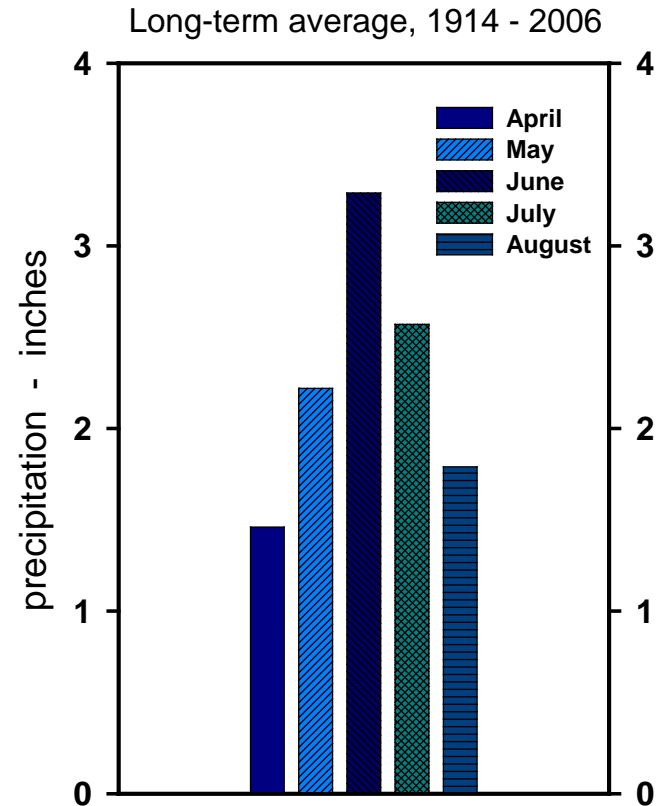
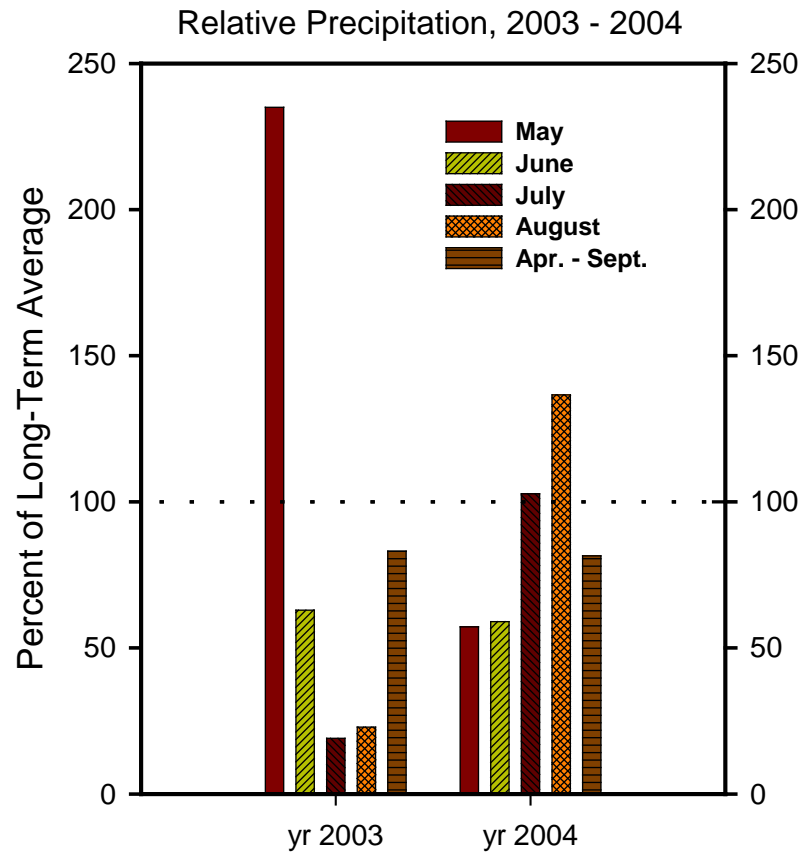


Crop Sequence Effects on Forages Production

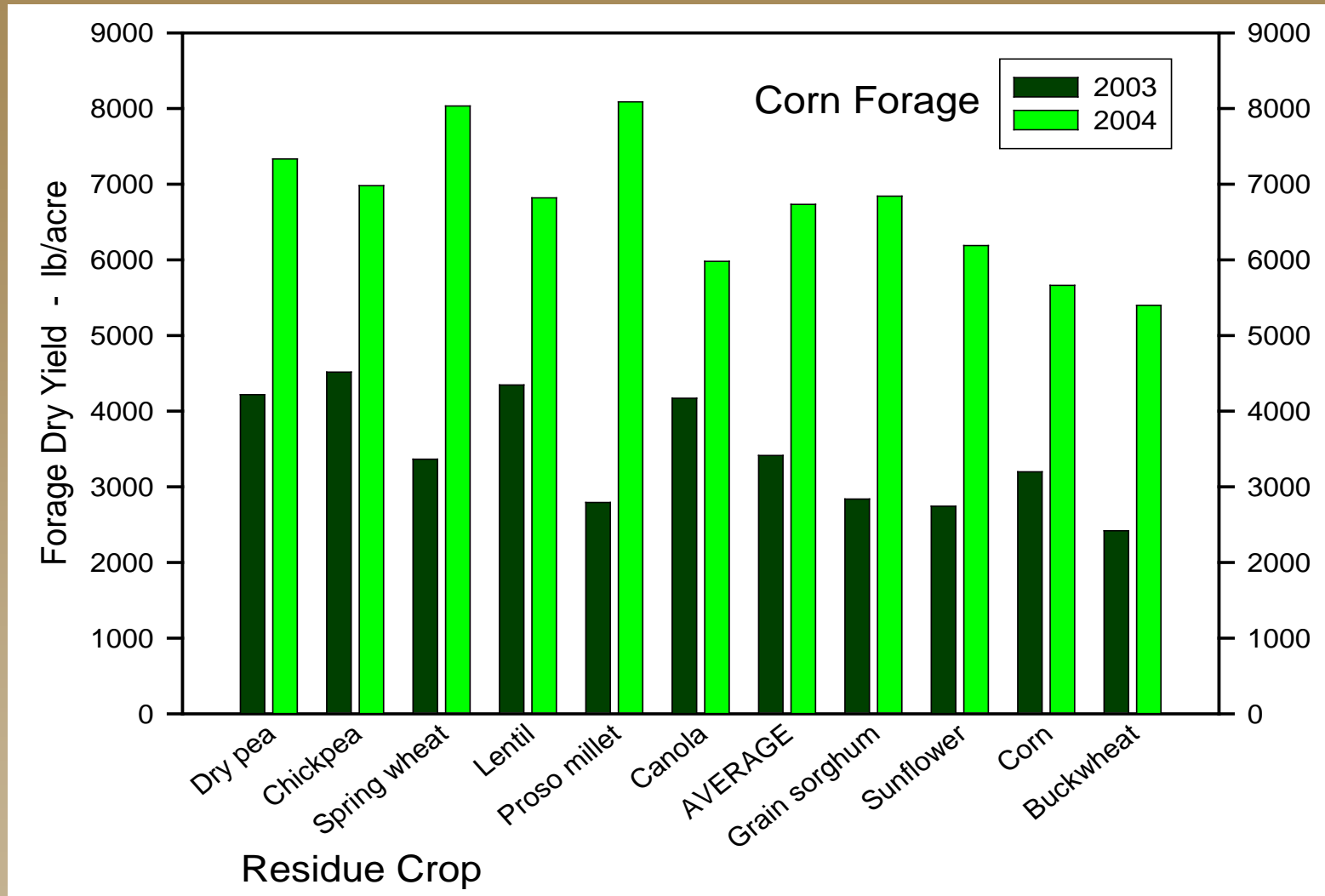
As part of our Phase III Crop Sequence Experiment, we have measured the forage production of three crops, corn, millet, and sorghum. We show here details of the effects of all 10 residue crops on forage production. Forage harvest samples were taken in late August and early September when crops had approximately 65% to 75% moisture content. The data shown are for dry forage weight.

Precipitation during 2003 and 2004 Seasons



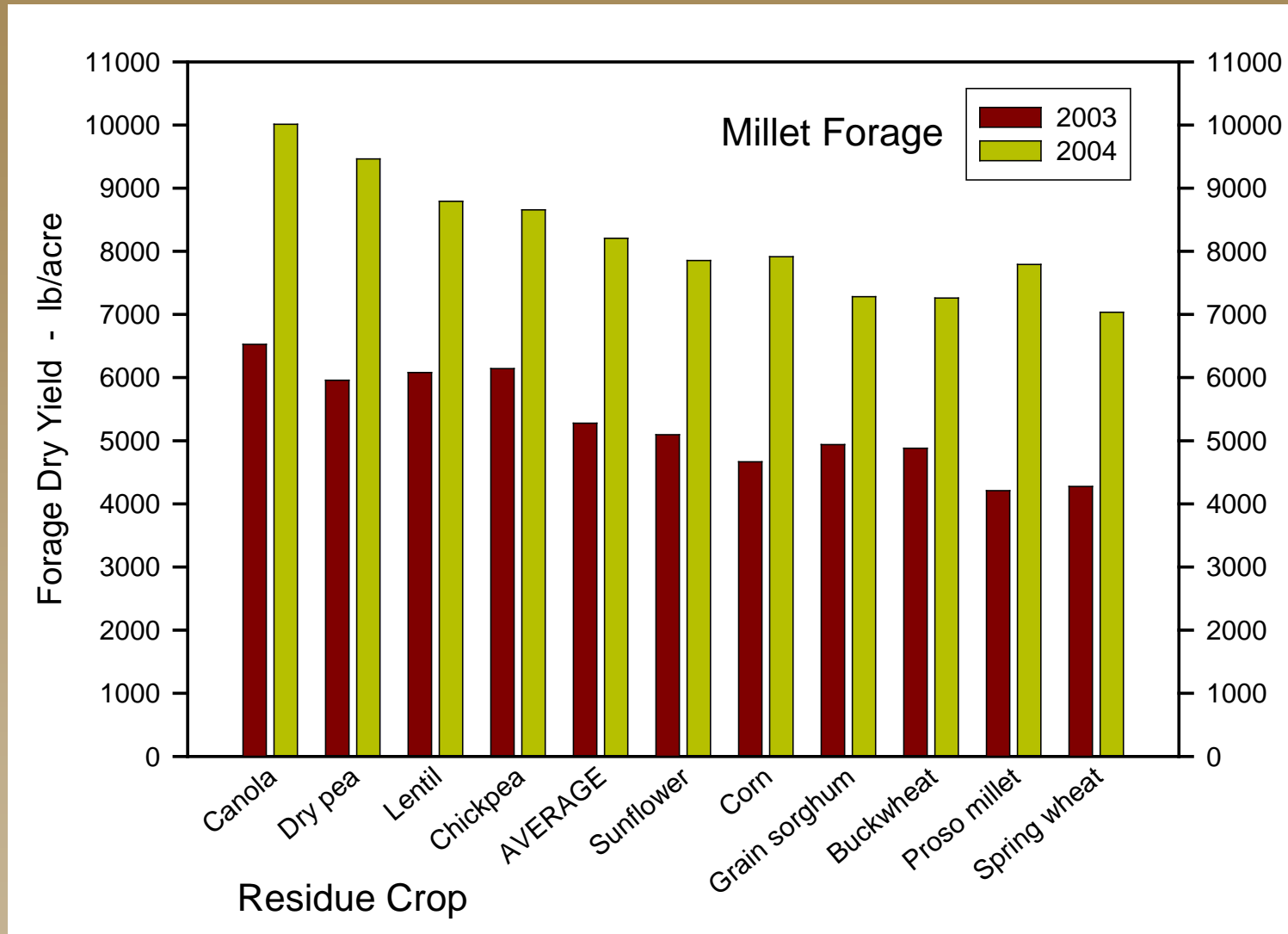
Precipitation during both 2003 and 2004 seasons was below average, but the distribution was considerably better in 2004 than in 2003, which had very high rain in May and quite low rain in July and August.

Corn Forage Production Ranked by 2-year Average Yields



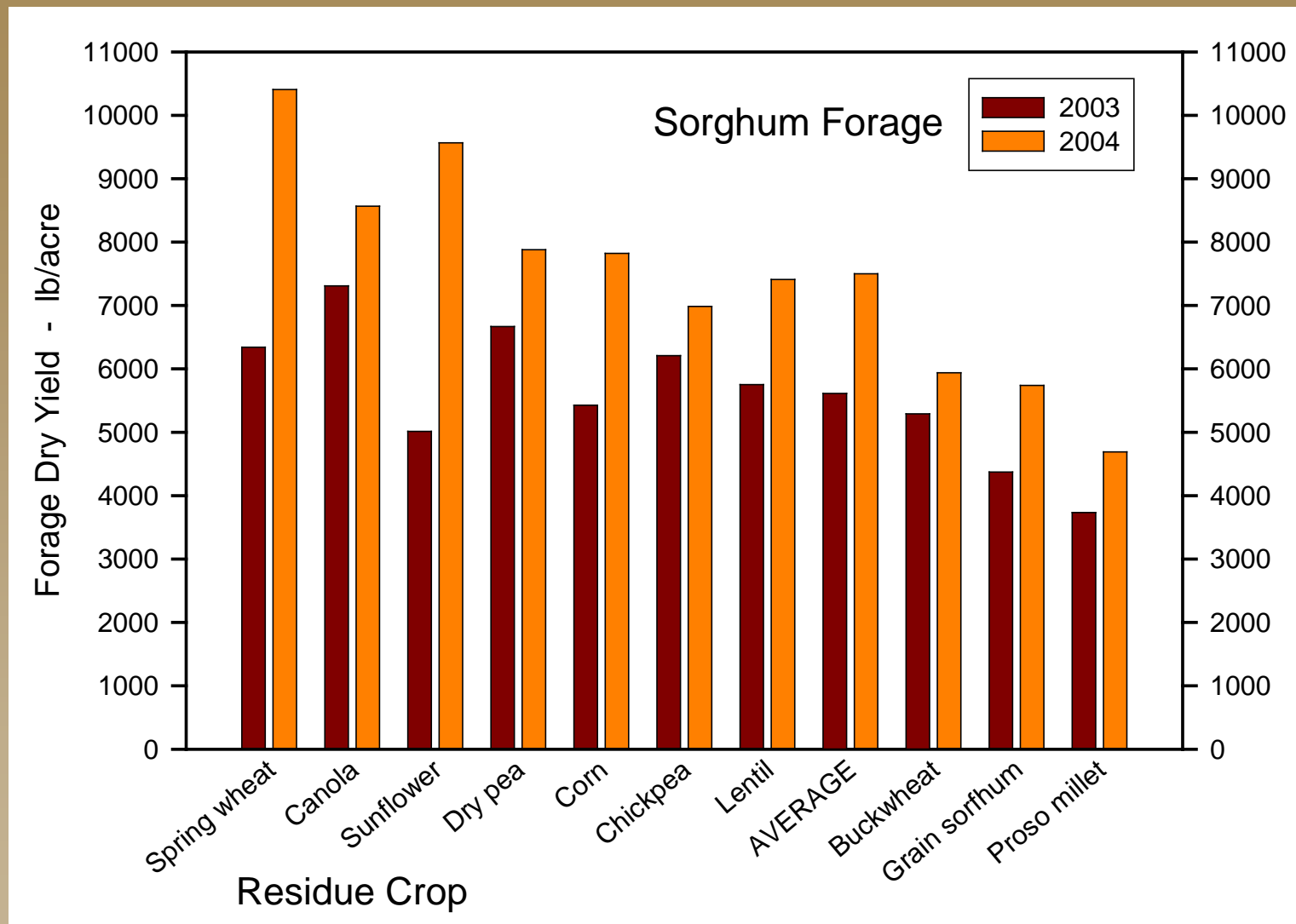
Dry pea led to the greatest corn forage production followed by chickpea and spring wheat while buckwheat led to the lowest forage production followed by corn and sunflower. Proso millet led to low forage production in 2003, but not in 2004. Corn was more affected by low and poorly distributed precipitation in 2003 compared with the other two forage crops.

Millet Forage Production Ranked by 2-year Average Yields



Canola led to the greatest millet forage production followed by dry pea and lentil while spring wheat led to the lowest forage production followed by proso millet and buckwheat.

Sorghum Forage Production Ranked by 2-year Average Yields



Spring wheat led to the greatest sorghum forage production followed by canola and sunflower while proso millet led to the lowest forage production followed by grain sorghum and buckwheat.

Summary of Crop Sequential Effects on Forage Production

CORN: **Highest production** following: **Dry pea**
2nd and 3rd highest following: Chickpea, Spring wheat

Lowest production following: **Buckwheat**
2nd and 3rd lowest following: Corn, Sunflower
Low production one year following: Proso millet

MILLET: **Highest production** following: **Canola**
2nd and 3rd highest following: Dry pea, Lentil

Lowest production following: **Spring wheat**
2nd and 3rd lowest following: Proso millet, Buckwheat

SORGHUM: **Highest production** following: **Spring wheat**
2nd and 3rd highest following: Canola, Sunflower

Lowest production following: **Proso millet**
2nd and 3rd lowest following: Grain sorghum, Buckwheat

Rank of Residue Crops' Effects on Forage Production Compared with Rank of Springtime Soil Water Amounts

Rank highest (1) lowest (10)	Spring soil water amount	Forage Production		
		CORN	MILLET	SORGHUM
1	Dry pea	Dry pea	Canola	Spring wheat
2	Spring wheat	Chickpea	Dry pea	Canola
3	Lentil	Spring wheat	Lentil	Sunflower
4	Proso millet	Lentil	Chickpea	Dry pea
5	Buckwheat	Proso millet	Sunflower	Corn
6	Canola	Canola	Corn	Chickpea
7	Grain sorghum	Grain sorghum	Grain sorghum	Lentil
8	Corn	Sunflower	Buckwheat	Buckwheat
9	Chickpea	Corn	Proso millet	Grain sorghum
10	Sunflower	Buckwheat	Spring wheat	Proso millet

Higher water use leads to lower springtime soil water and vice versa. For corn forage production, crops with higher spring soil water (blue) tend to lead to higher yields, and crops with low spring soil water (red) tend to lead to lower forage yields. Millet and sorghum are less sensitive to soil water than corn, and residue crops' effects on forage production in these two crops appear to be more linked to weed and disease effects compared with corn.