Planting Considerations for the Southeast

Planter Clinic

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Promote High Yields

- Soil fertility and pH
- Manage compaction e.g. non-inversion tillage
- Quality seed
- Timely Planting
- Stand establishment

→ Optimize Planter Performance

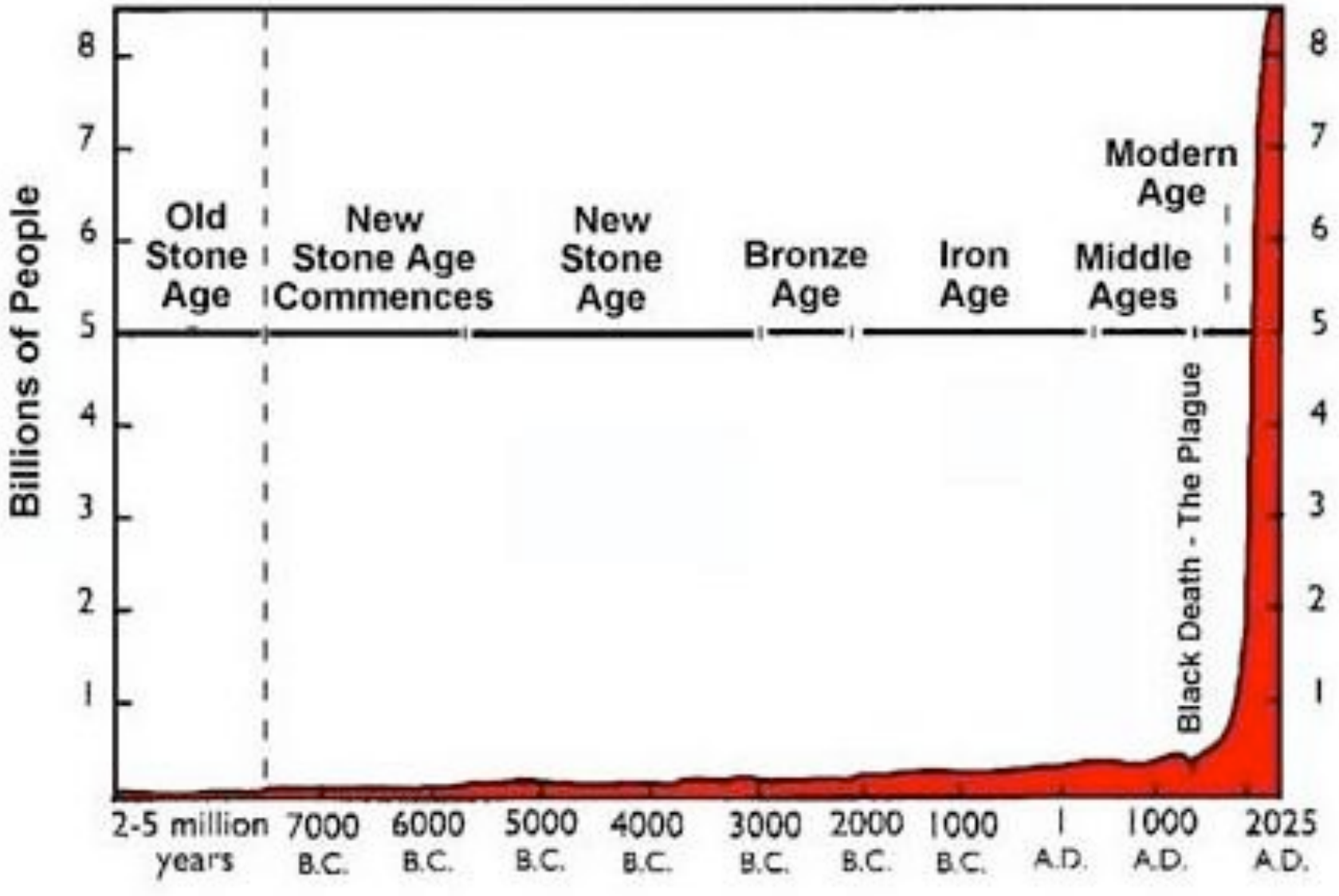
Maximizing biomass is the most important factor determining whether a cover crop is cost-effective or not. Low amounts of biomass provides limited protection against runoff and erosion and does not shade the soil sufficiently to inhibit weed growth or decrease evaporation from the soil surface. For legumes, low biomass production results in limited nitrogen additions to the soil.

•Factors important for maximizing biomass production in cover crops are similar to those important for enhancing yield in crops grown for sale. These factors include proper soil fertility, good quality seed, and proper inoculation with rhizobia for legumes.

•Planting a cover crop early and waiting until it reaches full growth to terminate it back ensures that the cover crop provides the maximum biomass. High biomass production by leguminous cover crops provides optimal nitrogen fixation. For all cover crops, high biomass production provides a heavy mulch residue for extended weed control and moisture retention. It also maximizes the amount of nutrients available for decomposition and eventual uptake by crop plants.

In normal years, high biomass provides the most benefits; however you will want to modify your management in dry years and terminate earlier, so that the cover crop does not deplete water needed by the primary crop.

World Population Growth Through History



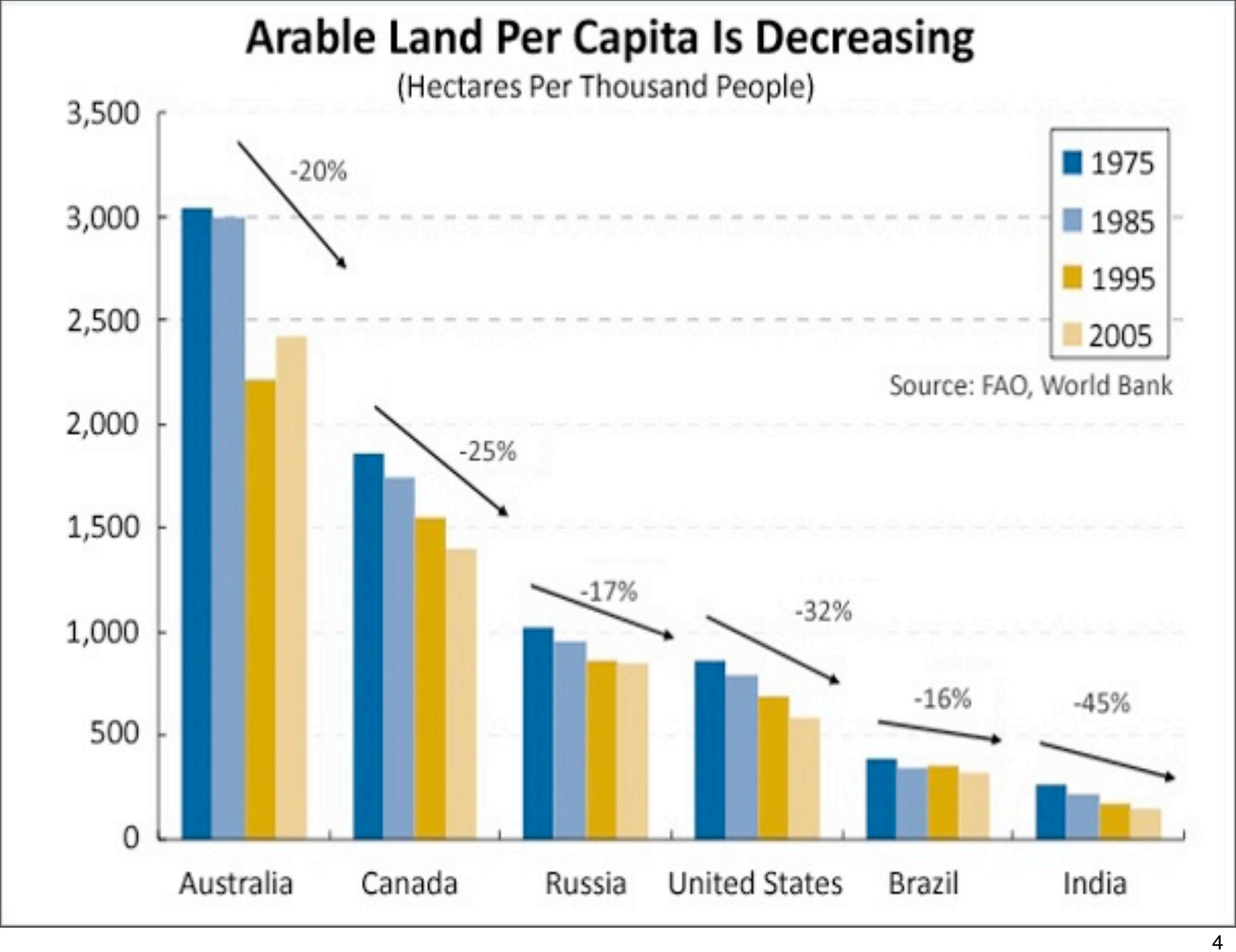
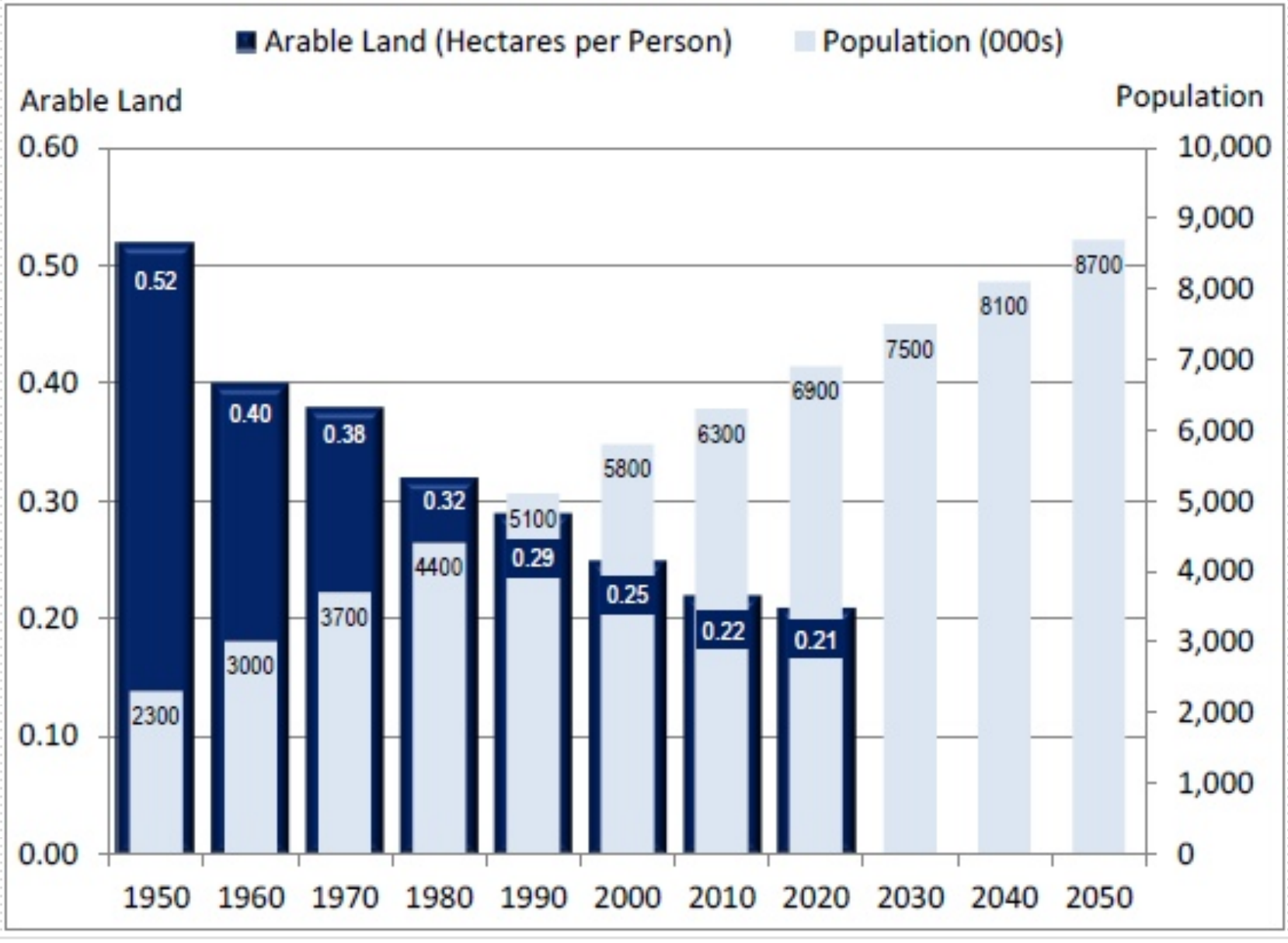

Arable Land Per Capita Is Decreasing
(Hectares Per Thousand People)
3,500
3,000
2,500
2,000
1,500
1,000
500
0
-20%
-25%
-17%
-32%
-16%
-45%
1975
1985
1995
2005
Source: FAO, World Bank
Australia
Canada
Russia
United States
Brazil
India

Exhibit 6 – World Population versus Arable Land



Source: http://www.frasermackenzie.com/newresearch/POTASH_COMPENDIUM/FINAL_RPT_POTASH_Prattas_191211.pdf

Planting Considerations

- Planting Date
- Soil Temperature
- Row Spacing/Pattern
- Planting Rate
- Variety Selection
- Equipment Modifications

•Cover cropping needs to be managed as an integrated system, starting with the careful selection of a cover crop that provides the desired benefits for the production of the following primary crop. Then, the cover crop needs to be managed as any other crop to ensure that it grows productively and produces maximum biomass, or if the cover crop is a legume, fixes the maximum amount of nitrogen.

•The method used to terminate a cover crop can influence the ease of planting into the cover crop. Of course, organic farmers will need to use a mechanical means of terminating the cover crop, such as a row crimper, rather than using herbicides.

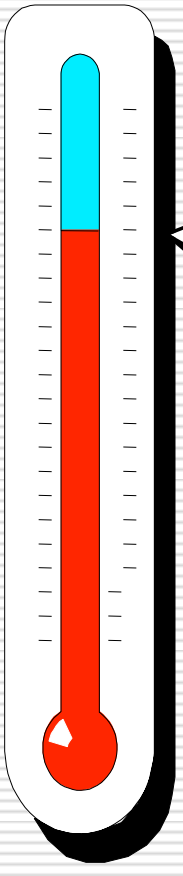
•Providing the correct timing between cover crop terminating and planting the primary crop is critical for pest and disease management as well as for ensuring optimal linkage or synchrony between cover crop mineralization and nutrient uptake by the primary crop.

• Finally, special equipment must be used to plant into the biomass of a cover crop. This equipment will be discussed in detail later.

Soil Temperature-constraints…

Cooler, Wetter Soils

Manage constraints . . .



65 °F @ 8:00 a.m.

Ripper Modification

- ✓ Row Cleaners

Planter Attachments

- ✓ Row cleaners

Row Pattern/Widths

Standard

Narrow

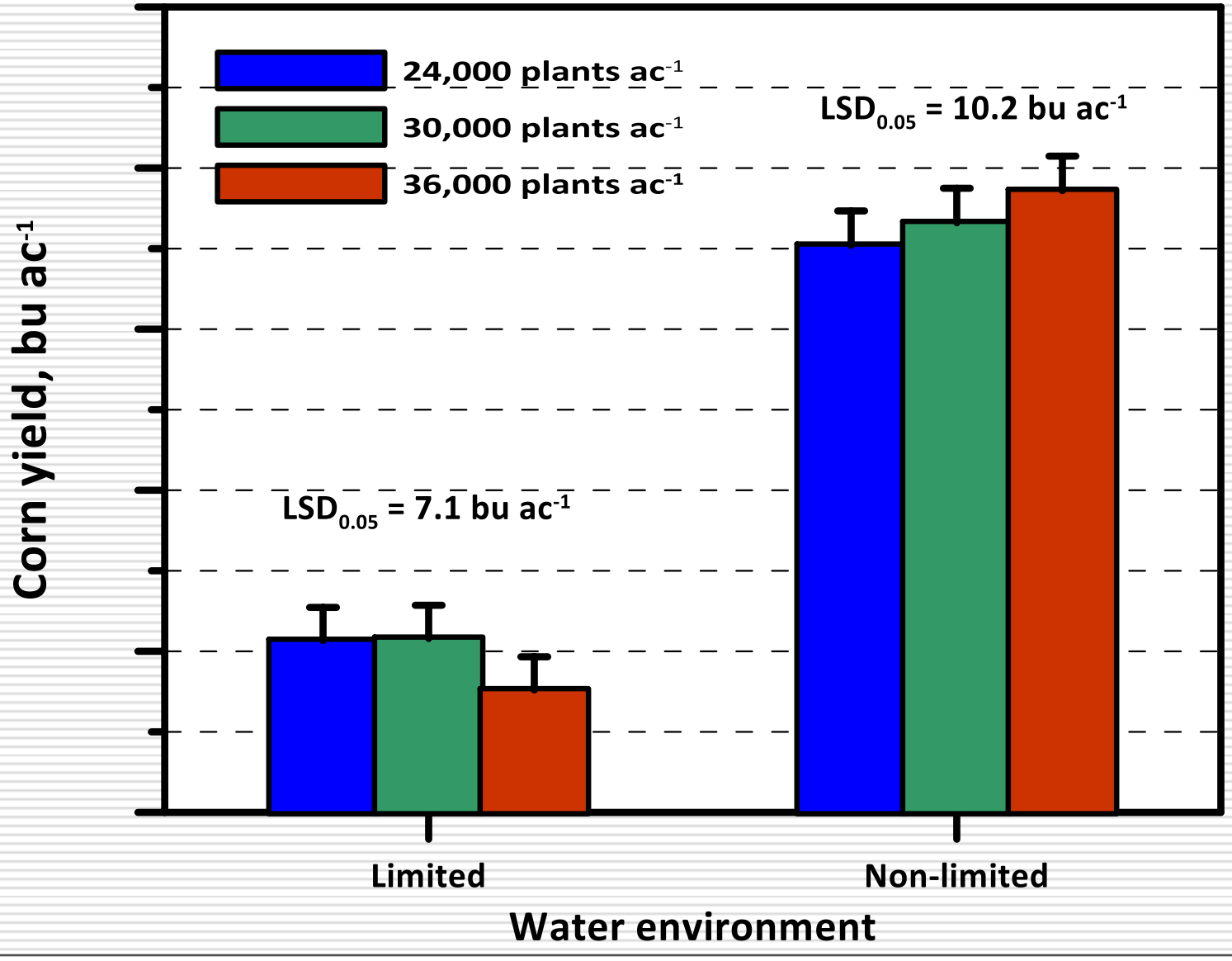
Pros

- Faster canopy closure
- Efficient moisture utilization
- Improved light interception

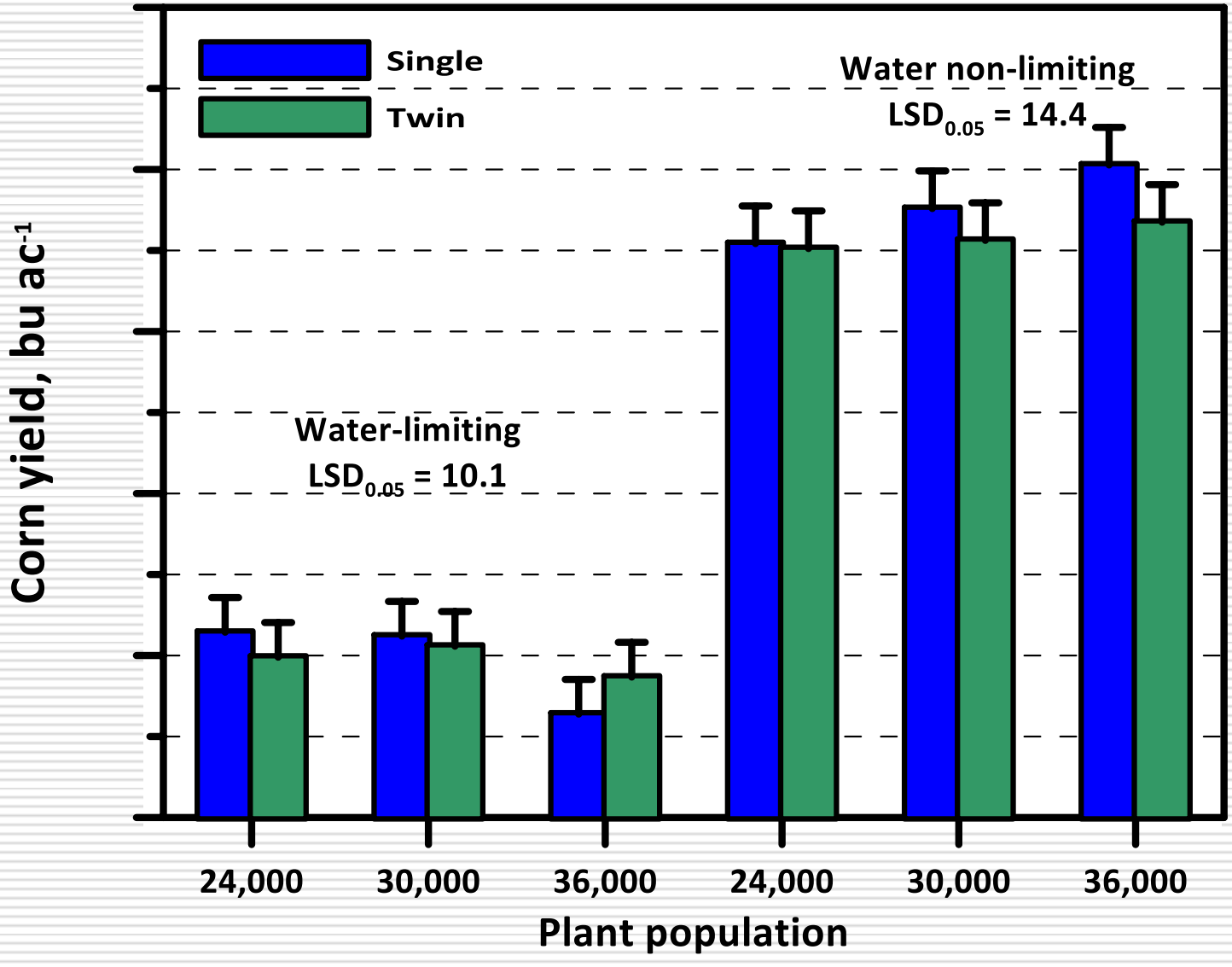
Cons

- Increased seeding costs
- Costly equipment modifications

Corn Populations



Populations x Row Patterns



Variable Rate Seeding

Variety Considerations

- Conventional vs. Herbicide Resistant

Conventional

Bollgard II/ Roundup Ready®

Roundup Ready Flex®

Bollgard II/ Roundup Ready Flex®

- Maturity

- Seed sizes

Photo courtesy Marshall Lamb, NPRL

Variety Considerations

Large-Seeded Runners (less than 700 seed/lb)

Cultivar	# seed/lb	Lb/ac (6 SPF)
Tifguard	657	133
Florida 07	660	132
Georgia 06G	661	132
Georgia 07W	673	129
TUFRunner™ '727'	674	129

Medium Seeded Runners (700-800 seed/lb)

Cultivar	# seed/lb	Lb/ac (6 SPF)
Georgia Greener	709	123
Georgia-10T	714	122
Georgia-09B	725	120
Georgia-12Y	727	120
FloRun™ '107'	770	113

Small Seeded Runners (800+ seed/lb)

Cultivar	# seed/lb	Lb/ac (6 SPF)
Georgia Green	796*	109

Data courtesy Scott Tubbs, UGA

Seed to Soil Contact

Planter Attachments

- ✓ V-slice inserts, Seed firmers

Planter Attachments

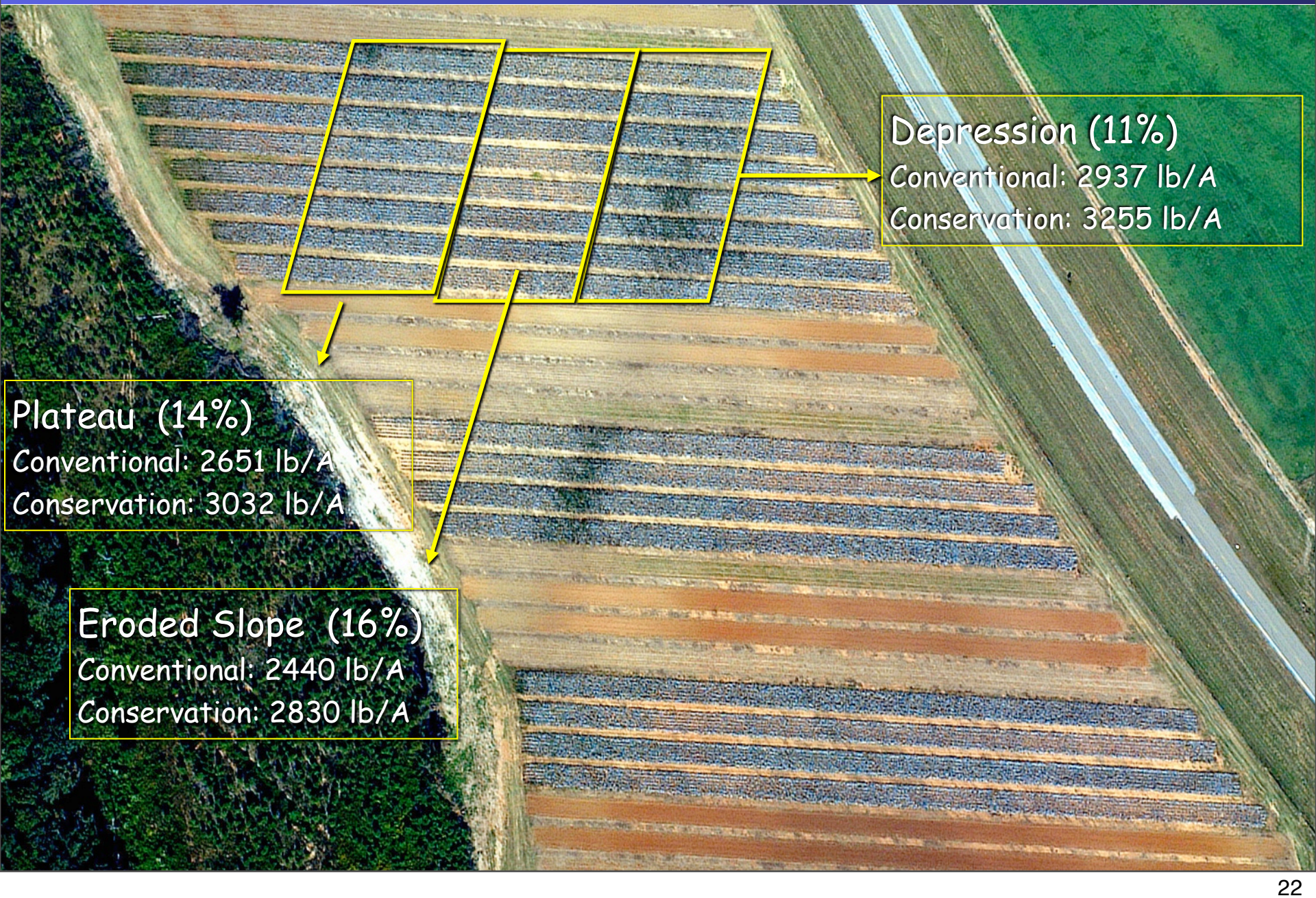
- ✓ Down pressure springs

Planter Attachments

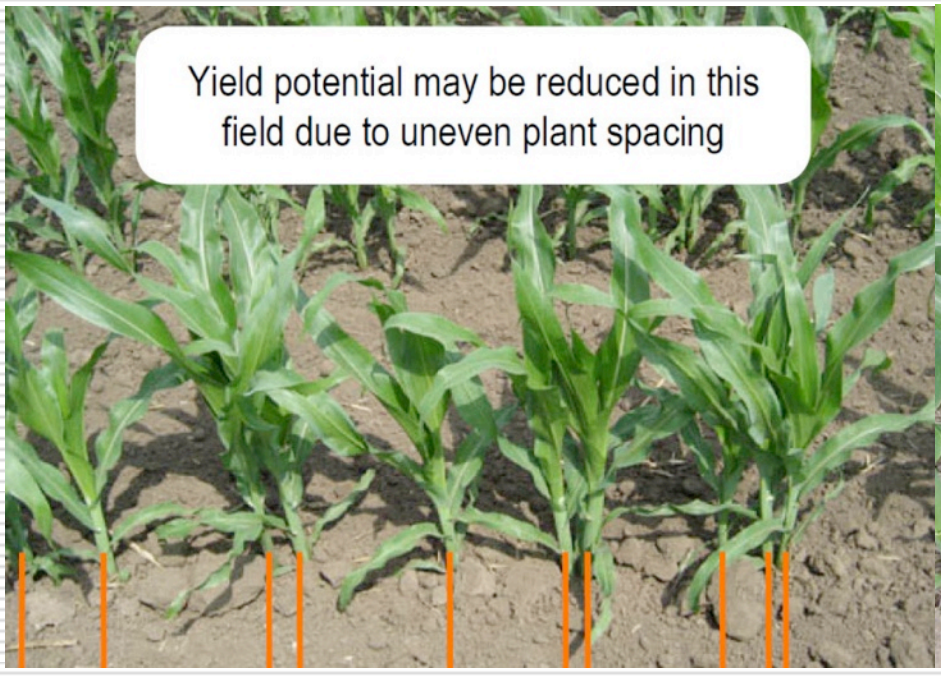
- Closing wheels

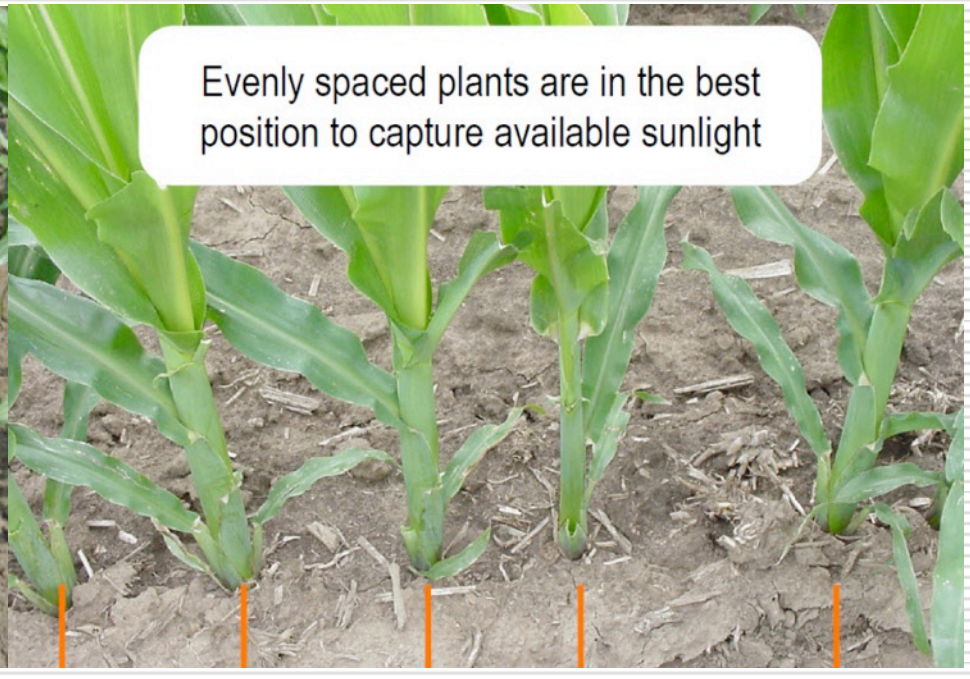
Uniform Emergence

Yield Variability



Optimal Plant Spacing





Photos courtesy Pioneer.com

Final Thoughts

- Improve efficiency.
- Become familiar with new technology, but don't neglect little things.
- Maximize every opportunity to ensure success.