### WBT and CCT Correlations The Truth About Stove Testing

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#### **Goal: Accurate Stove Comparison**



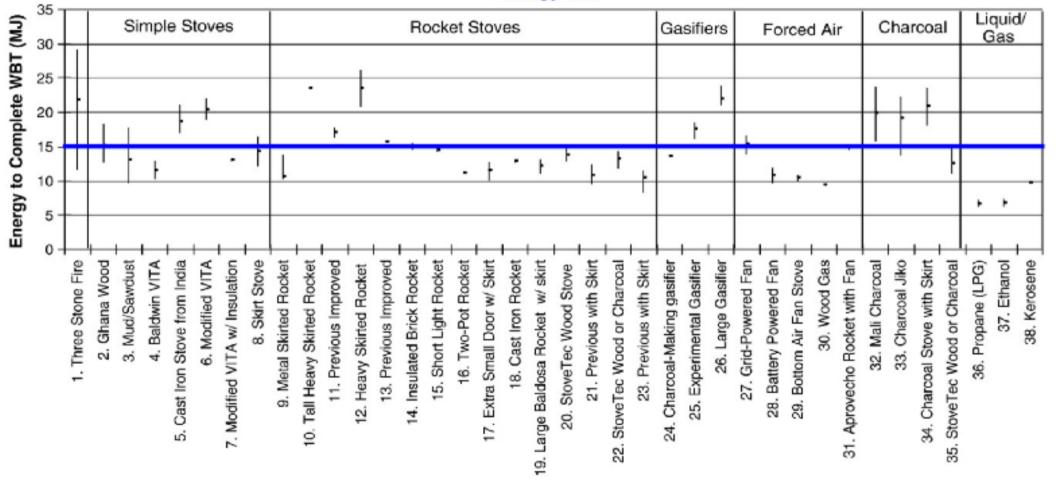
#### How Close is Approximation?





# How Are Benchmarks Adapted to Field?

#### **Energy Use**





# Which Test? How Much of Each?

# **Beautiful Stove**

# **Correlations From Rwanda**

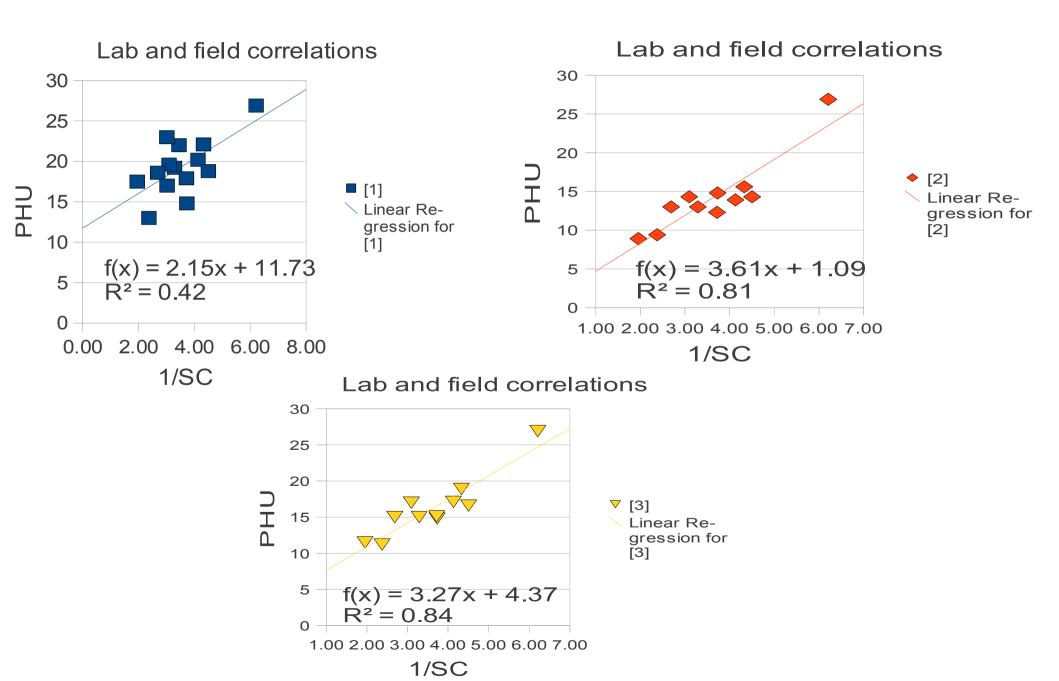
- Validity of CARE stove project
- VERY preliminary correlation—lab underestimates

CCT Comparison of Stove 1	and Stove 2	% difference
Specific fuel consumption	g/kg	62%
Specific CO production	g/kg	49%
Specific CO2 production	g/kg	56%
Specific PM production	mg/kg	42%

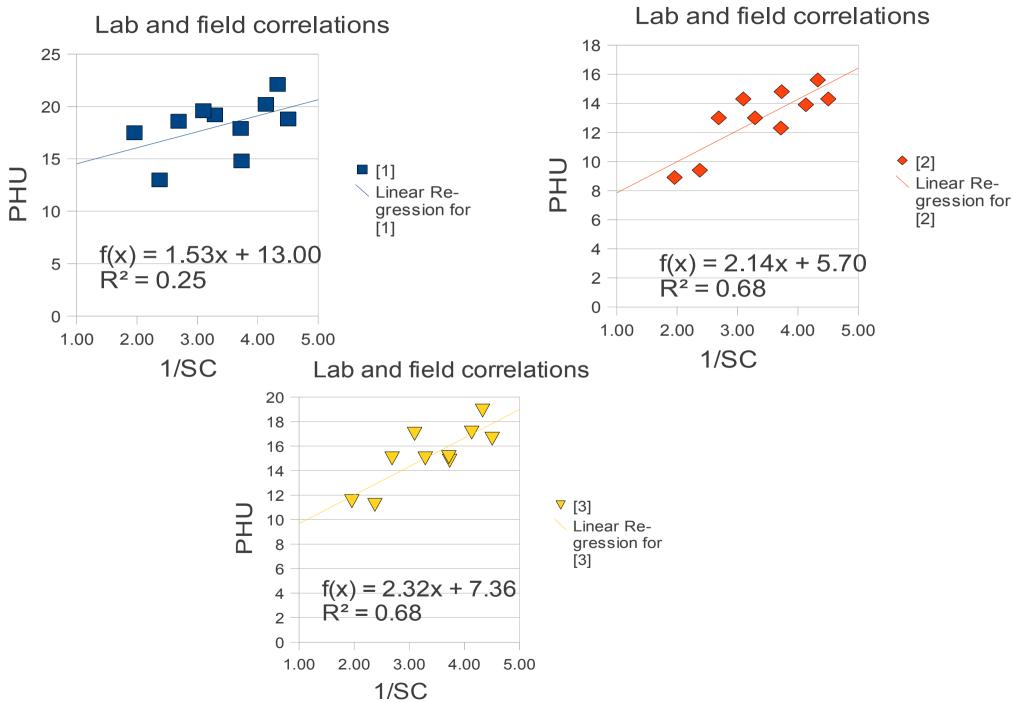
WBT Compar	rison of Stove	1 and Stove 2	% difference

	/1	4.40/
Specific fuel consumption	g/L	44%
Chapitia CO production	~/I	200/
Specific CO production	g/L	38%
Specific CO2 production	g/L	43%
opeome ooz production	9, L	4070
Specific PM production	mg/L	38%
epeeme i m production		0070

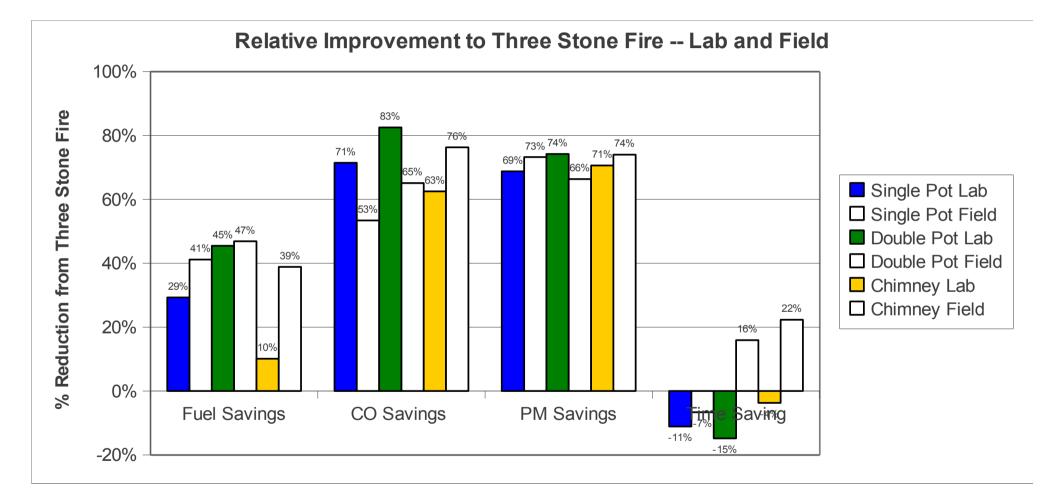
### **Correlations From VITA**



### **Alternate Correlations From VITA**

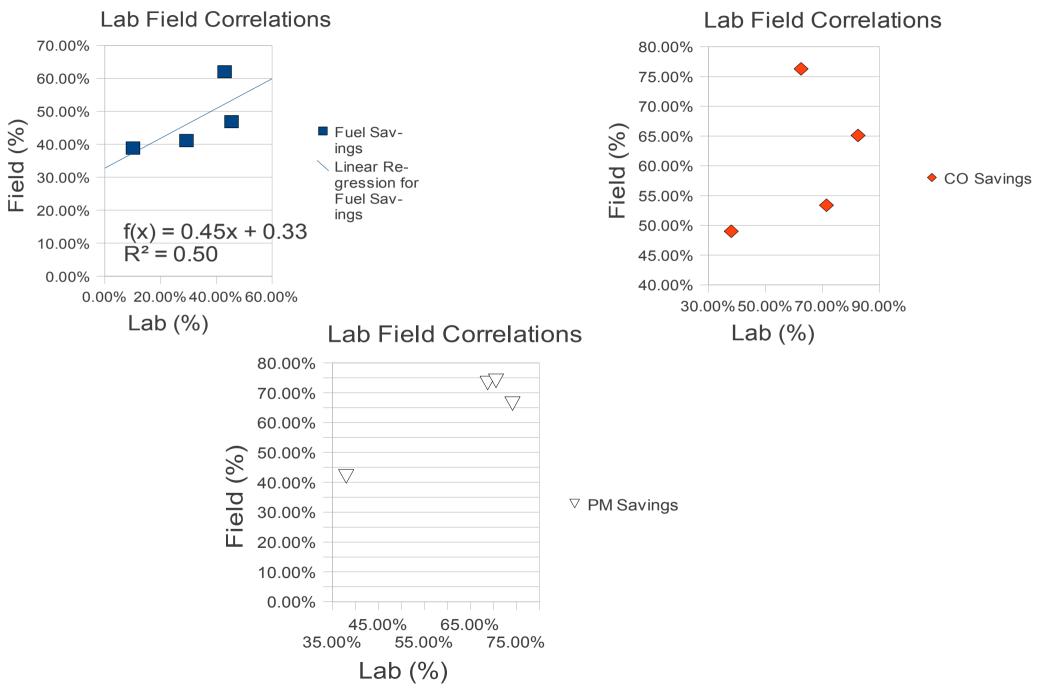


# **Correlations From Aprovecho**



#### **Alternate Correlations From** Aprovecho Lab Field Correlations 80.00% 75.00% Lab Field Correlations 50.00% 70.00% 45.00% Field (%) 65.00% 40.00% 60.00% 35.00% Field (%) CO Savings f(x) = 0.22x + 0.36Fuel Sav-30.00% 55.00% ings $R^2 = 0.92$ 25.00% Linear Re-50.00% 20.00% aression for Fuel Sav-15.00% 45.00% ings 10.00% 40.00% 5.00% 60.00%70.00%80.00%90.00% 0.00% Lab (%) Lab Field Correlations 0.00% 20.00% 40.00% 60 Lab (%) 75.00% $\bigtriangledown$ 70.00% Field (%) ▽ PM Savings $\bigtriangledown$ 65.00% 60.00% 65.00% 70.00% 75.00% 80.00% Lab (%)

# **New Correlations From Aprovecho**



# Future Work

- Add more historical data
- Consider other correlations
- Add correlations to KPT

