

NNN Levels in Stable Reduced Converter (SRC) and LC lines cured under conditions that favor NNN formation.

M. Lusso; K. Lion; A. Adams; W. Morris; U. Warek and J. Strickland

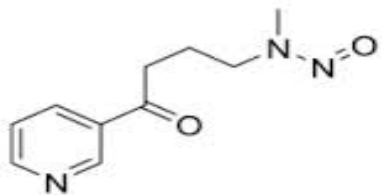


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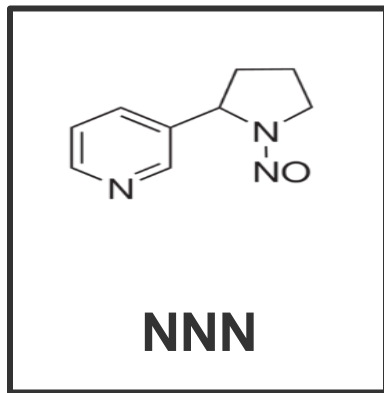
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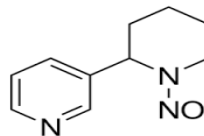
Introduction - TSNAs



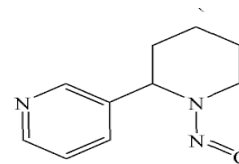
NNK



NNN



NAT

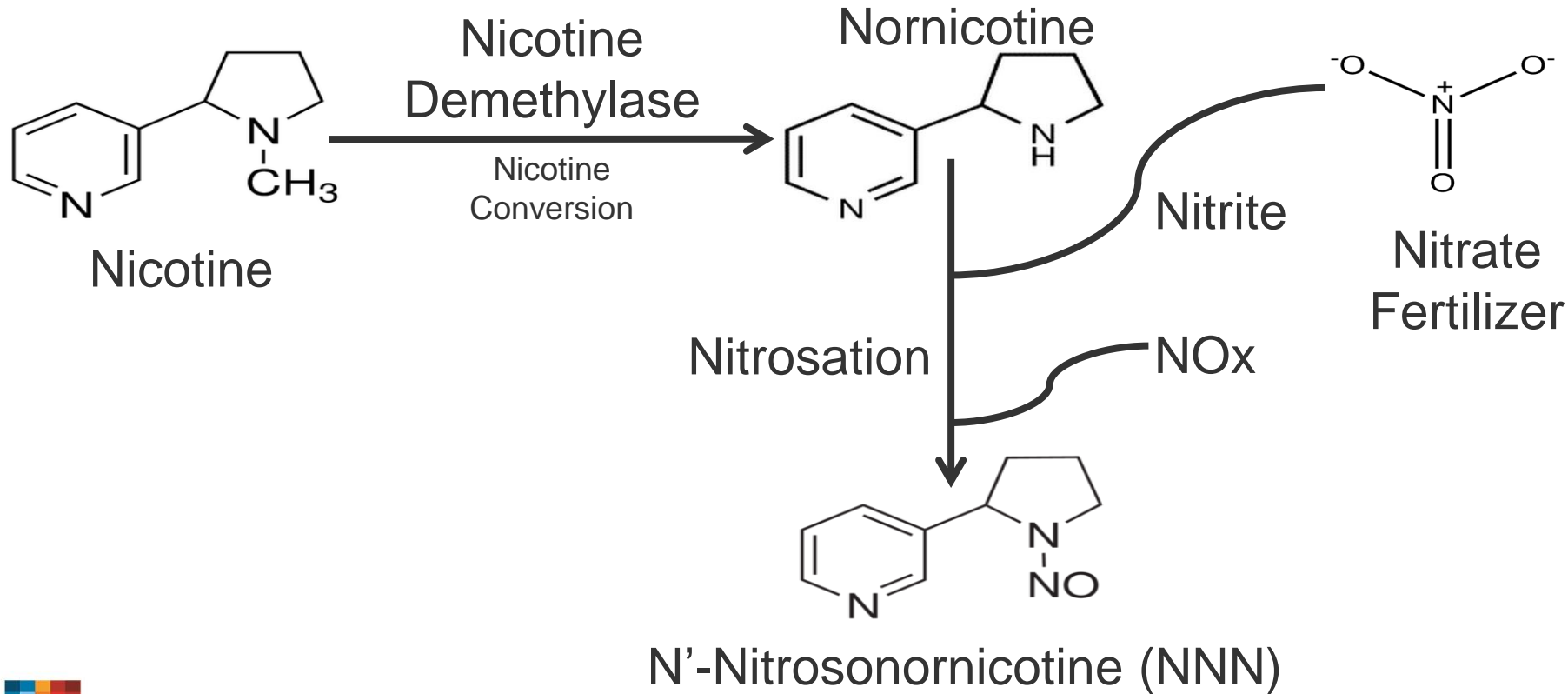


NAB

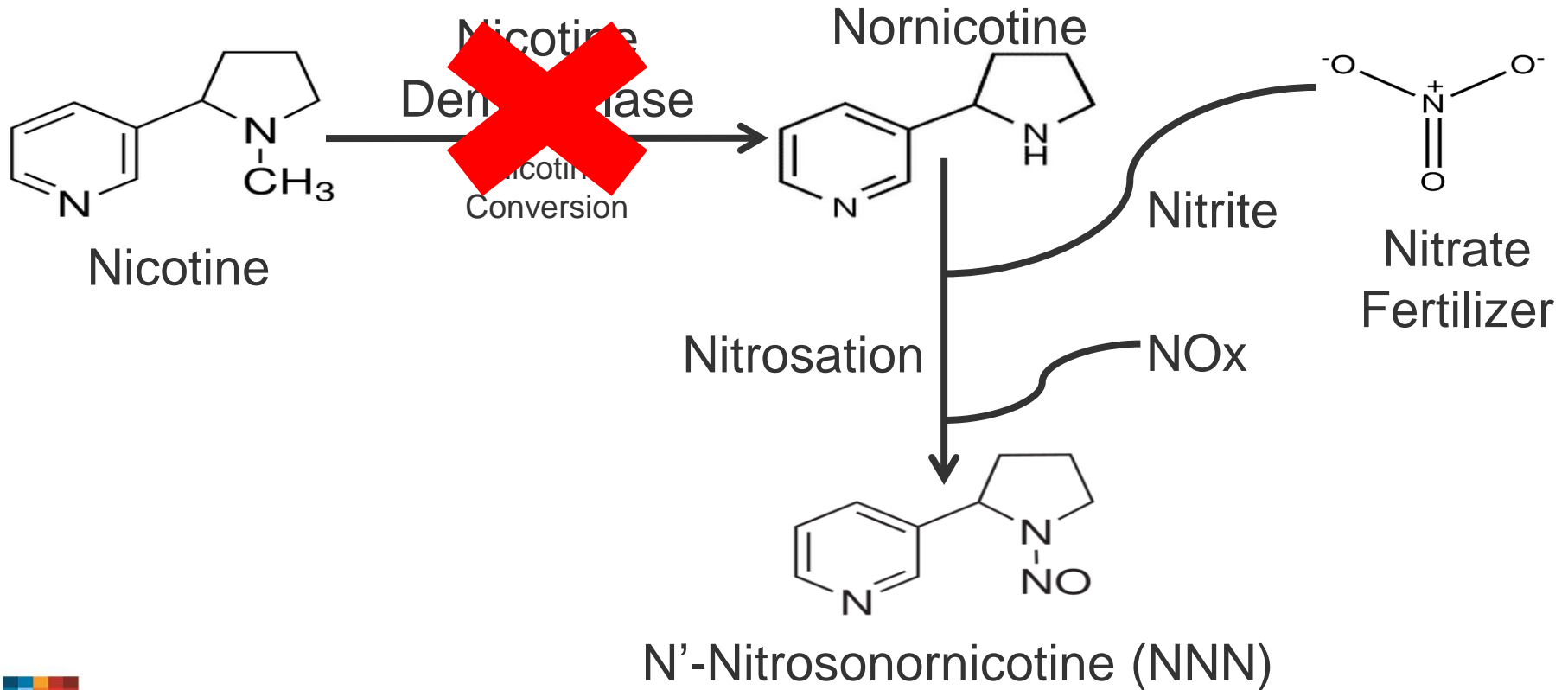
- NNN and NNK have been identified by FDA as harmful or potentially harmful constituents in tobacco products



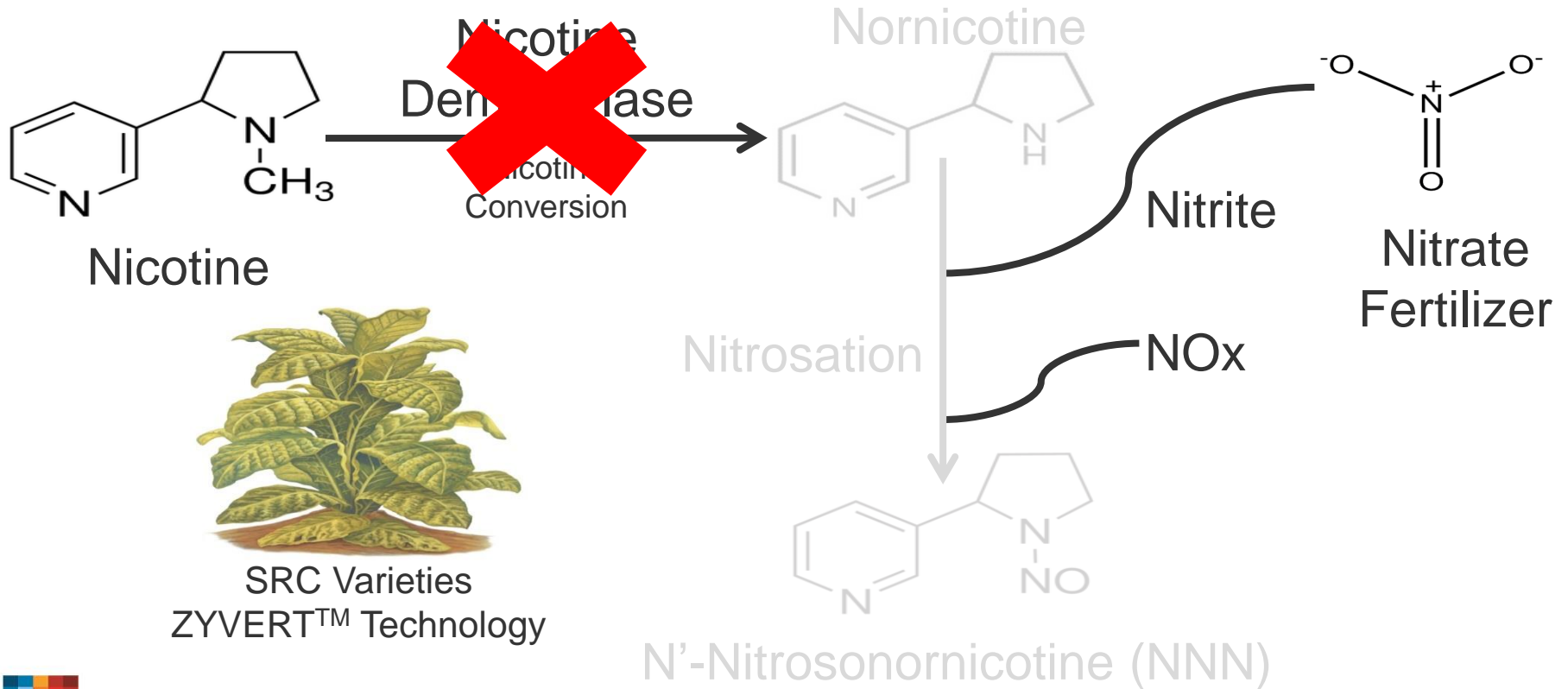
NNN Formation and ZYVERT™ Technology



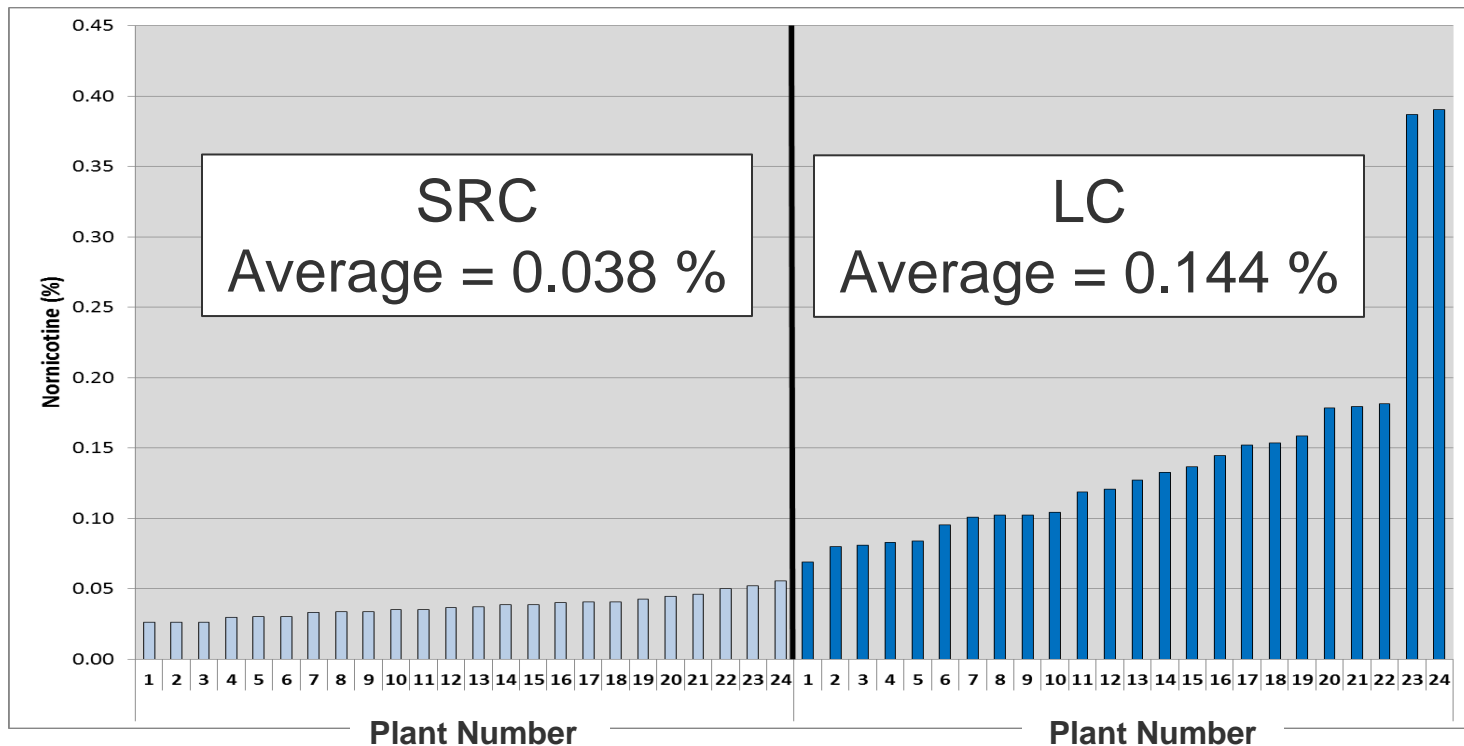
NNN Formation and ZYVERT™ Technology



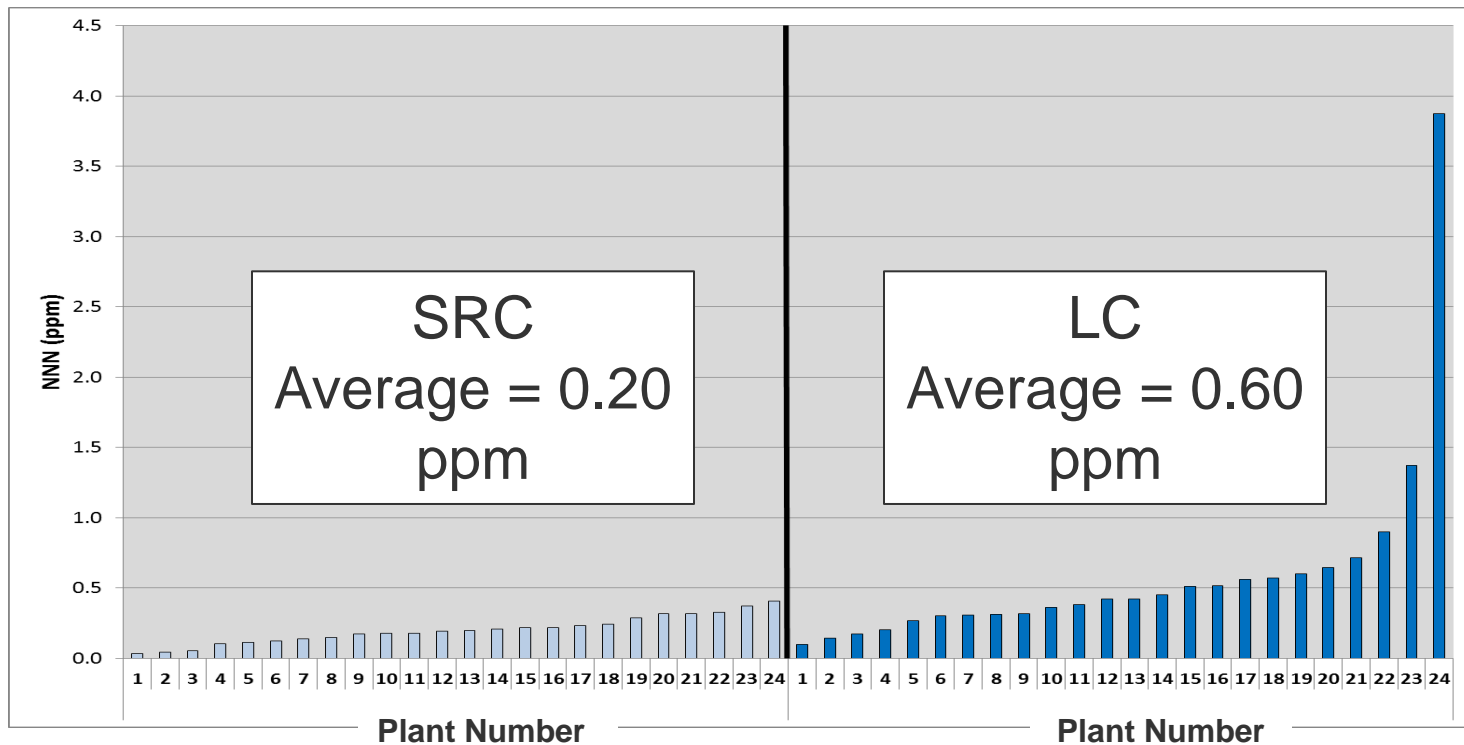
NNN Formation and ZYVERT™ Technology



Nornicotine Levels in SRC and LC Plant Populations



NNN Levels in SRC and LC Plant Populations



Objective

Evaluate the impact of ZYVERT™ technology in SRC Burley air-cured and SRC Dark fire-cured lines cured under conditions conducive to NNN formation

Parameters:

- Barn Curing Conditions (RH or Temp)
- Nornicotine levels
- NNN levels



Experiment Design – Burley Air-Cured

Tobacco Varieties

TN90 LC

TN90 SRC with ZYVERT™ Technology

2 Curing Barns

Control Barn

Managed according to recommended curing practices

72 sticks (36 LC and 36 SRC) – 6 replications

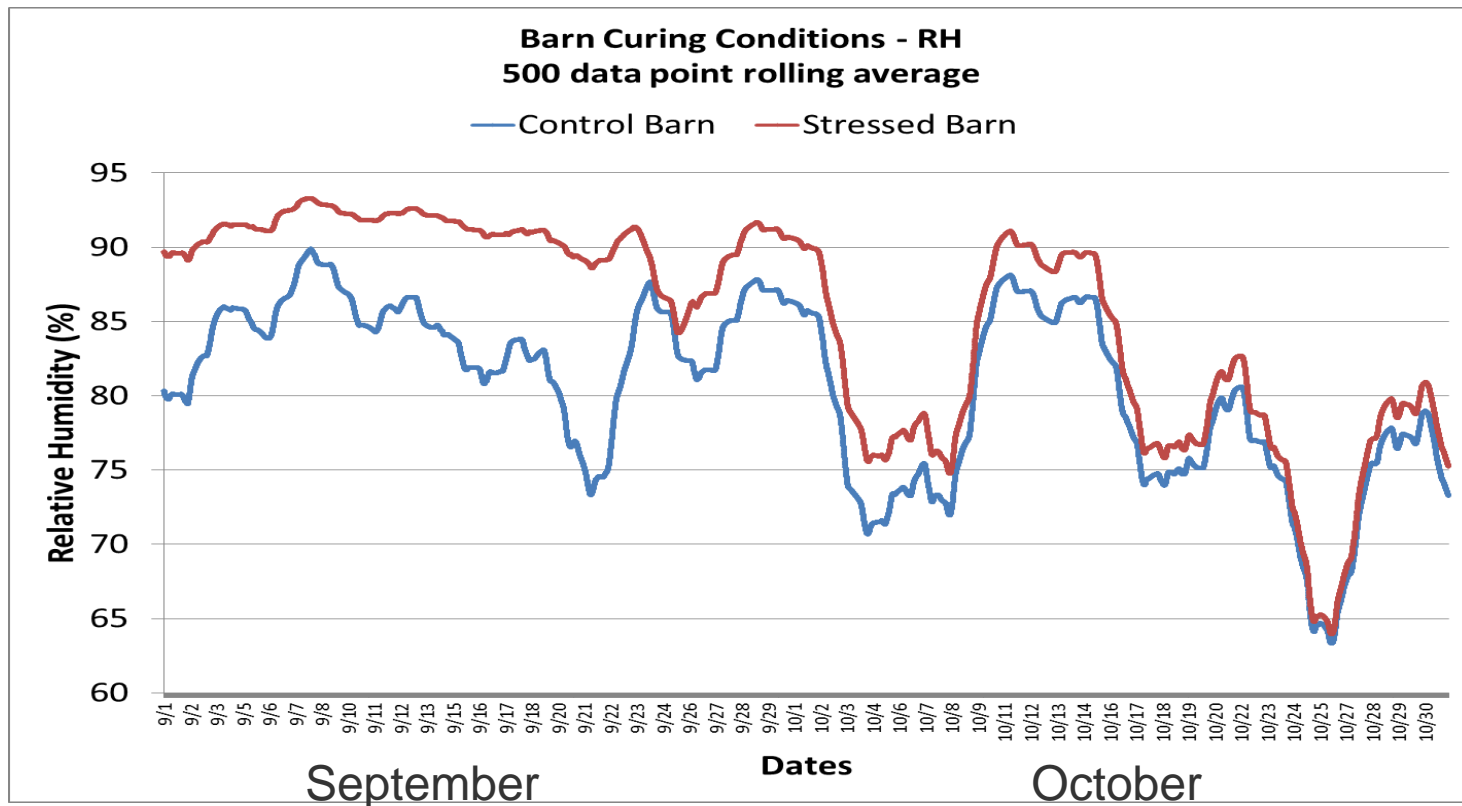
Experimental Barn (Stressed)

Managed to maintain high relative humidity during curing

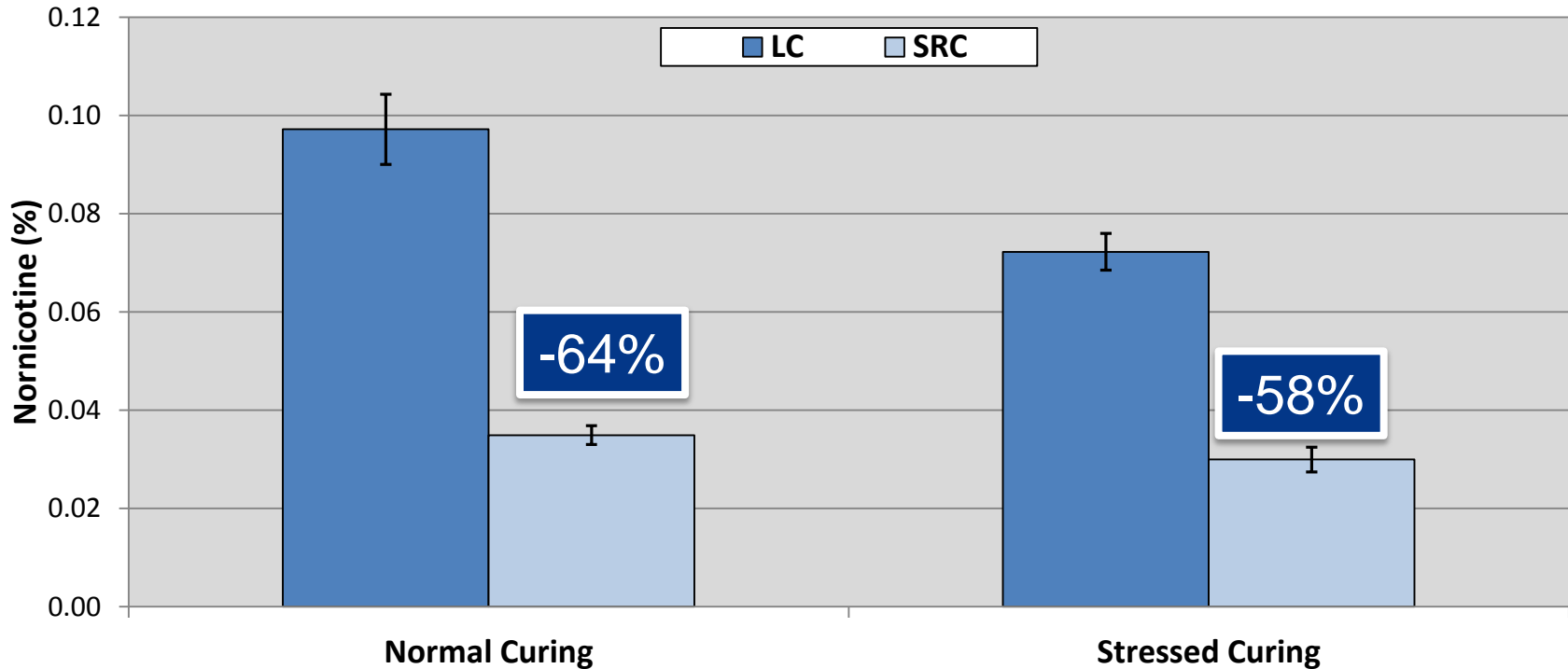
96 sticks (48 LC and 48 SRC) – 6 replications



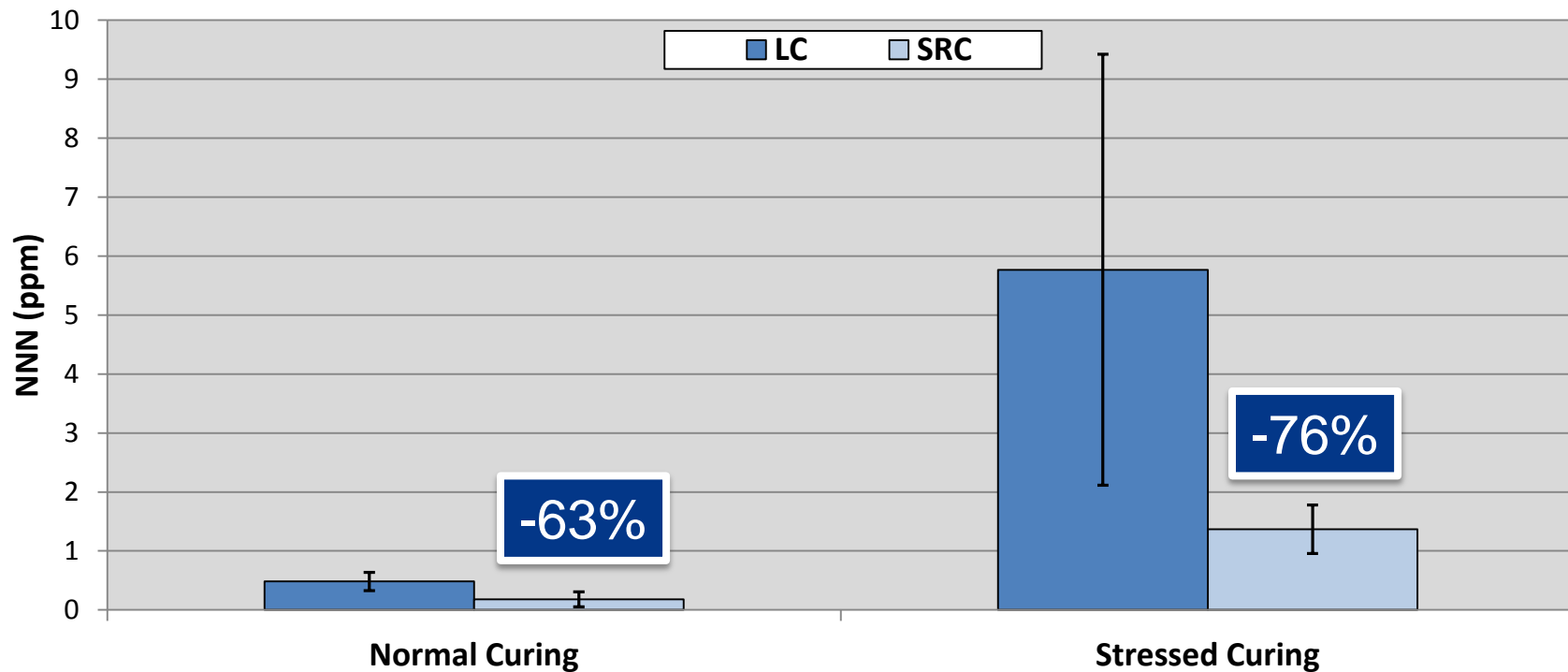
Burley Air-Curing Barn Conditions - RH



Nornicotine Levels – Burley Air-Cured



NNN Levels – Burley Air-Cured

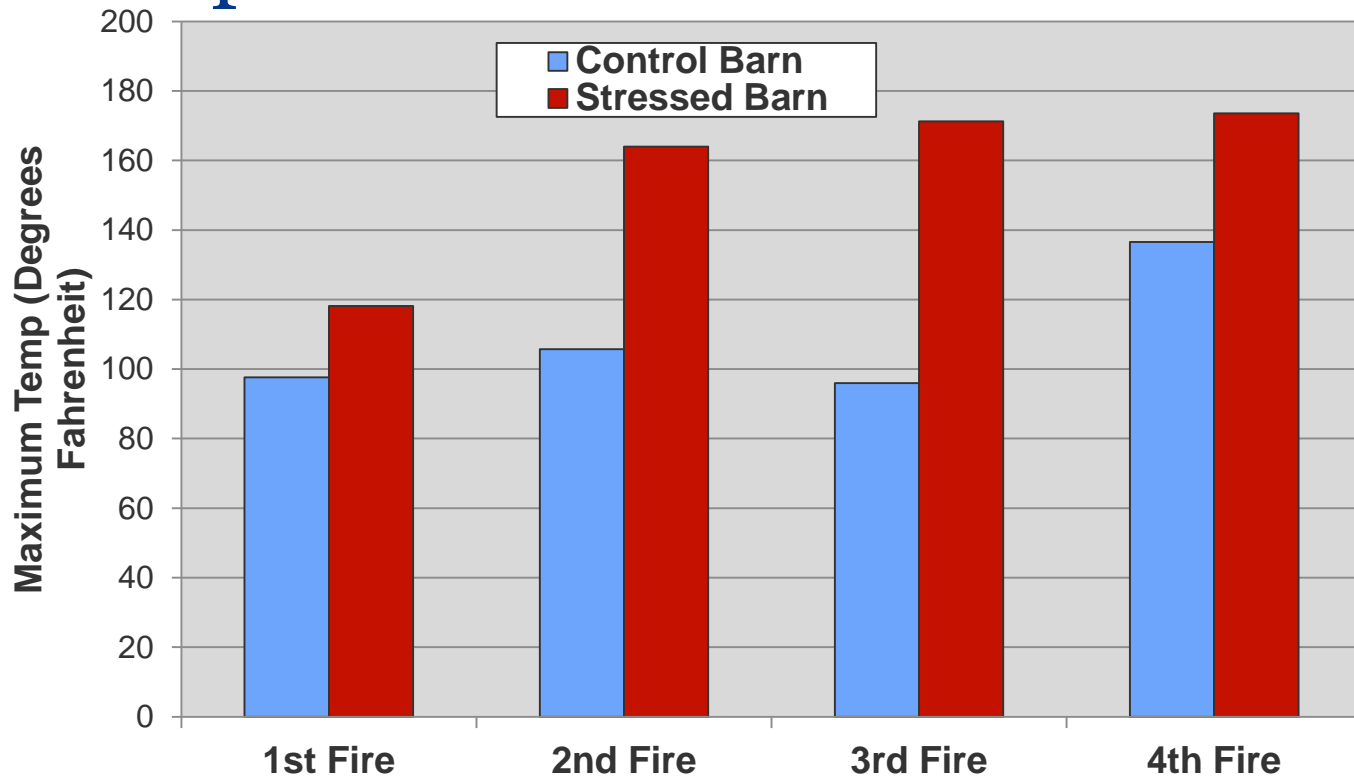


Experiment Design – Dark Fire-Cured

- Tobacco Varieties – grown under standard dark production practices
 - KY171 LC
 - KY171 SRC with ZYVERT™ Technology
- 2 Curing Barns
 - Control Barn
 - Managed according to recommended curing practices
 - Experimental Barn (Stressed)
 - Managed to reach higher temperatures during fires

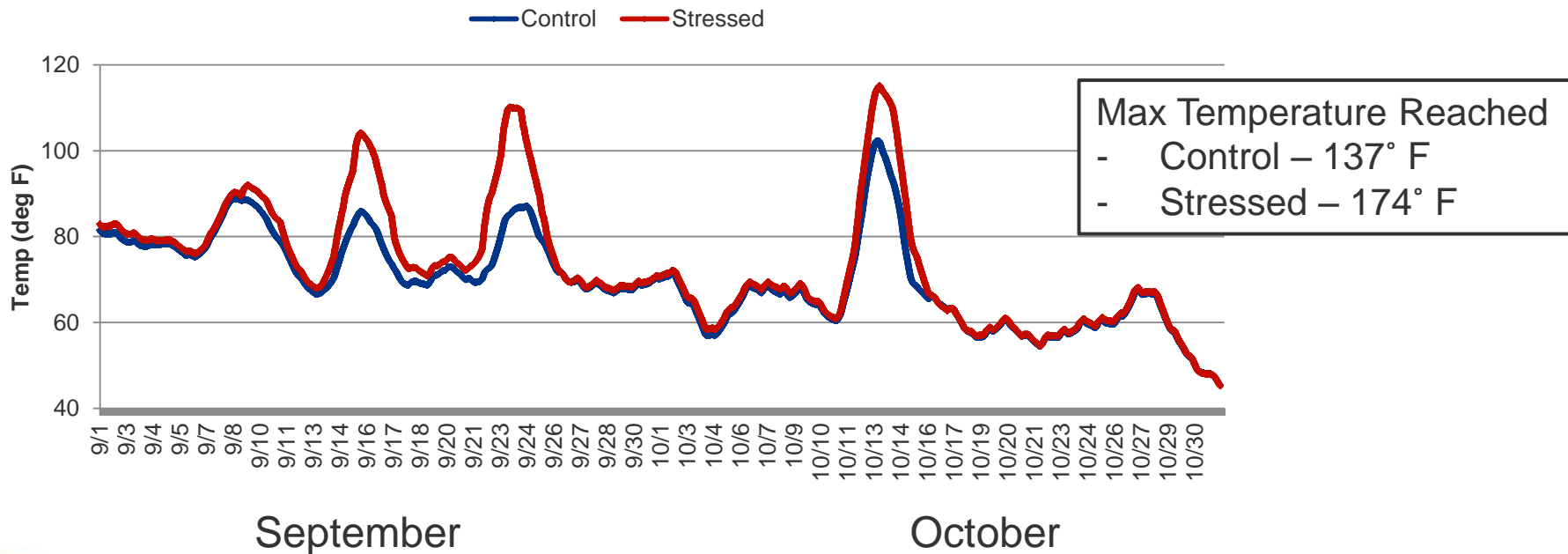


Fire-Curing Barn Conditions – High Temperature

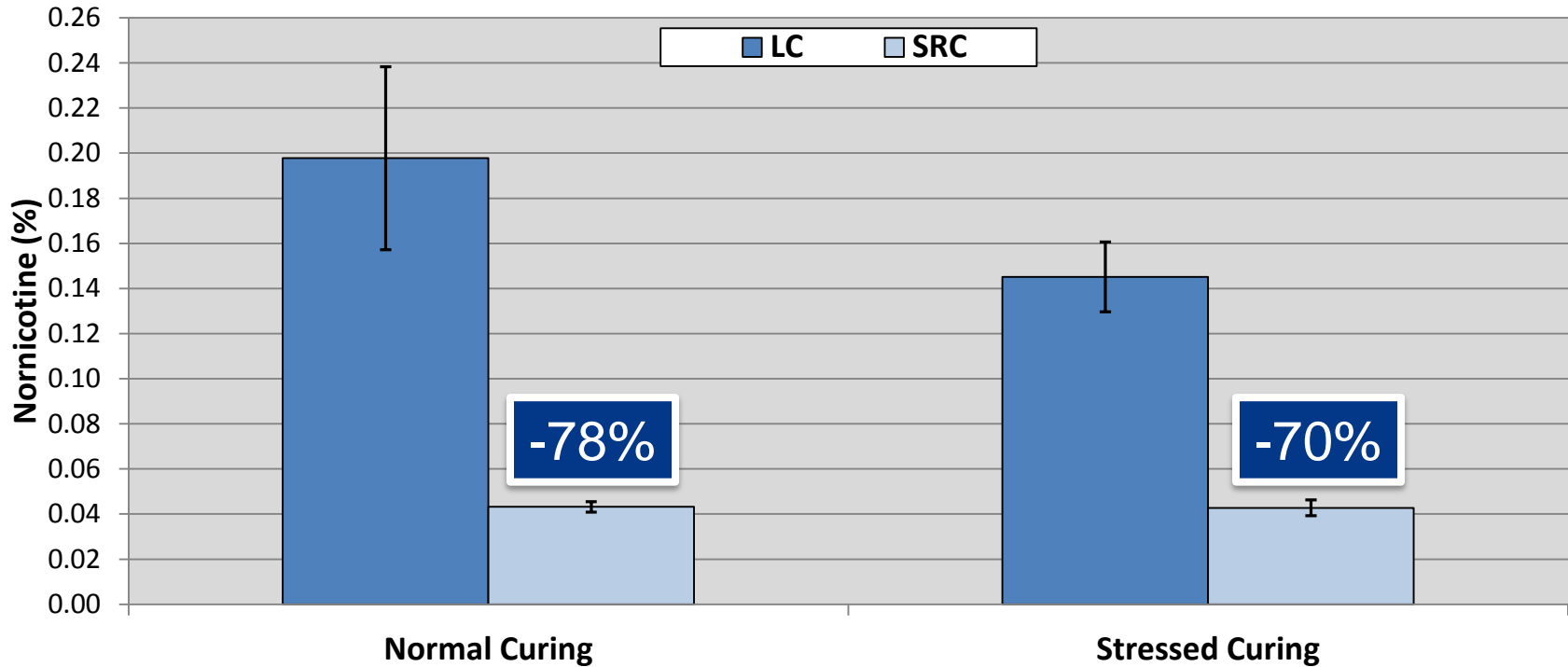


Fire-Curing Barn Conditions - Temperature

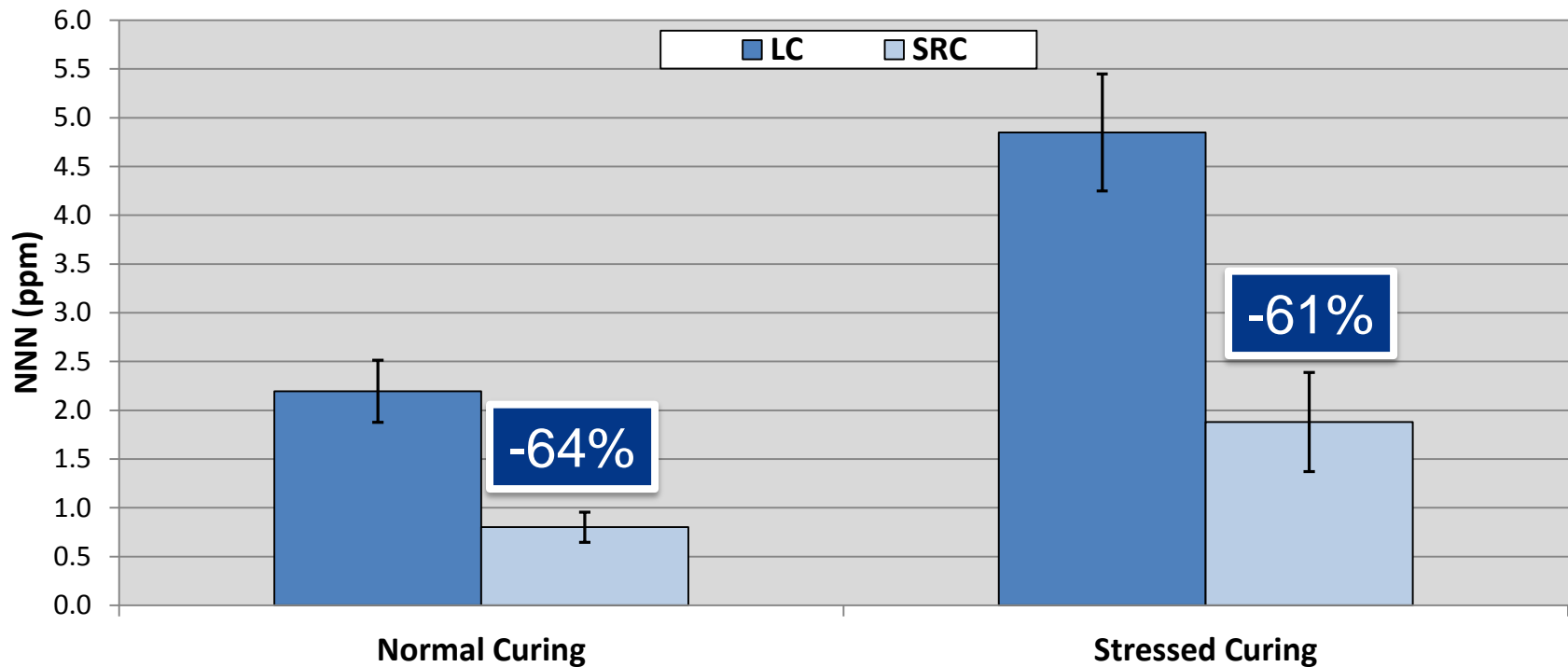
Curing Conditions - Temperature 500 data point rolling average



Nornicotine Levels – Dark Fire-Cured



NNN Levels – Dark Fire-Cured



Conclusions

- Burley and dark SRC tobaccos with ZYVERT™ technology exhibit significant reductions in nornicotine and NNN levels compared to LC variety when cured under recommended conditions
- When cured under conditions conducive to NNN formation, burley and dark SRC tobaccos with ZYVERT™ technology continue to show significant reductions compared to controls
- Curing conditions have a significant impact on NNN formation
- Regardless of curing conditions, SRC varieties with ZYVERT™ Technology reduce NNN levels relative to controls





Questions