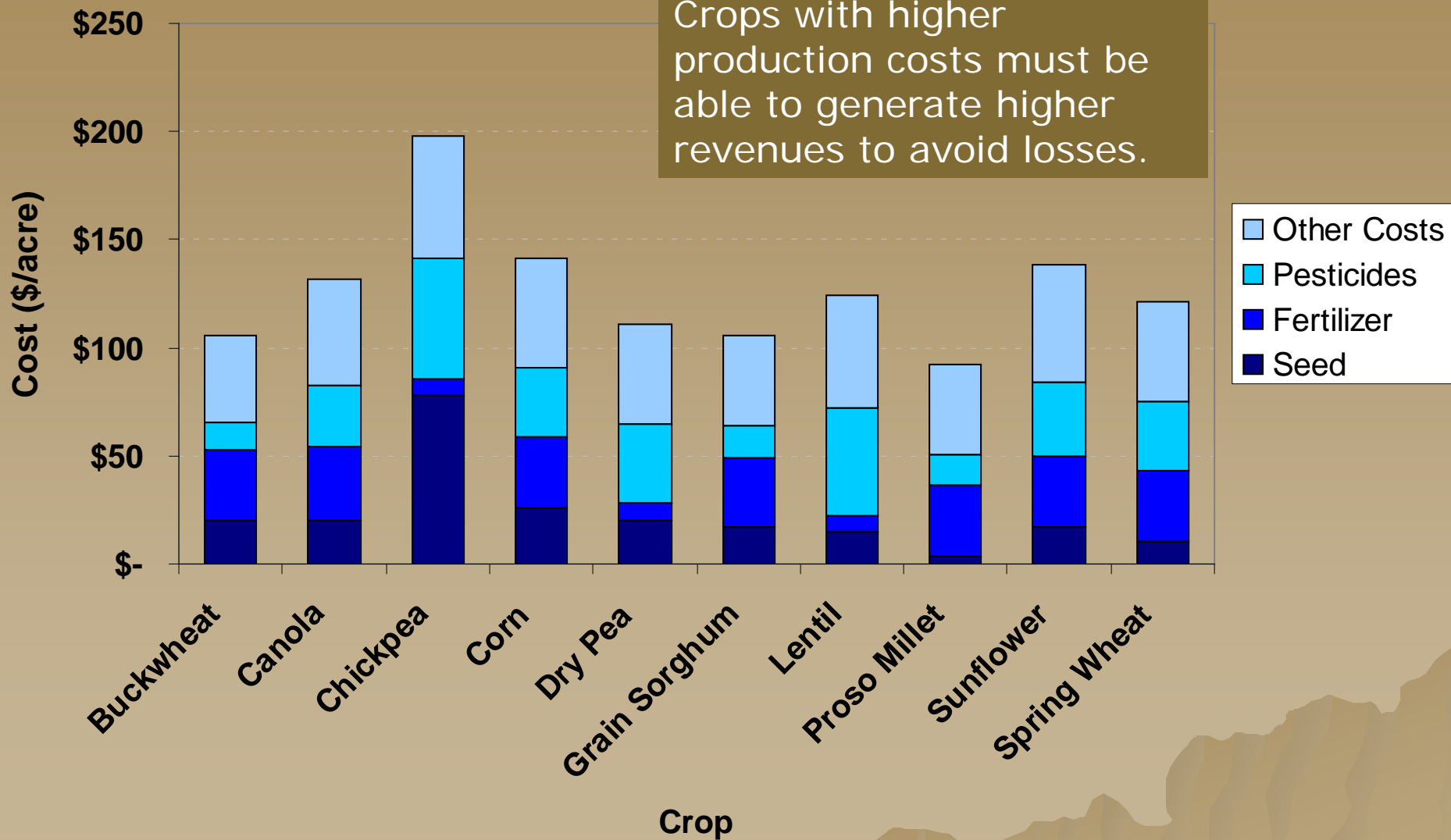


Economic Considerations in Crop Sequence Selection



Production Costs



Planning the current season: Given the previous crop, what will likely be the most profitable crop this season?

Crop Residue

Crop

	Buck-wheat	Canola	Chick-pea	Corn	Dry Pea	Grain Sorghum	Lentil	Proso Millet	Spring Wheat	Sun-flower
Buck-wheat	42	-6	-41	-51	12	-8	24	32	30	-33
Canola	39	-27	-21	-38	3	-9	19	26	19	-12
Chick-pea	26	-24	-39	-17	10	0	-2	29	24	-6
Corn	39	-15	-36	-37	17	-23	23	21	21	-9
Dry Pea	49	-36	-18	-26	-11	-10	15	27	21	-12
Grain Sorghum	25	-17	-33	-22	11	-13	8	26	25	-9
Lentil	29	-35	-25	-23	11	1	3	27	25	-14
Proso Millet	22	-30	-11	-28	25	-37	33	15	18	-6
Spring Wheat	34	-43	-14	-30	12	-16	39	10	17	-9
Sun-flower	39	-25	-34	-33	31	-16	20	30	24	-36

Maximum in each row
Minimum in each row

Within each crop residue, net returns (\$/acre) for each crop relative to the average for all 10 crops (2003-2004 average costs and yields, 1999-2006 average prices). Note: the most profitable crop is sensitive to price assumptions.

Example: On Grain Sorghum residue, Proso Millet would have been the most profitable crop with net returns \$26/acre higher than the average of all 10 crops.

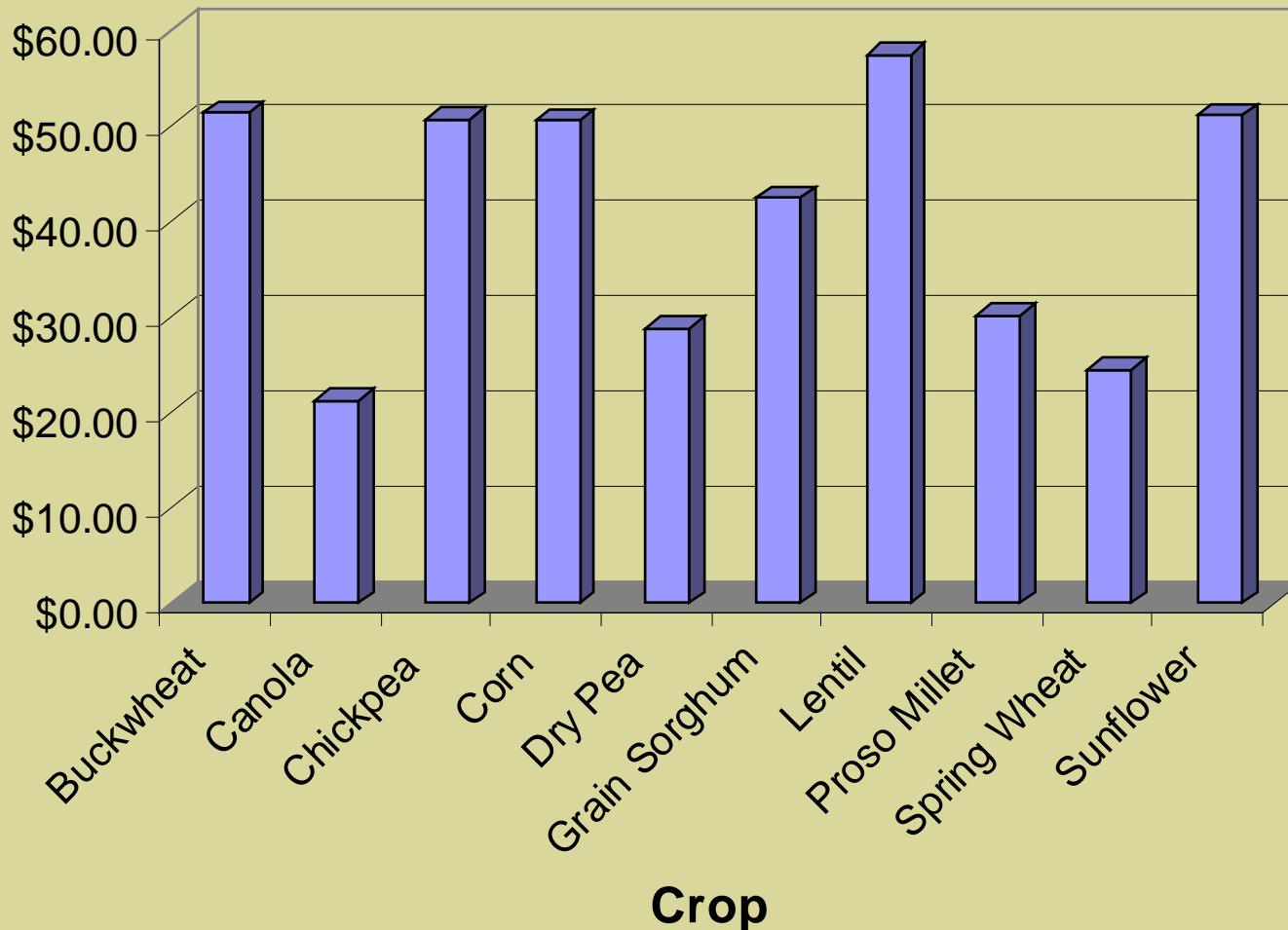
		Crop									
		Buck-wheat	Canola	Chick-pea	Corn	Dry Pea	Grain Sorghum	Lentil	Proso Millet	Spring Wheat	Sun-flower
Crop Residue	Buck-wheat	42	-6	-41	-51	12	-8	24	32	30	-33
	Canola	39	-27	-21	-38	3	-9	19	26	19	-12
	Chick-pea	26	-24	-39	-17	10	0	-2	29	24	-6
	Corn	39	-15	-36	-37	17	-23	23	21	21	-9
	Dry Pea	49	-36	-18	-26	-11	-10	15	27	21	-12
	Grain Sorghum	25	-17	-33	-22	11	-13	8	26	25	-9
	Lentil	29	-35	-25	-23	11	1	3	27	25	-14
	Proso Millet	22	-30	-11	-28	25	-37	33	15	18	-6
	Spring Wheat	34	-43	-14	-30	12	-16	39	10	17	-9
	Sun-flower	39	-25	-34	-33	31	-16	20	30	24	-36

Maximum in each row
Minimum in each row

Within each crop residue, net returns (\$/acre) for each crop relative to the average for all 10 crops (2003-2004 average costs and yields, 1999-2006 average prices). Note: the most profitable crop is sensitive to price assumptions.

How important is crop sequence?

Difference between maximum and minimum crop sequence net returns (\$/acre) for each crop (2003-2004 average).



Crop sequence had a substantial impact on net returns ... as much as \$57/acre for Lentil.

Within each crop, change in net returns due to crop sequence compared to crop seeded on its own residue (2003-2004 average \$/acre)

		Crop									
		Buck-wheat	Canola	Chick-pea	Corn	Dry Pea	Grain Sorghum	Lentil	Proso Millet	Spring Wheat	Sun-flower
Crop Residue	Buck-wheat	0	10	-12	-15	-2	8	5	4	-11	4
	Canola	8	0	20	10	0	18	11	10	-11	36
	Chick-pea	-6	1	0	29	6	26	-11	11	-7	41
	Corn	-2	2	-6	0	4	-6	5	-6	-18	29
	Dry Pea	32	5	36	36	0	31	20	25	6	51
	Grain Sorghum	-19	-4	-6	12	-5	0	-14	-4	-18	25
	Lentil	4	-2	21	30	14	34	0	16	1	40
	Proso Millet	-7	-1	31	21	24	-9	26	0	-10	44
	Spring Wheat	15	-4	39	29	22	23	43	6	0	51
	Sun-flower	-4	-11	-7	2	16	-2	-1	1	-18	0

Maximum in each column
Minimum in each column

Note: While the dollar value of changes are sensitive to price assumptions, the relative rankings within columns are not

Dry pea increased average net returns for each subsequent crop compared to growing that crop on its own residue.

		Crop									
		Buck-wheat	Canola	Chick-pea	Corn	Dry Pea	Grain Sorghum	Lentil	Proso Millet	Spring Wheat	Sun-flower
Crop Residue	Buck-wheat	0	10	-12	-15	-2	8	5	4	-11	4
	Canola	8	0	20	10	0	18	11	10	-11	36
	Chick-pea	-6	1	0	29	6	26	-11	11	-7	41
	Corn	-2	2	-6	0	4	-6	5	-6	-18	29
	Dry Pea	32	5	36	36	0	31	20	25	6	51
	Grain Sorghum	-19	-4	-6	12	-5	0	-14	-4	-18	25
	Lentil	4	-2	21	30	14	34	0	16	1	40
	Proso Millet	-7	-1	31	21	24	-9	26	0	-10	44
	Spring Wheat	15	-4	39	29	22	23	43	6	0	51
	Sun-flower	-4	-11	-7	2	16	-2	-1	1	-18	0

Maximum in each column

Minimum in each column

Grain sorghum decreased average net returns for each subsequent crop except corn and sunflower compared to growing that crop on its own residue.

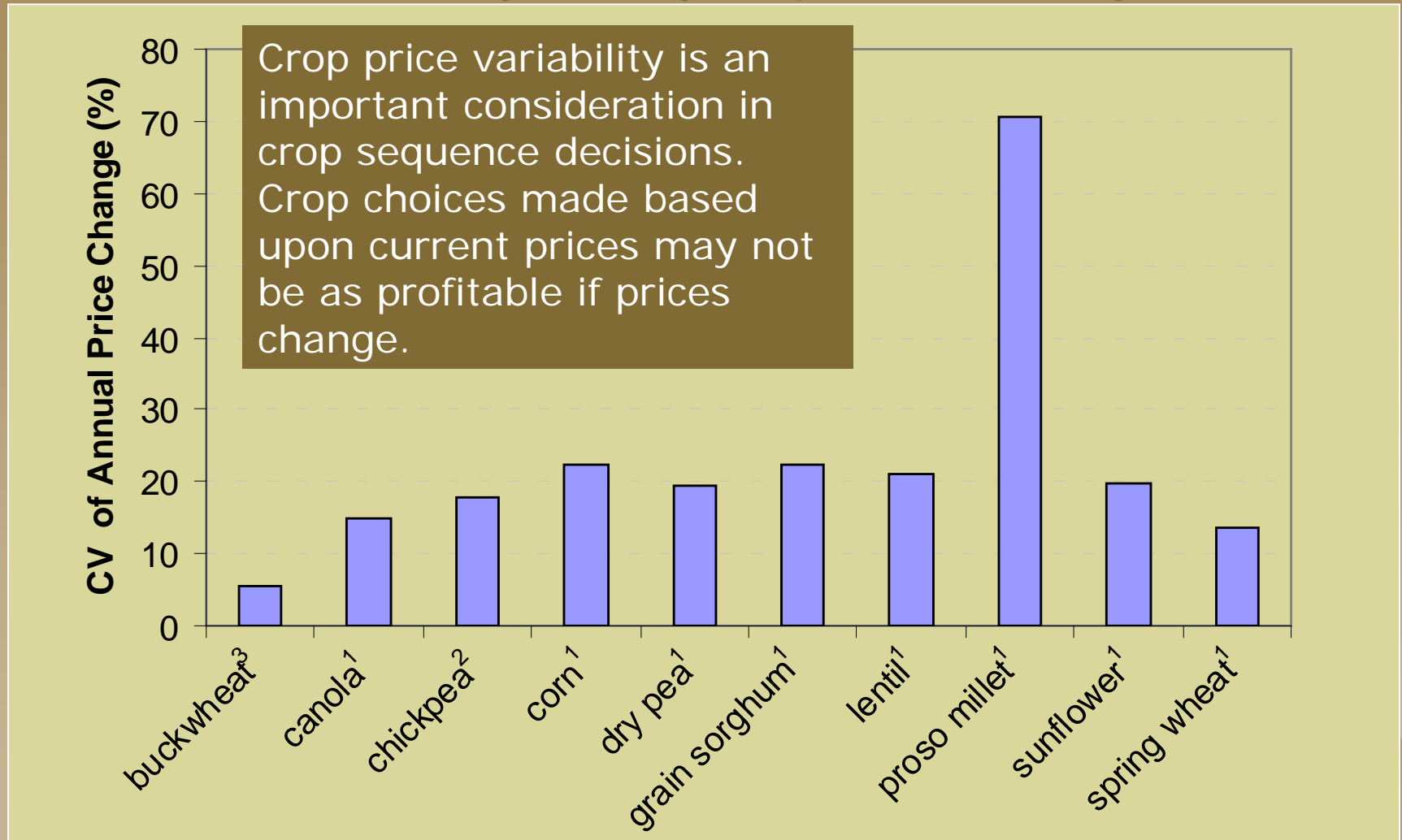
		Crop									
		Buck-wheat	Canola	Chick-pea	Corn	Dry Pea	Grain Sorghum	Lentil	Proso Millet	Spring Wheat	Sun-flower
Crop Residue	Buck-wheat	0	10	-12	-15	-2	8	5	4	-11	4
	Canola	8	0	20	10	0	18	11	10	-11	36
	Chick-pea	-6	1	0	29	6	26	-11	11	-7	41
	Corn	-2	2	-6	0	4	-6	5	-6	-18	29
	Dry Pea	32	5	36	36	0	31	20	25	6	51
	Grain Sorghum	-19	-4	-6	12	-5	0	-14	-4	-18	25
	Lentil	4	-2	21	30	14	34	0	16	1	40
	Proso Millet	-7	-1	31	21	24	-9	26	0	-10	44
	Spring Wheat	15	-4	39	29	22	23	43	6	0	51
	Sun-flower	-4	-11	-7	2	16	-2	-1	1	-18	0

Maximum in each column

Minimum in each column

Price Risk

2000-2006 year-to-year price variability



Price Data Sources: ¹USDA-NASS, ²USDA-AMS, ³Agriculture and Agri-Food Canada. Note: Buckwheat price data are Canadian average prices; grain sorghum and proso millet are South Dakota average prices; and chickpea are U.S. average prices.

Looking Ahead

- ◆ What is likely to be the most profitable crop this year?
- ◆ What is the likely impact of growing that crop on subsequent production?

Looking Ahead Example

- ◆ Field with Dry Pea residue
- ◆ Deciding between growing Proso Millet or Spring Wheat

Looking Ahead Example (cont'd.)

- ◆ What is likely to be the most profitable crop this year?

	Buck-wheat	Canola	Chick-pea	Corn	Dry Pea	Grain Sorghum	Lentil	Proso Millet	Spring Wheat	Sun-flower
Dry Pea	49	-36	-18	-26	-11	-10	15	27	21	-12

Short-term profitability shows a \$6/acre (\$27 - \$21) advantage to growing Proso Millet instead of Spring Wheat

Looking Ahead Example (cont'd.)

- ◆ What is the likely impact of growing Proso Millet versus Spring Wheat on subsequent production?

	Buck-wheat	Canola	Chick-pea	Corn	Dry Pea	Grain Sorghum	Lentil	Proso Millet	Spring Wheat	Sun-flower
Proso Millet	-7	-1	31	21	24	-9	26	0	-10	44
Spring Wheat	15	-4	39	29	22	23	43	6	0	51
Difference (Wheat - Millet)	23	-3	8	9	-2	31	17	6	10	7

Net returns for 8 of 10 subsequent crops would likely be higher following Spring Wheat than Proso Millet, and the net return advantage for these 8 crops is at least as great as the profit advantage of Proso Millet over Spring Wheat in the short-term (\$6/acre)

Other Economic Considerations

- ◆ Government programs
 - Effect of crop choice on current and future payments
- ◆ Crop Insurance
 - Availability and cost for some crops
- ◆ Marketing
 - Forward contracting
 - Futures and options

Summary

- ◆ Crop sequence can have a substantial impact on economic returns
- ◆ Cropping decisions should include both short-term and rotation effects on economic returns