

Chemical Topping of Burley Tobacco



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Topping Burley Tobacco

- Improves burley properties
 - Promotes root growth
 - Improves leaf thickness
 - Increased leaf yield
- Requires about 8 man-hours per acre
 - \$80 – 96 per acre
- About 17 man-hours per hectare

Mechanical Topping



Mechanical Topping

- Reasonably efficient at topping
 - Needs uniform crop
- Cost of topping machines
 - Smaller growers cannot justify
- Loss of “tip” leaves
- Has not been widely adopted in burley production

Chemical Topping

- Using growth regulators to suppress or kill the terminal bud/flower of tobacco plants
- Many studies have been done
- Danny Peek -- 1995
 - Two varieties
 - TN 86
 - BM 16 (non-flowering breeding line)
 - 3 chemical topping times + check
 - 4 chemical combinations

TN 86

- Chemical topping most effective when applied at early button stage.
 - 25 % button: 87% topping effectiveness
 - 75% button: 58% topping effectiveness
- Yield reduction compared to manual topping more severe when chemical topping applied early.
- Minimal impact on leaf quality

BM 16

- Chemical topping effective at 99% regardless of leaf number stage
- Yield reduced by chemical topping when applied at 25 leaf stage
- Yields similar to manually topped when applied at 30 or 35 leaf stage
 - Plants large and hard to handle when topped at 30 to 35 leaves
 - Some reduction in quality due to overlap in the barn

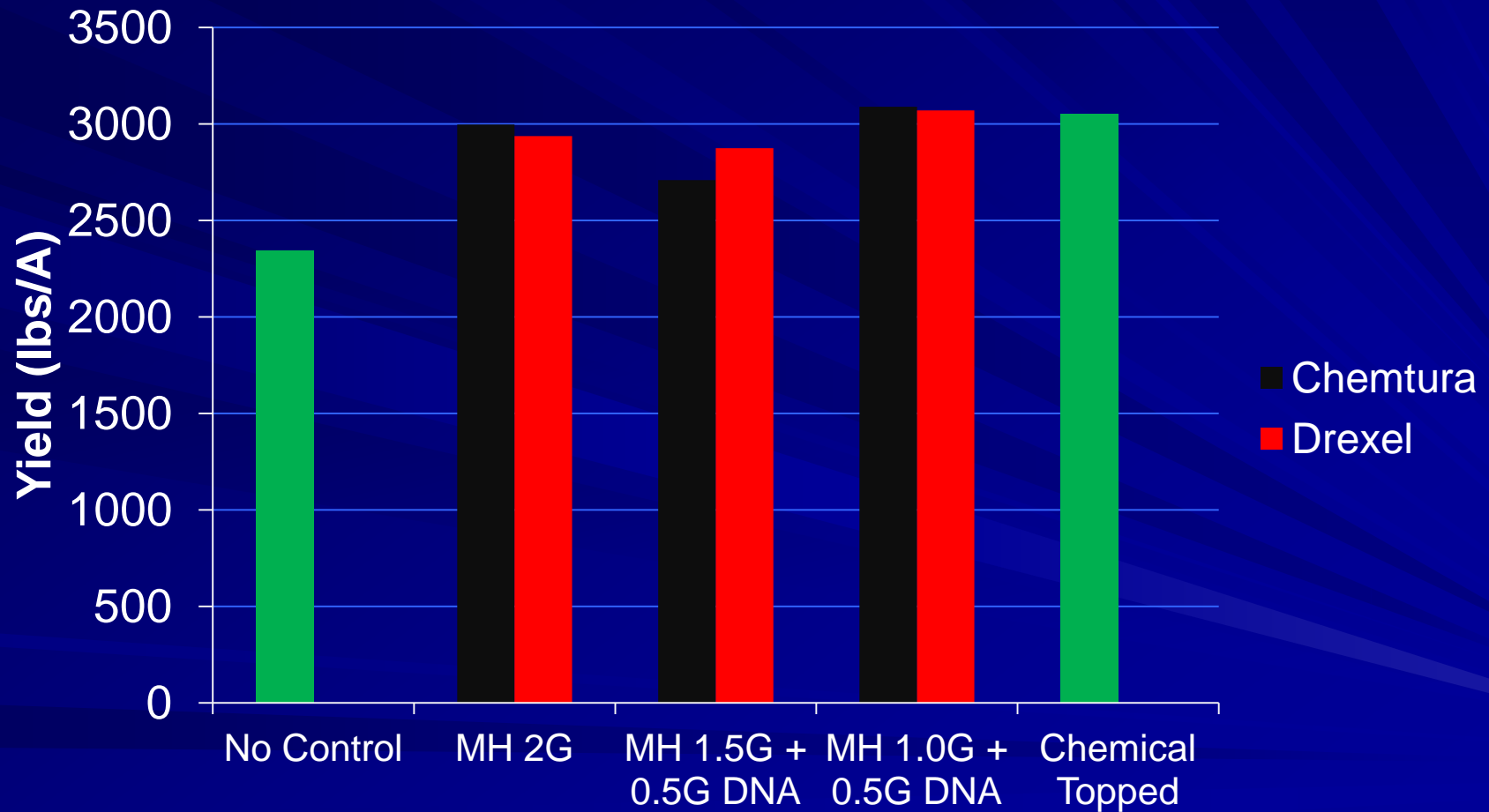
Chemical topping of burley tobacco could be successful using non-flowering varieties

D. Peek, 1995

Could it work on late maturing variety?

- KT210
- NC 7

2012 Sucker Control Comparison



Objective

- Determine if chemical topping could be feasible with current late maturing burley tobacco varieties.

Methods 2013

- Variety KT 210
- Transplanted May 24th
- Chemical topping applied July 19th
- Manual topping July 26th
- Post topping applied July 26th
- Sucker Control Counts August 22nd
- Harvested August 28th

Treatments

RCB with 6 Replications

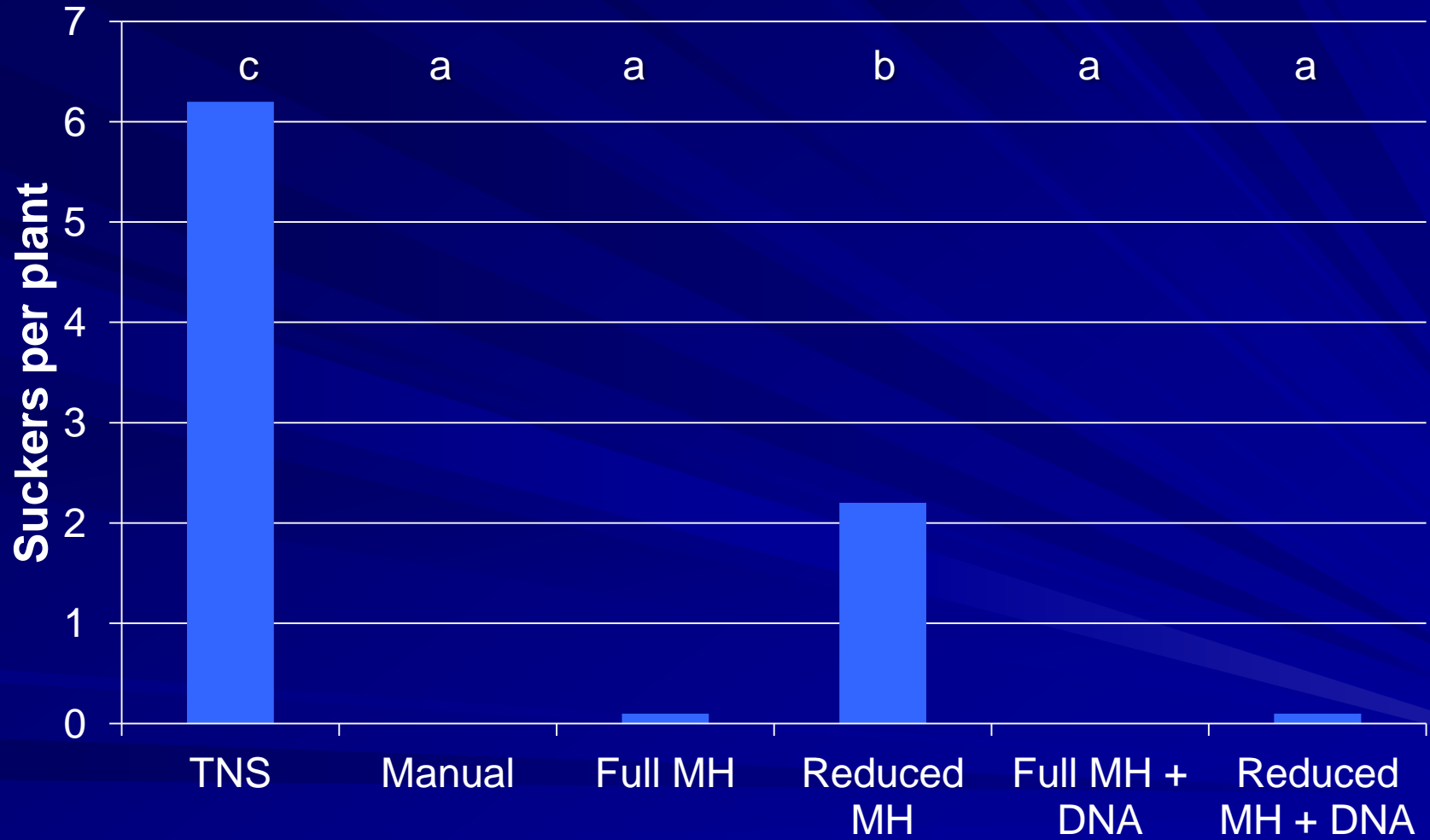
- Manually Topped – No Sucker Control
- Manually Topped – 2.52 kg ai/ha MH + 0.7 kg ai/ha DNA (Butralin)
- Topped with 3.36 kg ai/ha MH (2G) “full”
- Topped with 2.52 kg ai/ha MH (1.5G) “reduced”
- Topped with 3.36 kg ai/ha MH + 0.7 kg ai/ha DNA
- Topped with 2.52 kg ai/ha MH + 0.7 kg ai/ha DNA

Topping effectiveness

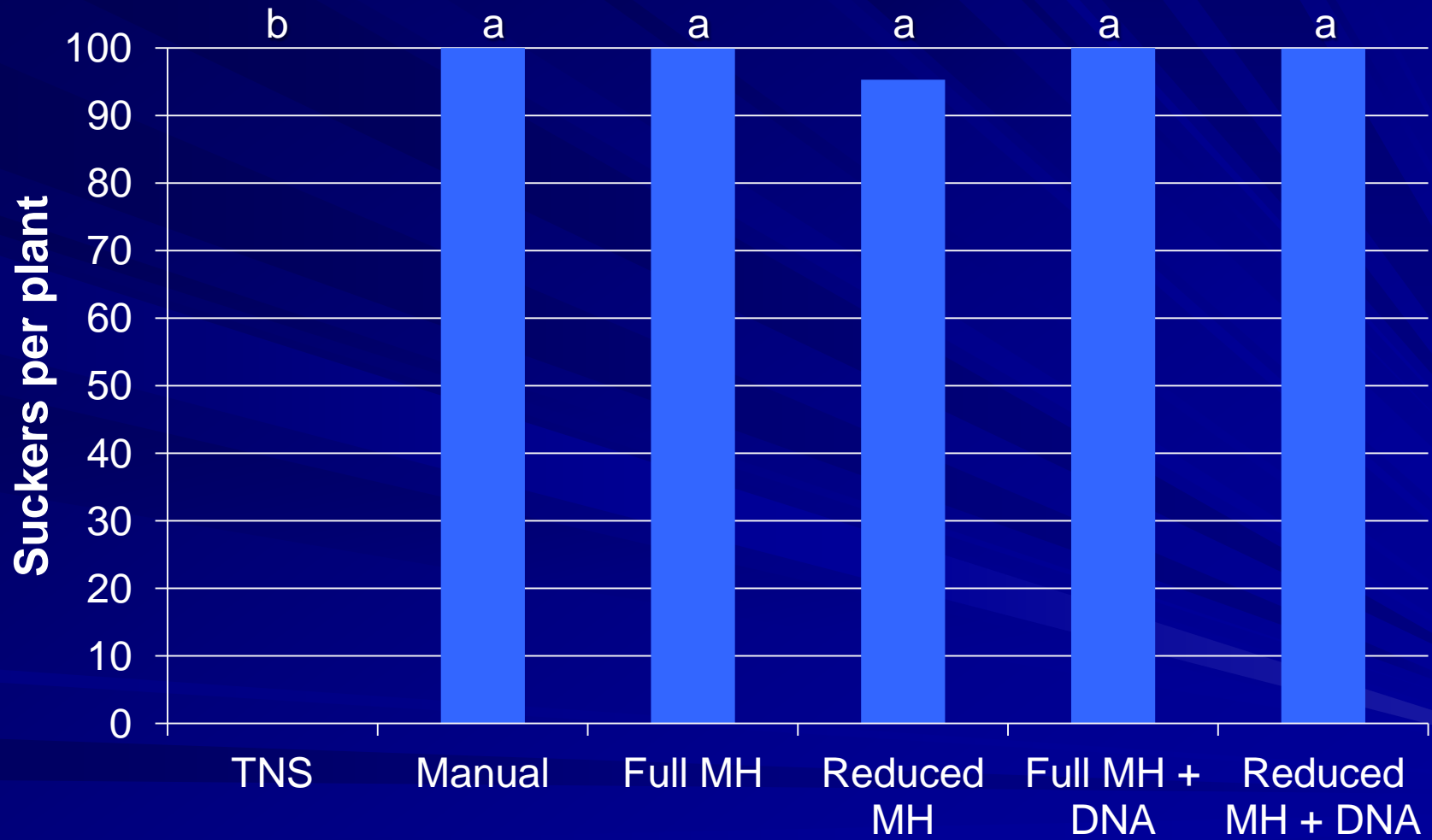




Impact of chemical topping on total number of suckers per plant



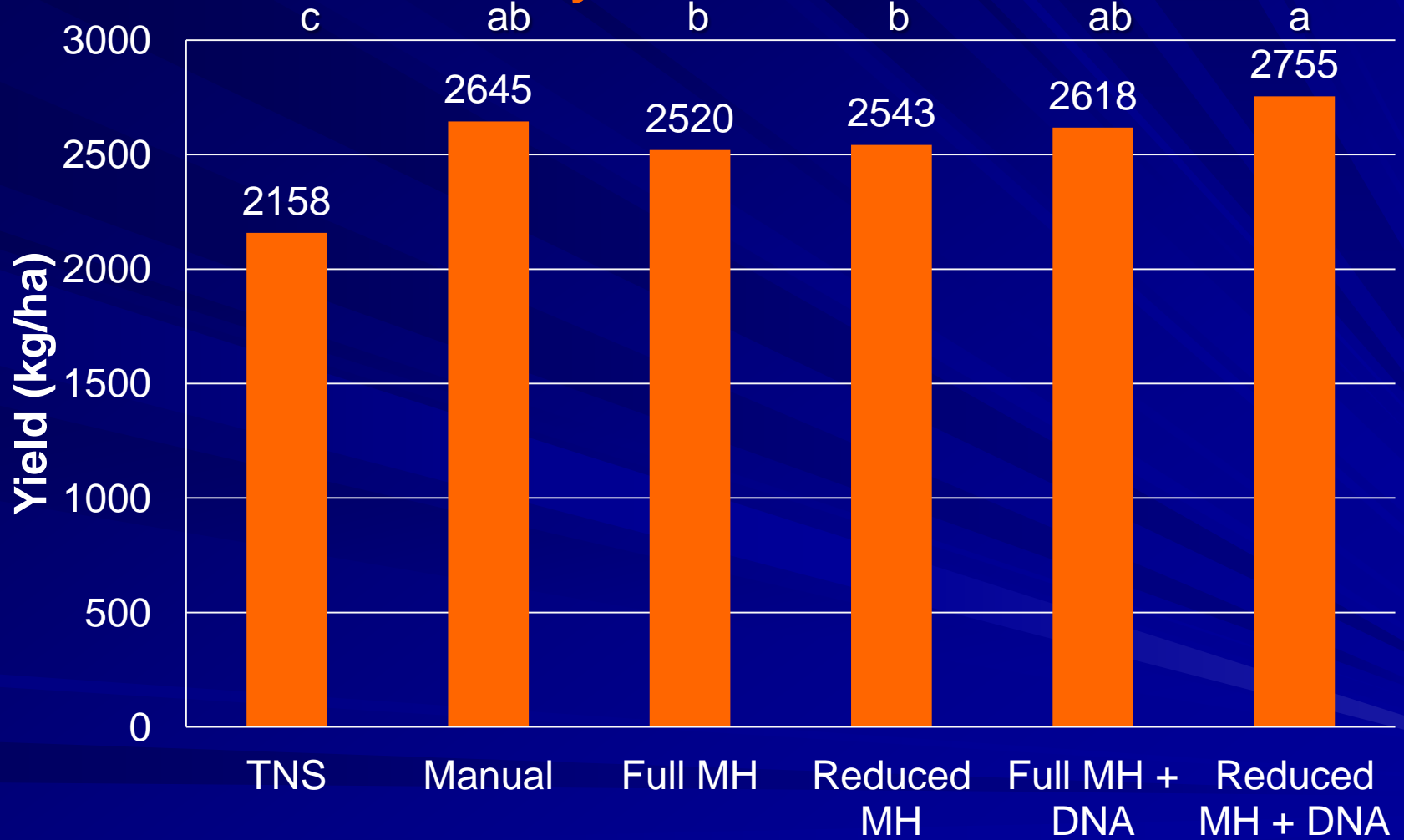
Impact of Chemical Topping on Sucker Control



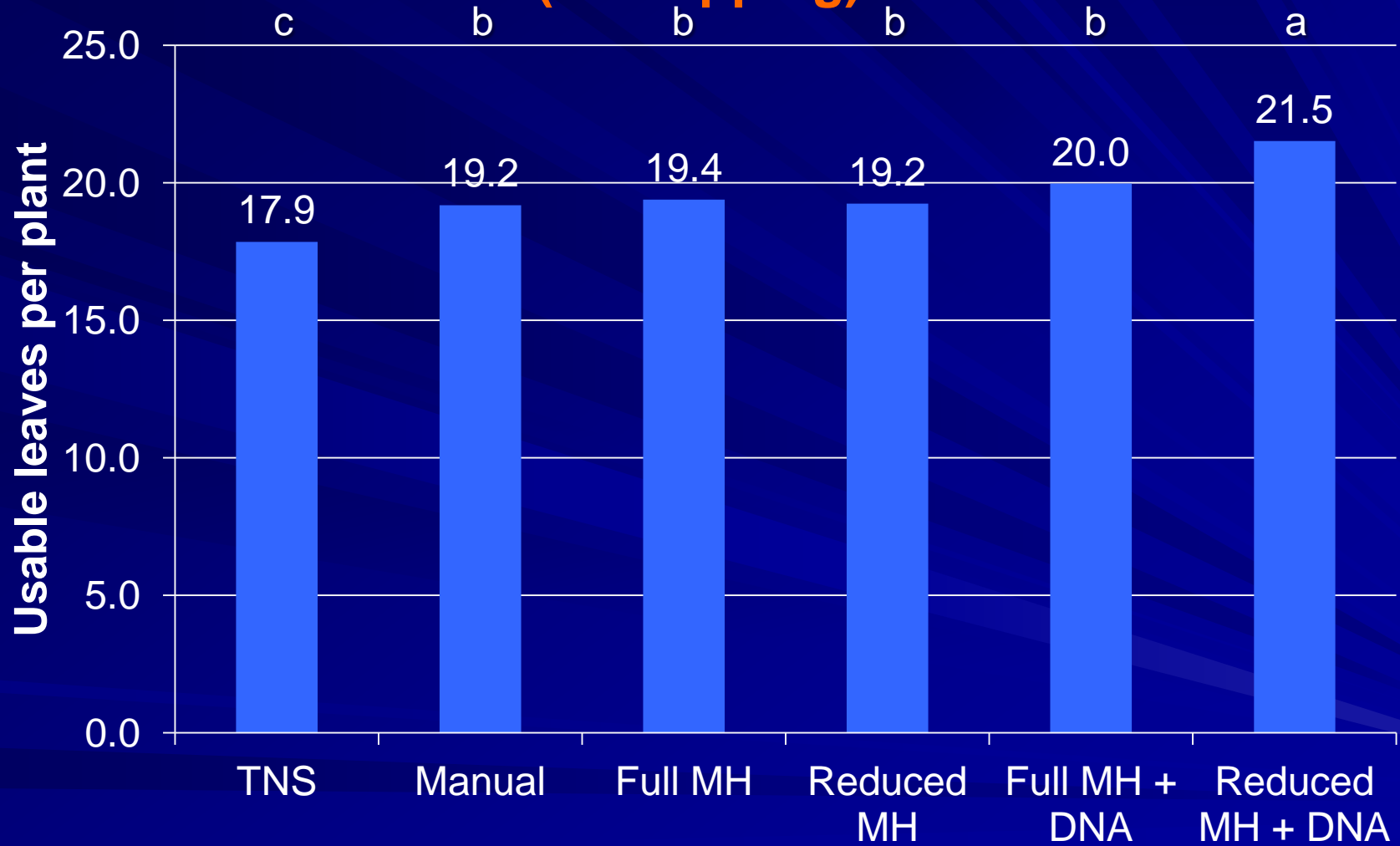
Suckers on reduced MH treated plants



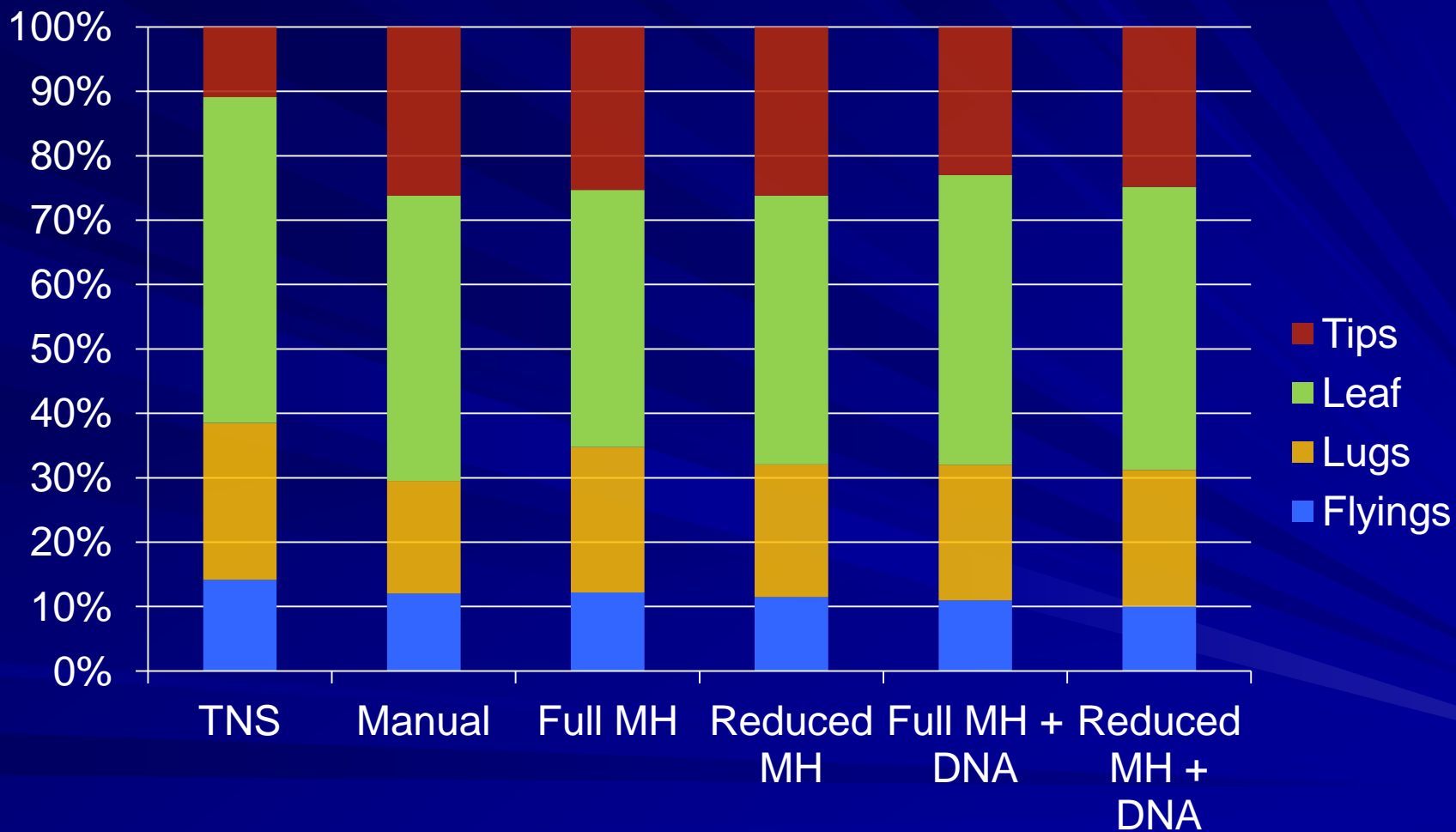
Impact of Chemical Topping on Yield of Burley Tobacco 2013



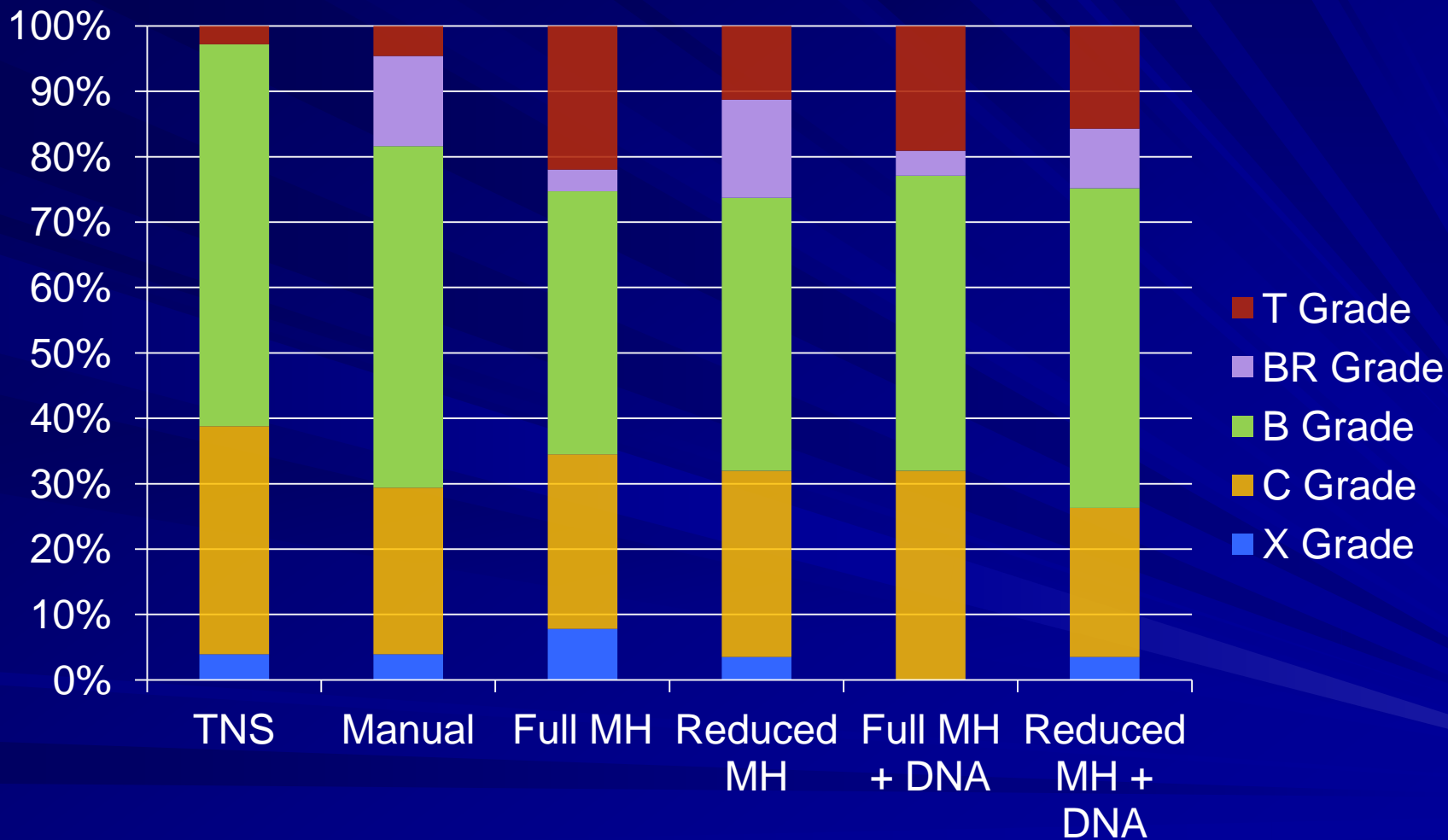
Impact of chemical topping on leaf number (at stripping)



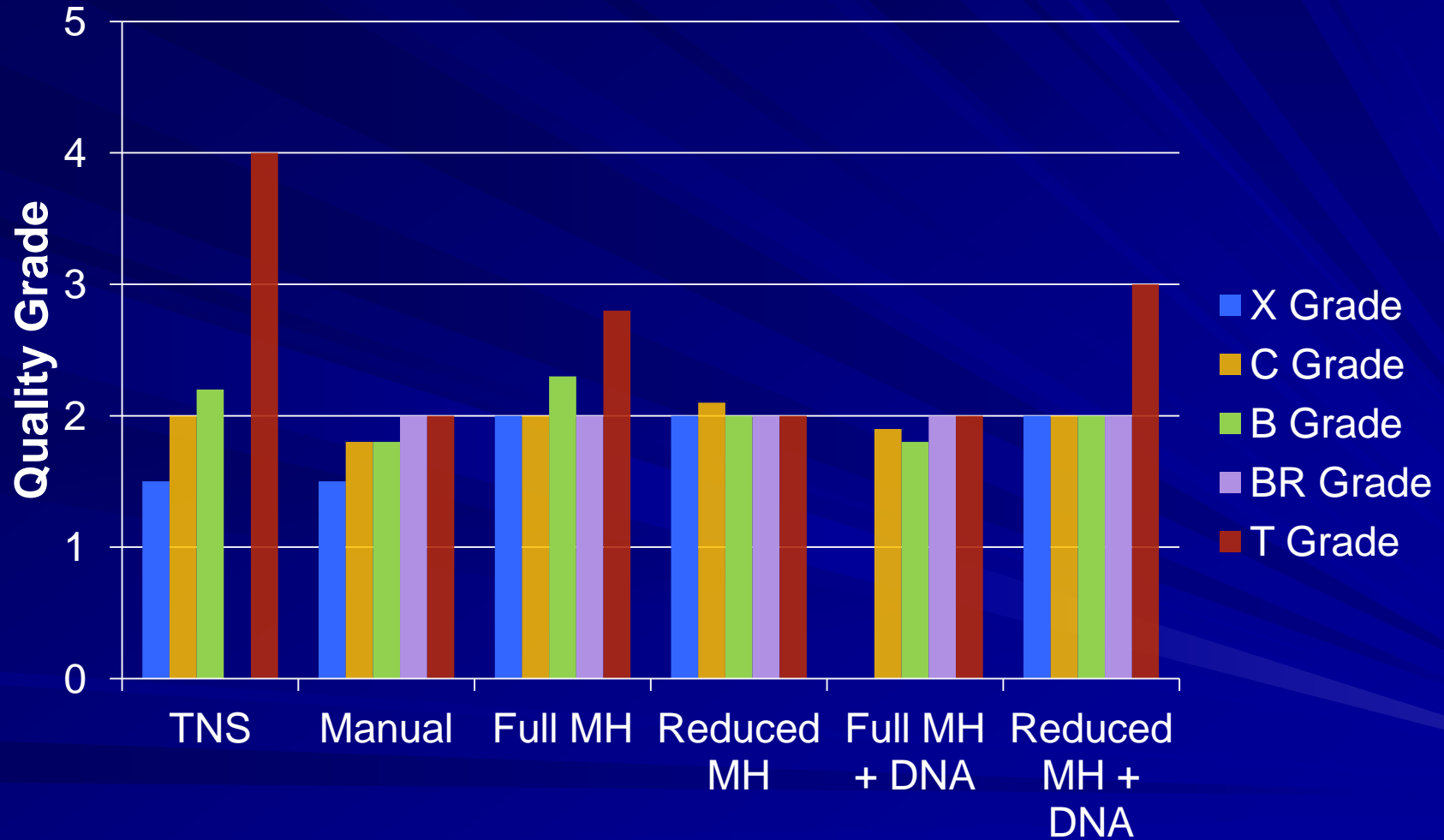
Impact of Chemical Topping on Proportion of Leaf in Stalk Position Grades (Farm Grades)



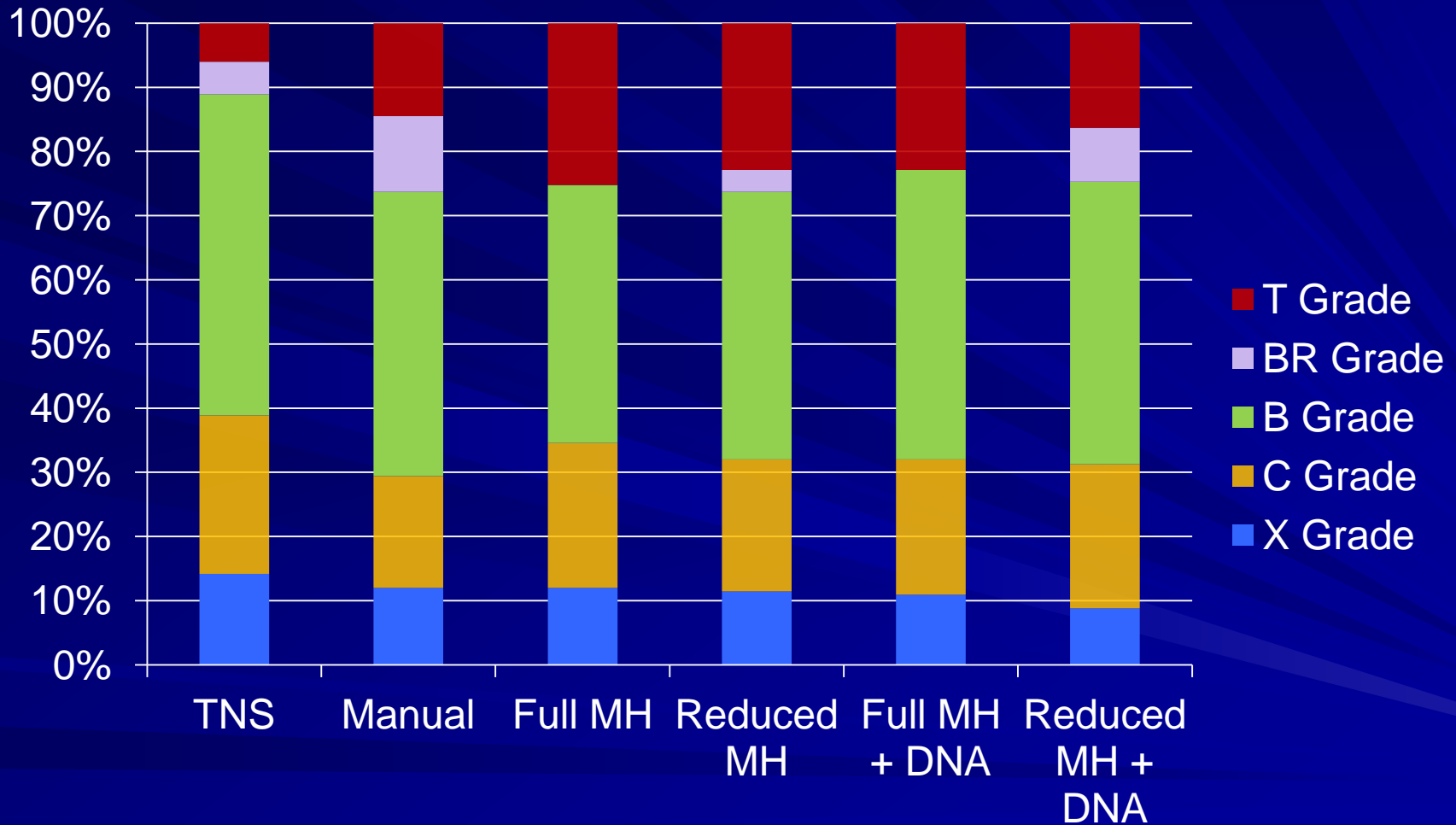
Impact of Chemical Topping on Proportion of Leaf in Stalk Position Grades (Buyer A)



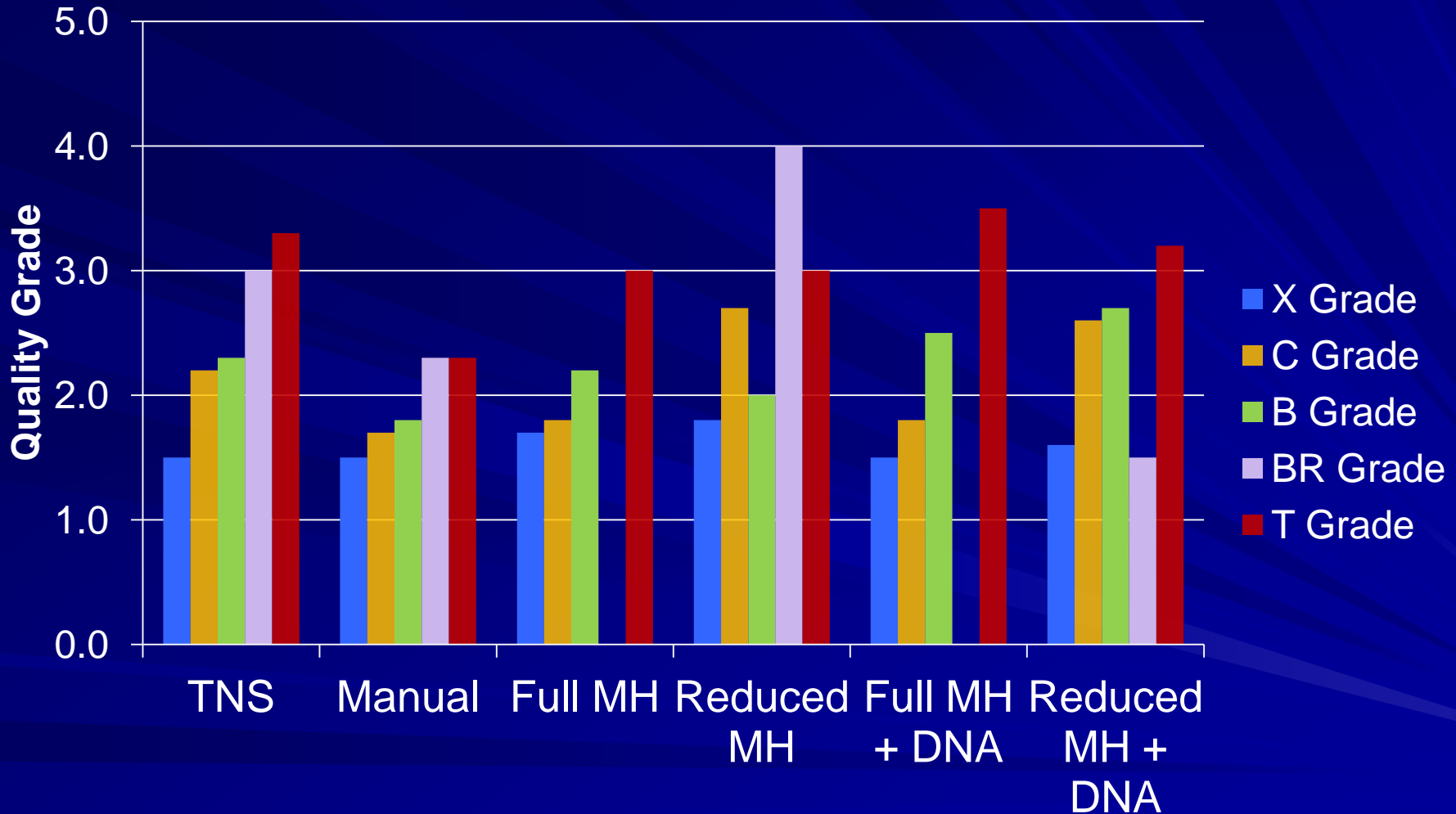
Impact of Chemical Topping on Quality of Cured Leaf (Buyer A)



Impact of Chemical Topping on Proportion of Leaf in Stalk Position Grades (Buyer B)



Impact of Chemical Topping on Quality of Cured Leaf (Buyer B)



Upper leaf length



Conclusions

- Chemical topping did not result in significant yield reductions in KT210.
- MH alone at reduced rates had greater numbers of suckers per plant, but sucker control was not significantly different from combination treatments.
- Chemical topping tended to result in a greater proportion of the crop being graded as a tip by tobacco buying interests.