

Yield Potential of Emergency Forage Crop Options for the North Central USA

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MATERIALS & METHODS

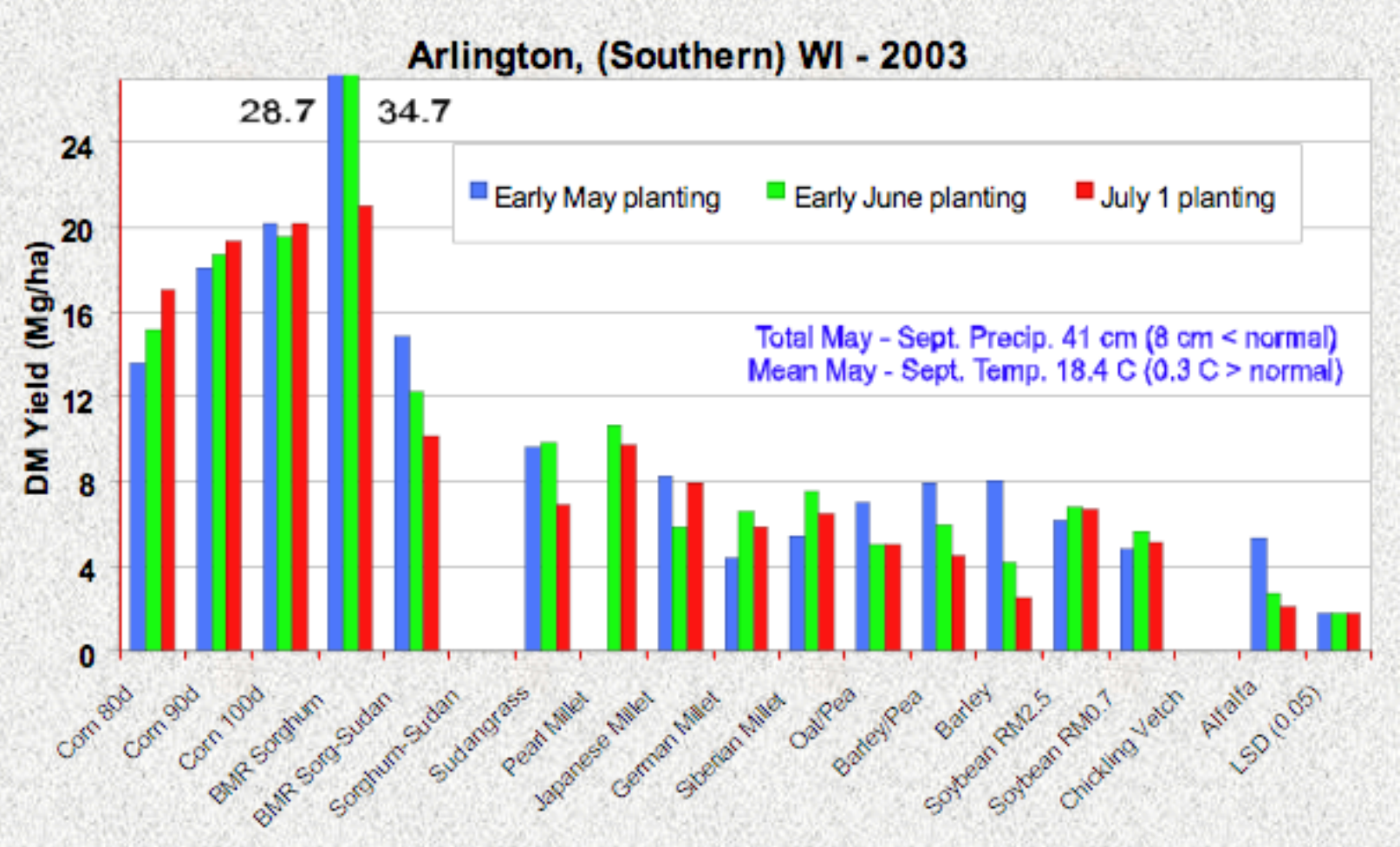
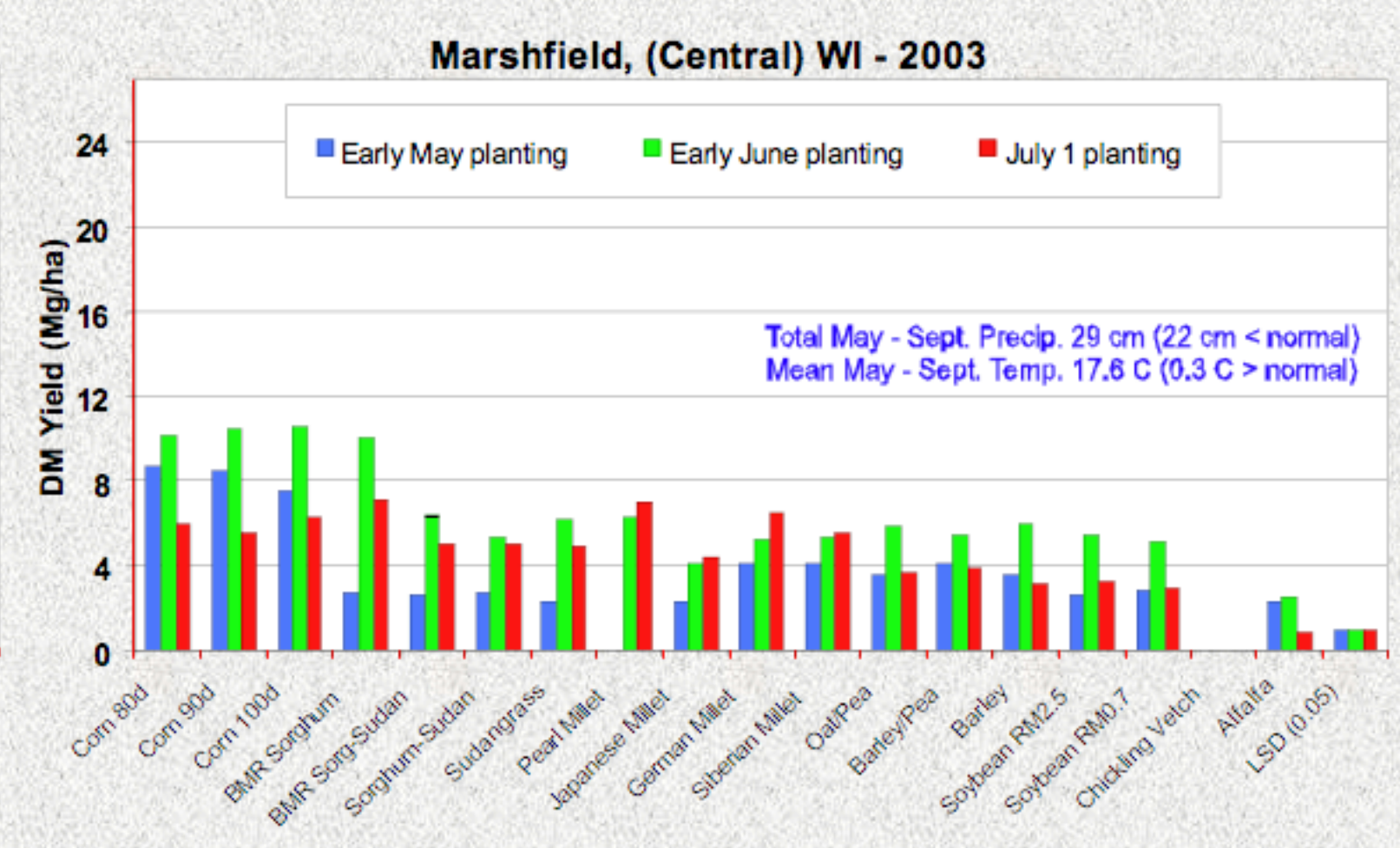
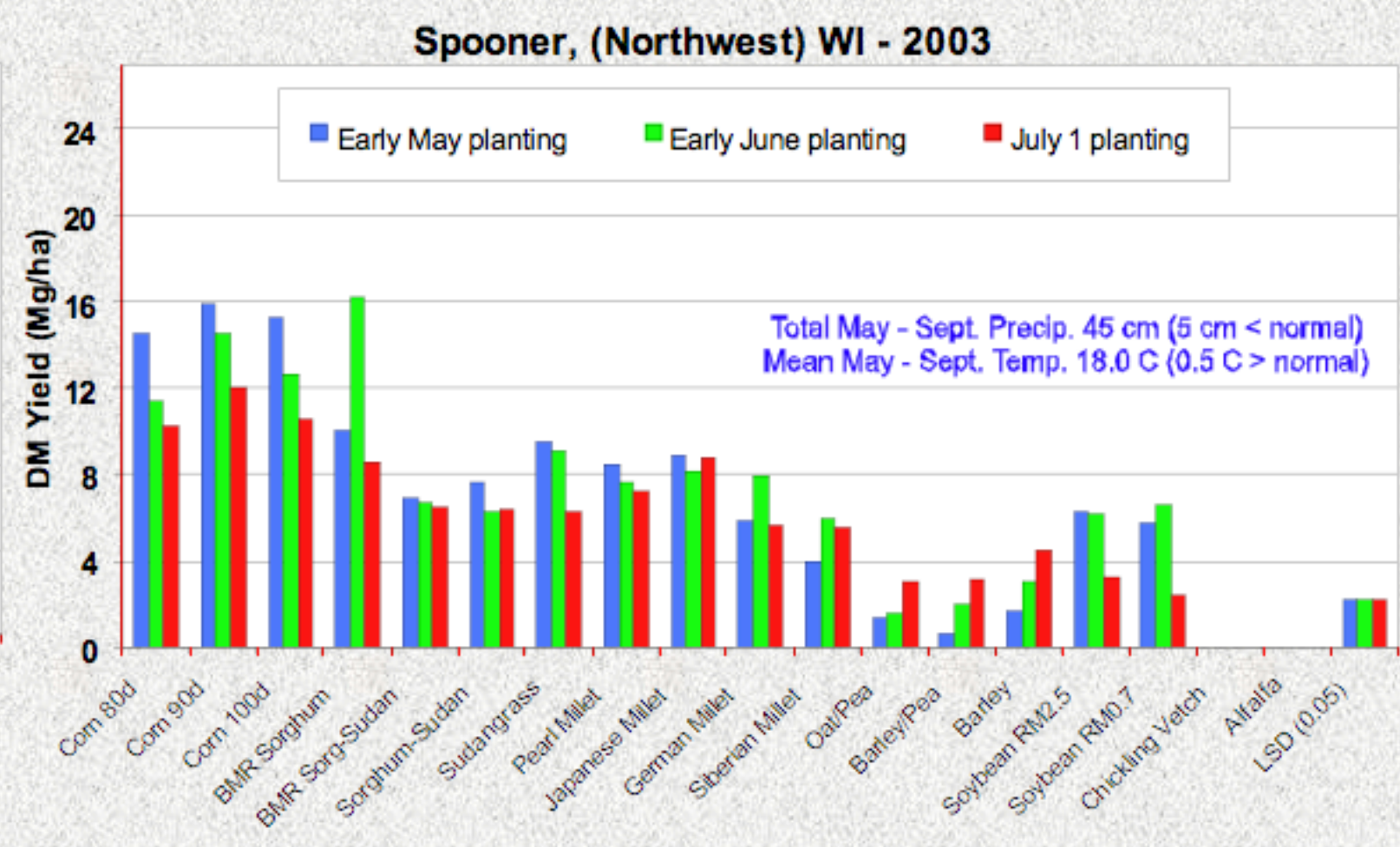
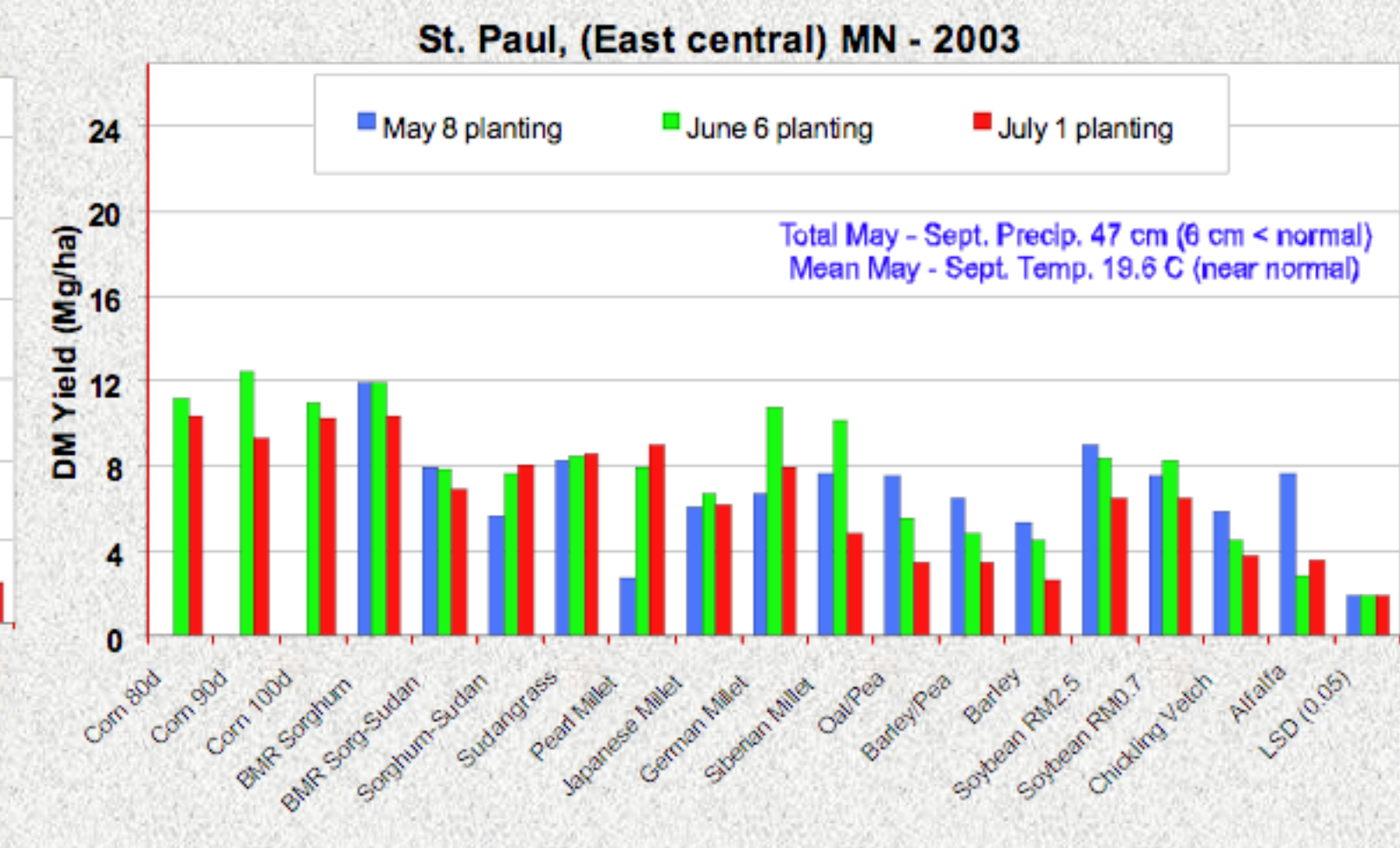
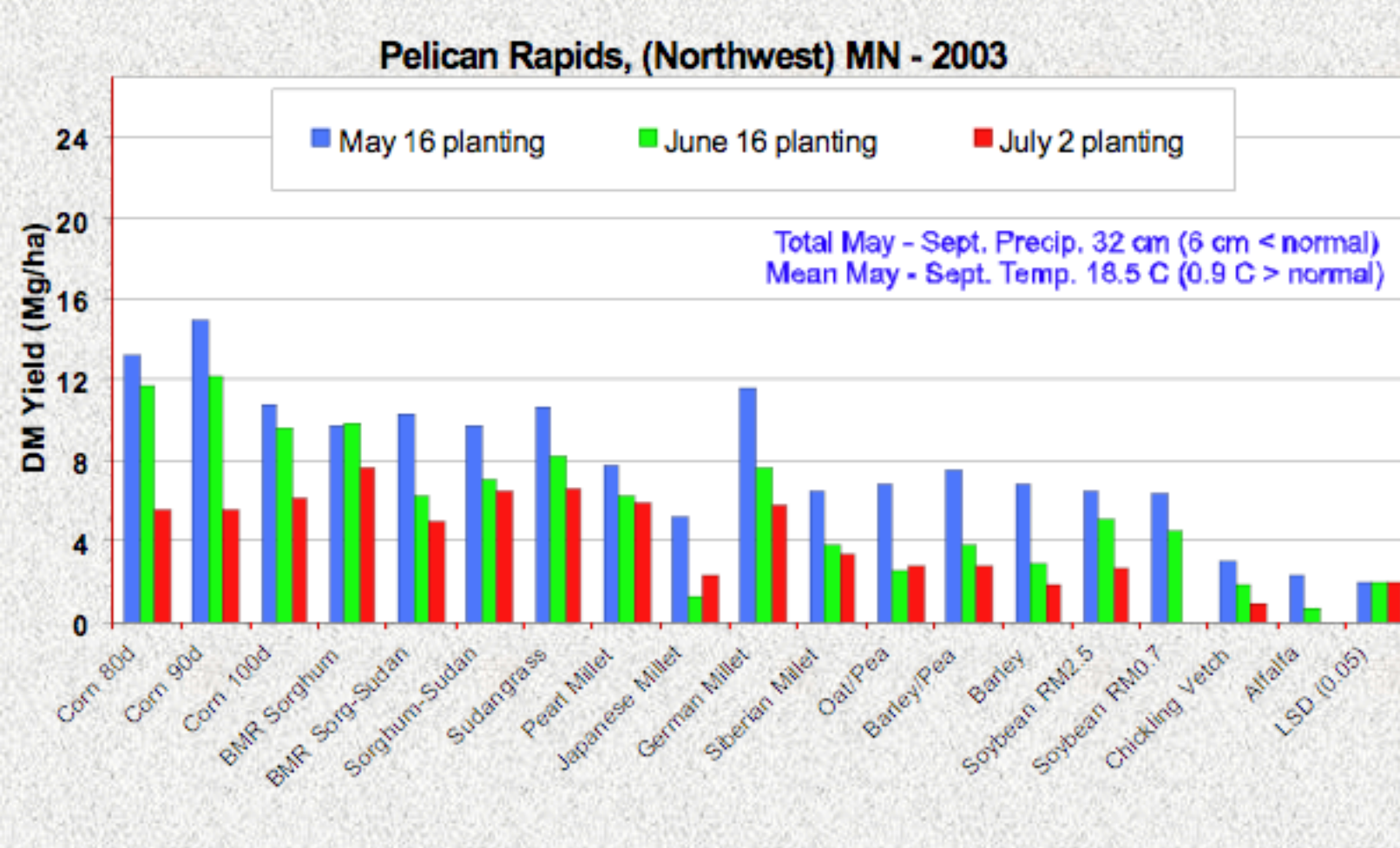
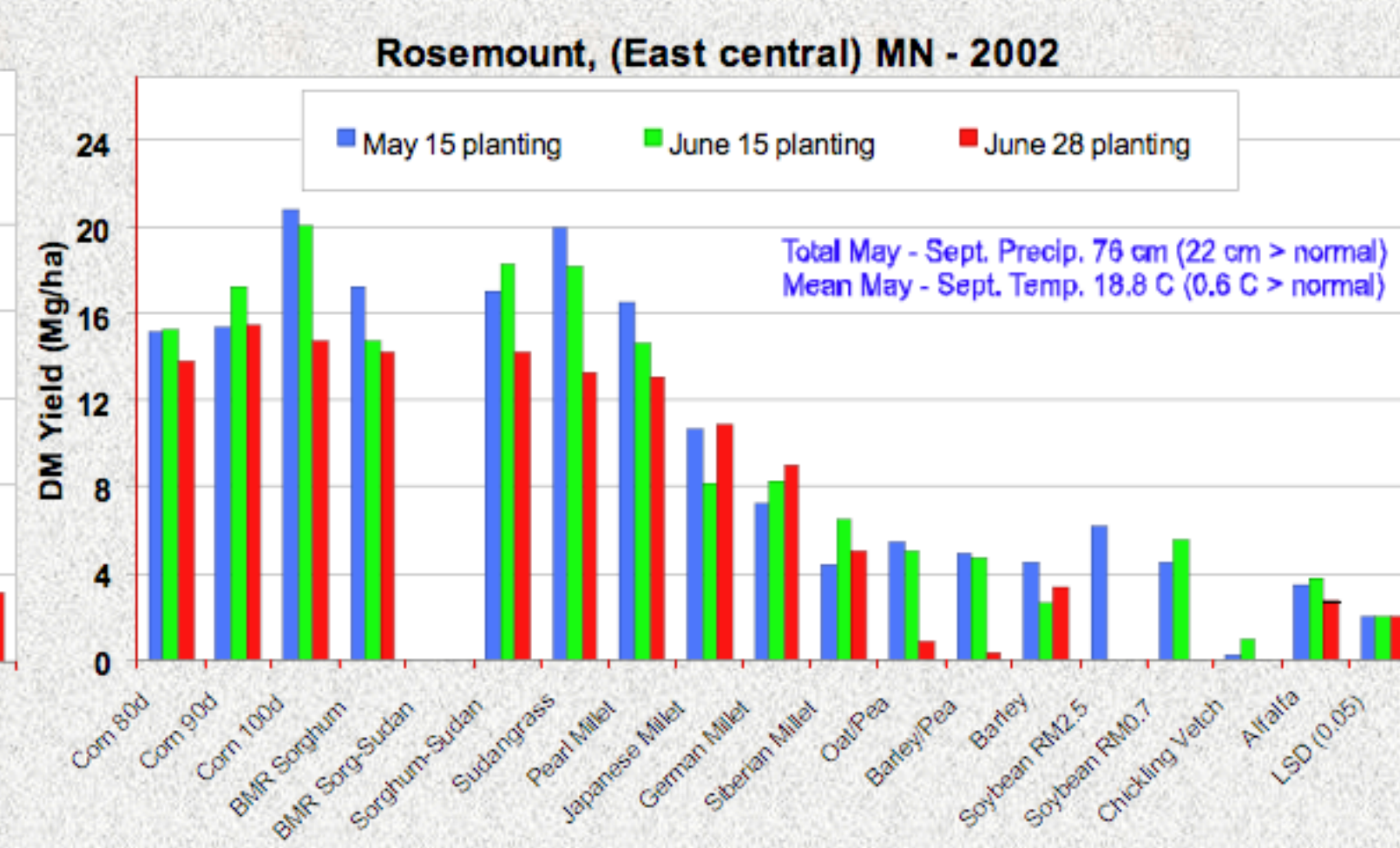
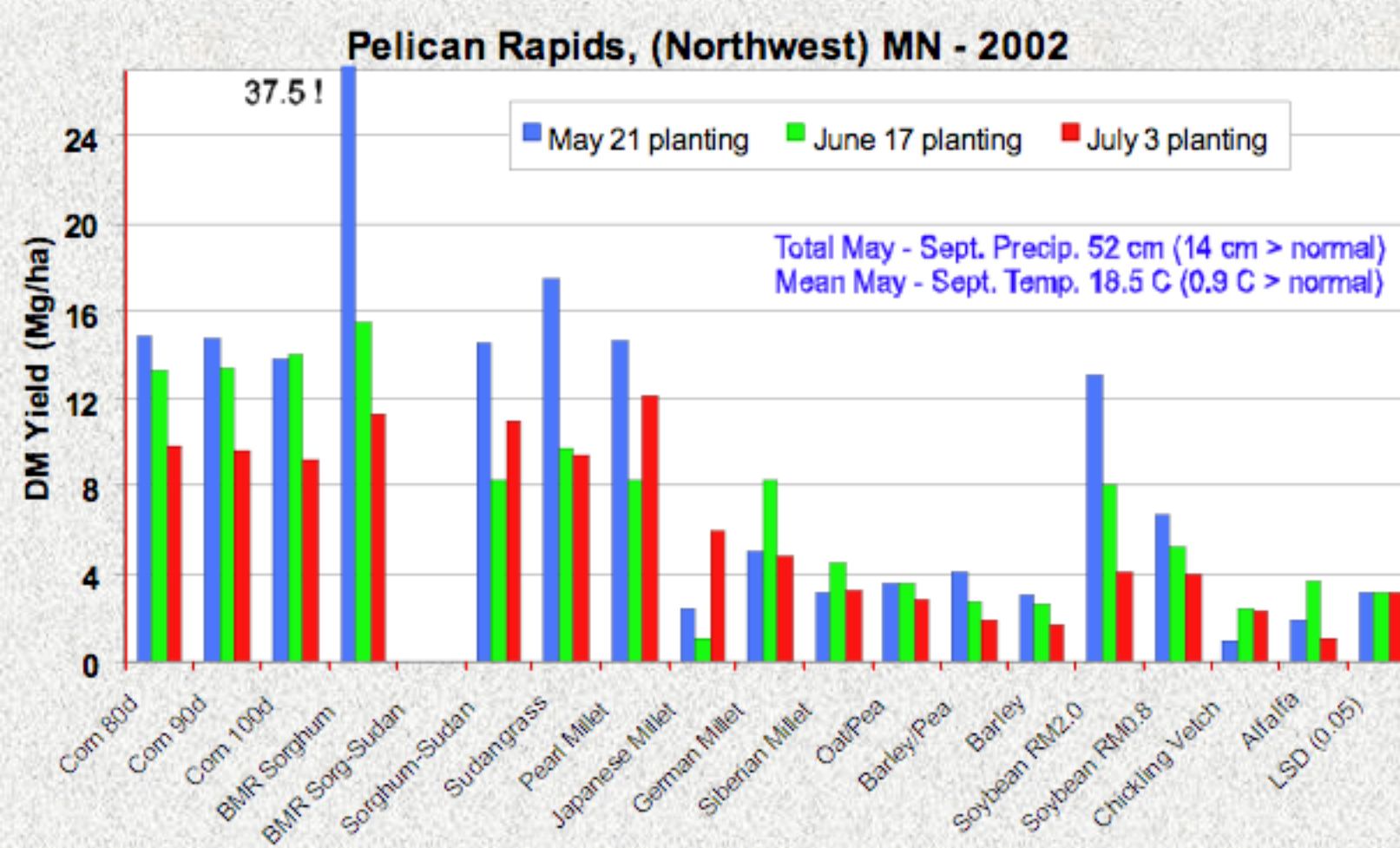
- 11 environments including 3 years and 7 sites across Minnesota, Wisconsin, and Michigan
- 3 planting dates (PD): Early May, Early June, and ~ July 1
- 3 replications nested within planting dates

Crop Type	Crop Species	Seeding Rate	N Fert. (P and K high)	Harvest Target	Harvests per Year
"Tall", 1-cut	Corn, 80 -85 d Corn, 90 -95 d Corn, 100 -105 d	80,000 seeds/ha in ~0.85 m rows	170 kg N/ha	- milk or 65% moisture	1
	BMR Forage Sorghum	11 kg/ha in ~0.85 m rows		Soft dough or 65% moisture	
"Tall", Multi-cut	Sudangrass Sorghum-Sudan Japanese Millet Pearl Millet	28 kg/ha in ~0.18 m rows	55 kg/ha/cutting (55-165 kg N/ha/yr)	90 cm to 15 cm residual, last harvest to 7cm	May PD 2 -3 June PD 2 -3 July PD 1 -2
"Short", 1-cut	German Foxtail Millet Siberian Foxtail Millet Soybean RM0.7 -0.8 Soybean RM2.0 -2.5	28 kg/ha 110 kg/ha	110 kg/ha	Late Boot - Early Heading R6.5	1
	Oat/Pea Barley/Pea Barley	140 kg/ha 90 kg/hg	0 110 kg/ha	Early Milk Late Boot	
	Alfalfa Chickling Vetch	17 kg/ha 65 kg/ha	0	60 d after emergence, then every 30 d	

RATIONALE & OBJECTIVE

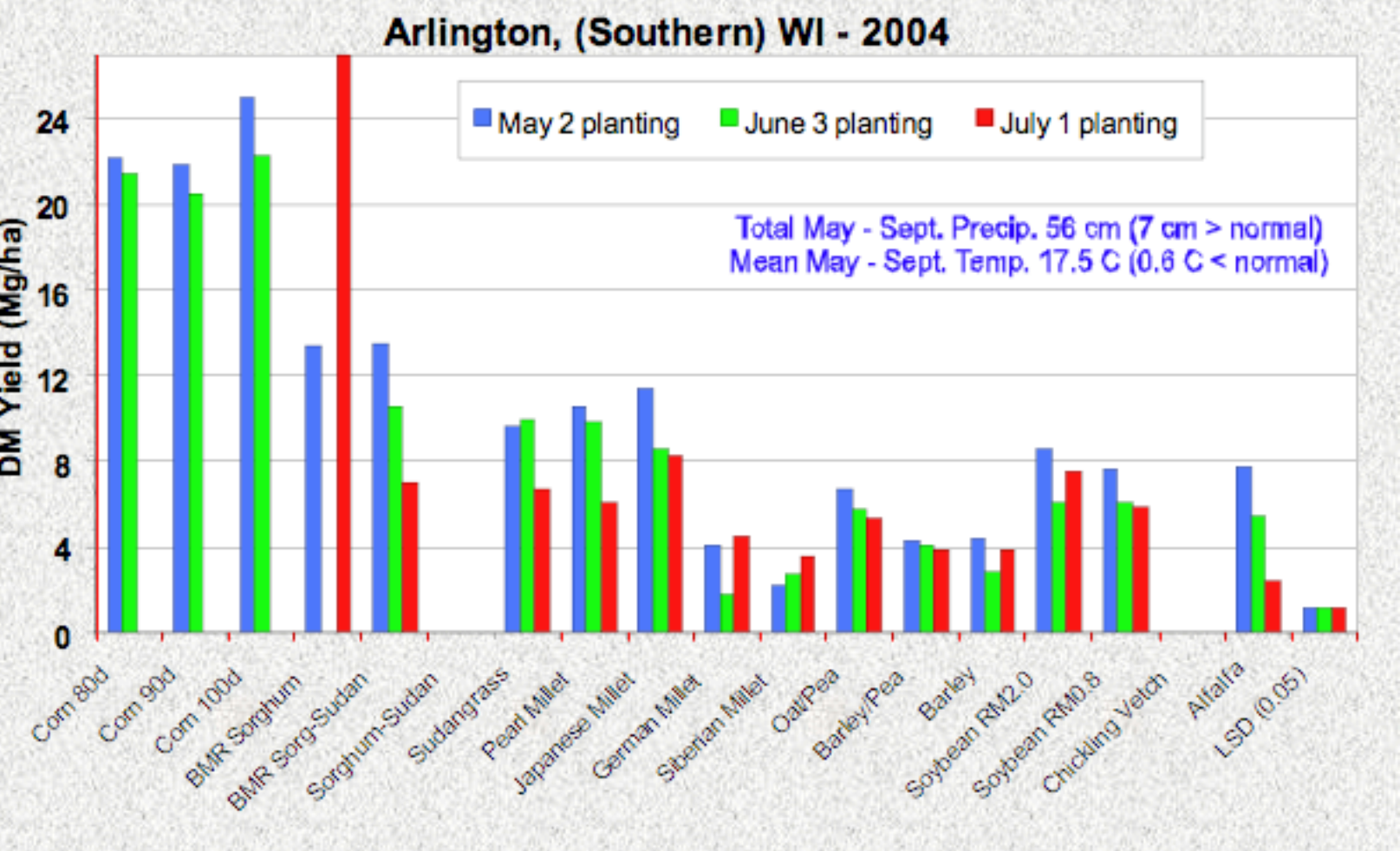
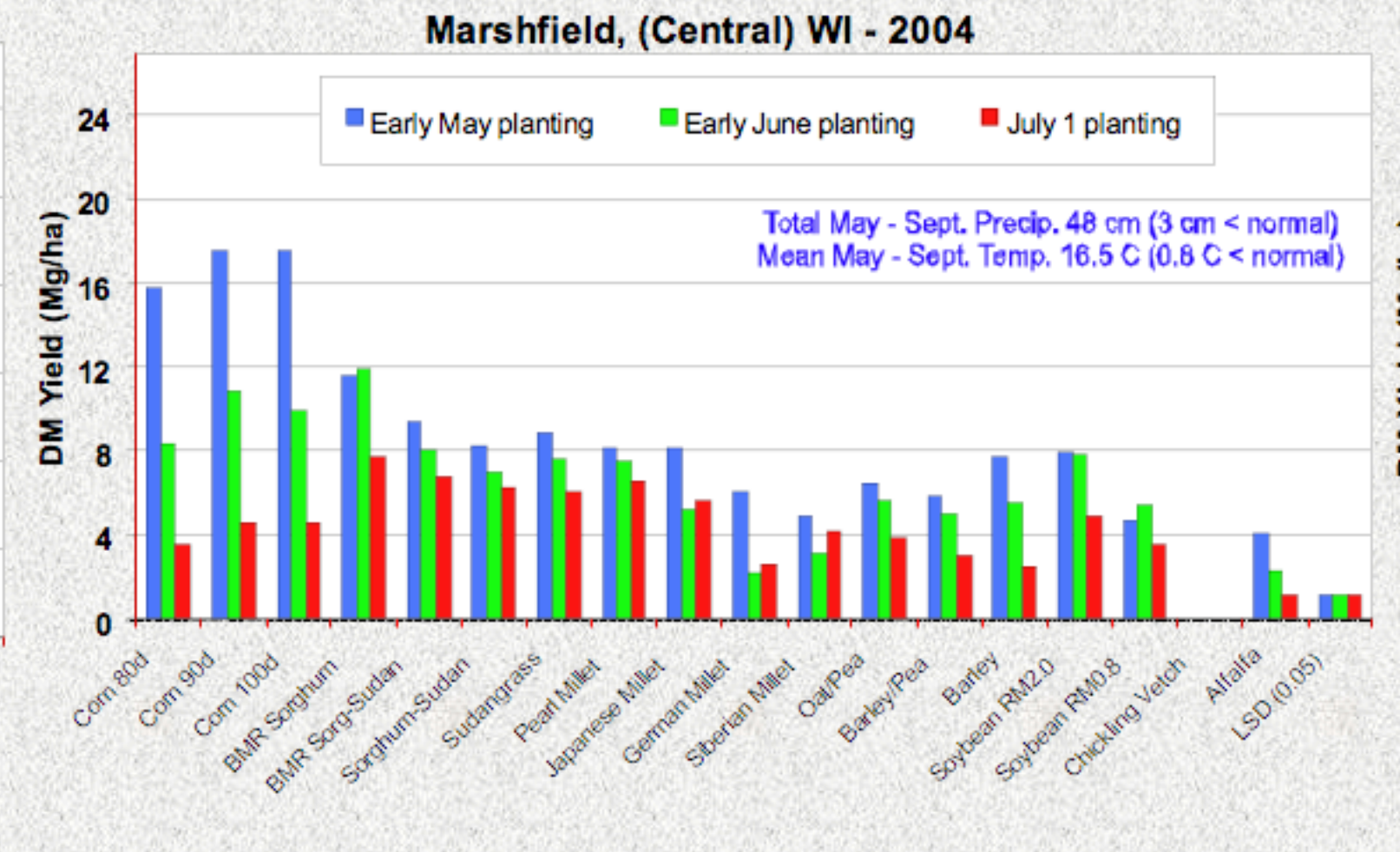
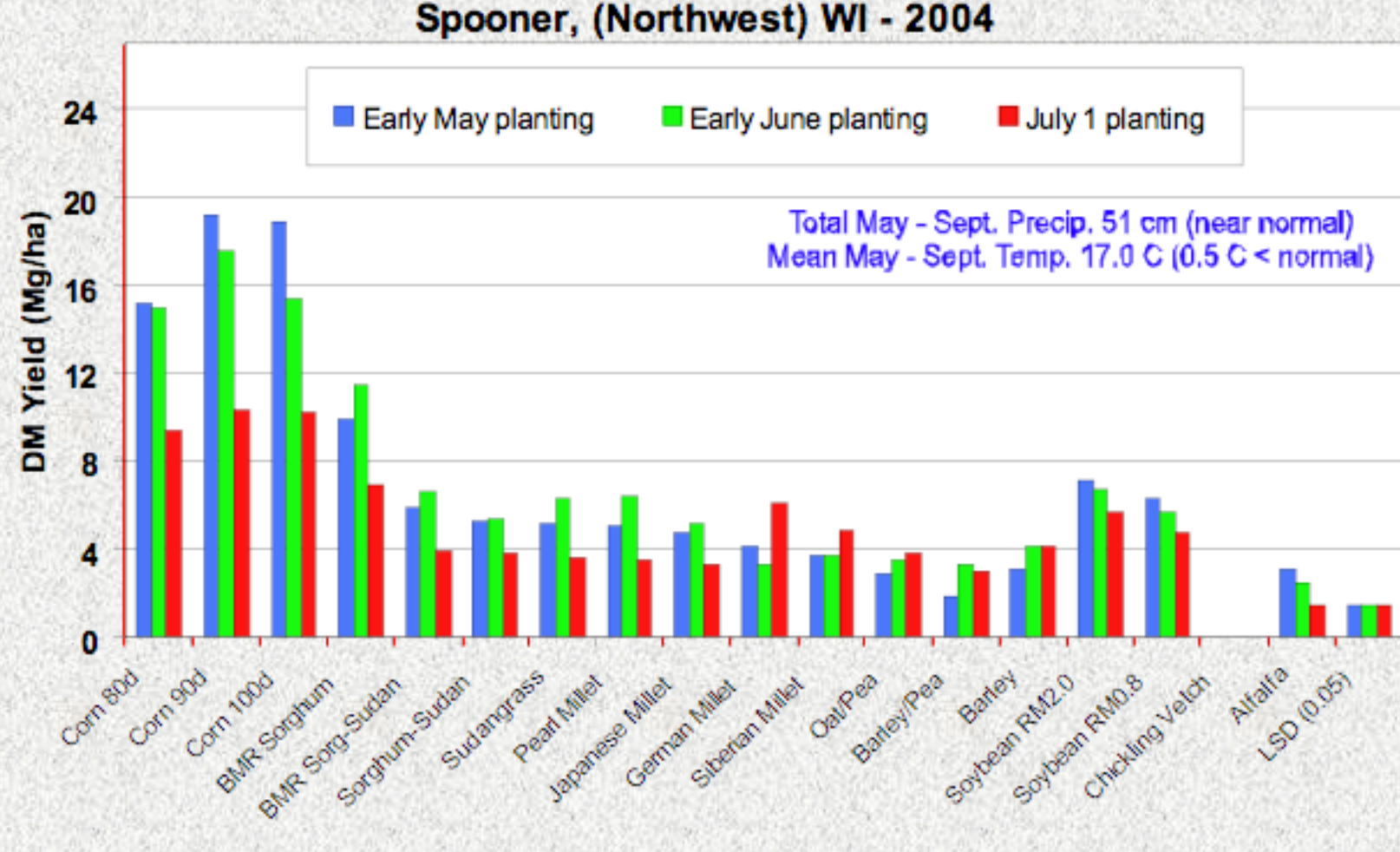
Alfalfa winterkill and wet springs that delay planting often create a need for emergency forage crops in the North Central USA. Comprehensive comparisons of crop options are lacking.

We compared the emergency forage yield potential of different cool- and warm-season annual crop options as influenced by spring-summer planting date.



RESULTS & CONCLUSIONS

- Corn for silage was usually among the highest yielding options for all planting dates and environments.
- One-cut BMR forage sorghum at times produced the highest DM yields of all options, but was inconsistent and often failed to reach the target harvest maturity and moisture.
- Sorghum-sudan, sudangrass, and pearl millet produced good total season yields from 3 harvests for early May planting, and from 1 to 2 harvests for July 1 planting; their total season DM yields occasionally matched those for corn.
- Small grains with or without pea produced low yields when planted July 1.
- Foxtail millets harvested once at late boot to early heading produced consistently good stands and yields within ~60 days after planting.
- Soybean produced forage yields similar to foxtail millets, but required more days.
- The optimum crop to plant for emergency forage varies with when and how it will be utilized, the forage quality needed, and seed availability and cost.



Acknowledgements: Thanks to the North Central Region SARE Producer Grant Program, the MN Dept. of Agriculture Sustainable Agriculture Demonstration Grant Program, Agassiz Seed, Croplan Genetics, Mycogen Seeds, and Olds Seed Solutions for supporting this research.