

DEVELOPMENT OF DRY CURED CHICKEN SAUSAGES USING SPENT HEN MEAT AND FAT

by

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QualiREG
La qualité pour le développement
en Océan Indien

PROBLEM STATEMENT

Mauritius: Self Sufficient in Eggs
115 eggs/head/year

**Projected Increase in
Consumption & Production**
(2%/year)

Disposal of Spent hens
(1.2 million/year)

✓ **Sold as fresh meat to:**

- Catering Industry
- Food Processors e.g
burger

**Increase value of the meat
through value addition**

Fermentation and Drying

100% dry cured chicken sausage

**More choices for
poultry processed
products**

New Source of Meat

RESEARCH QUESTIONS

- ❑ How suitable are spent hen meat and fat for making dry-cured sausages?
- ❑ What are the processing steps?
- ❑ What are the limiting factors in the process?

HYPOTHESIS



- ❑ Spent hen meat and fat can be used to produce safe and quality dry-cured sausages.

RESEARCH OBJECTIVES

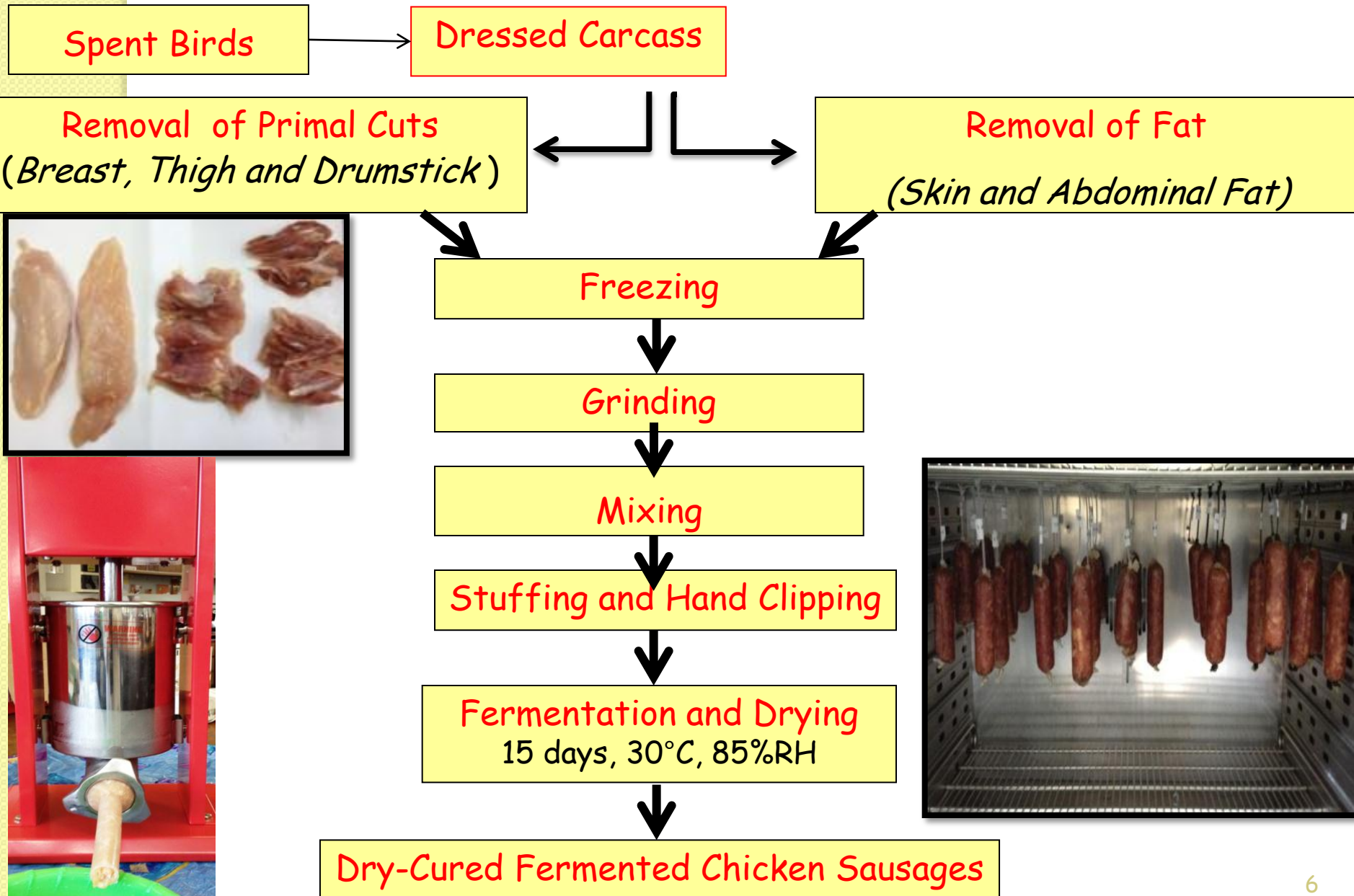
**Formulate a mix
for dry-cured
sausages with
spent hen meat
and fat**

**Design the
process**

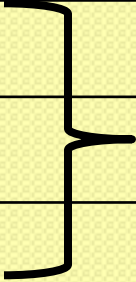
**Determine the
physico-
chemical and
microbial
characteristics
of the dry-
cured product**

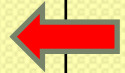
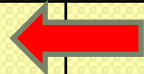
FORMULATION	COMPOSITION
Meat and Fat	87 %
Meat (Breast, Thigh and Drumstick without skin)	
Fat (Skin and Abdominal)	
Non Meat Ingredients	13%
Salt	
Glucose	
Dried Garlic	
Ice-Chilled Water	
Nitrite	

PROCESS FLOW DIAGRAM FOR DRY-CURED FERMENTED POULTRY SAUSAGES

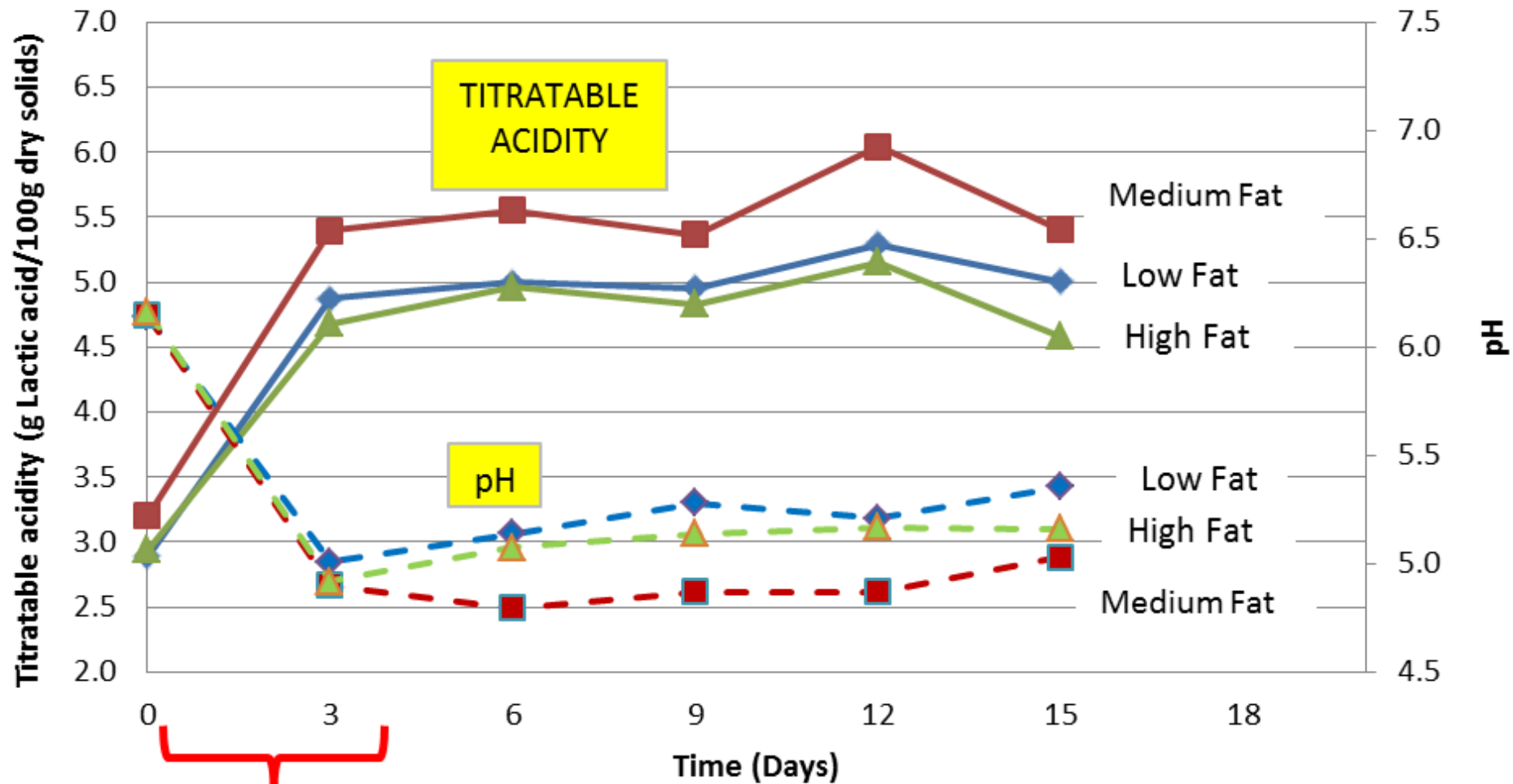


CARCASS CHARACTERISTICS AND MEAT YIELD OF SPENT LAYERS

Parameter	Mean±SD (n=10)	%	Broilers
Live Body Weight (g)	1632±150		2000-2200
Carcass Weight (g)	1037±108		1400-1700
Dressing Percentage (%)		63	75%
Total Meat and Fat Yield	686±74	66	
Breast* 	286±50	27	500-550
Thigh*	252±19	24	600-700
Drumstick*	148±12	14	
Wings (with skin)	152±17	14	
Skin (with fat)	103±30	11	
Abdominal Fat pad	26±5	2	50-60

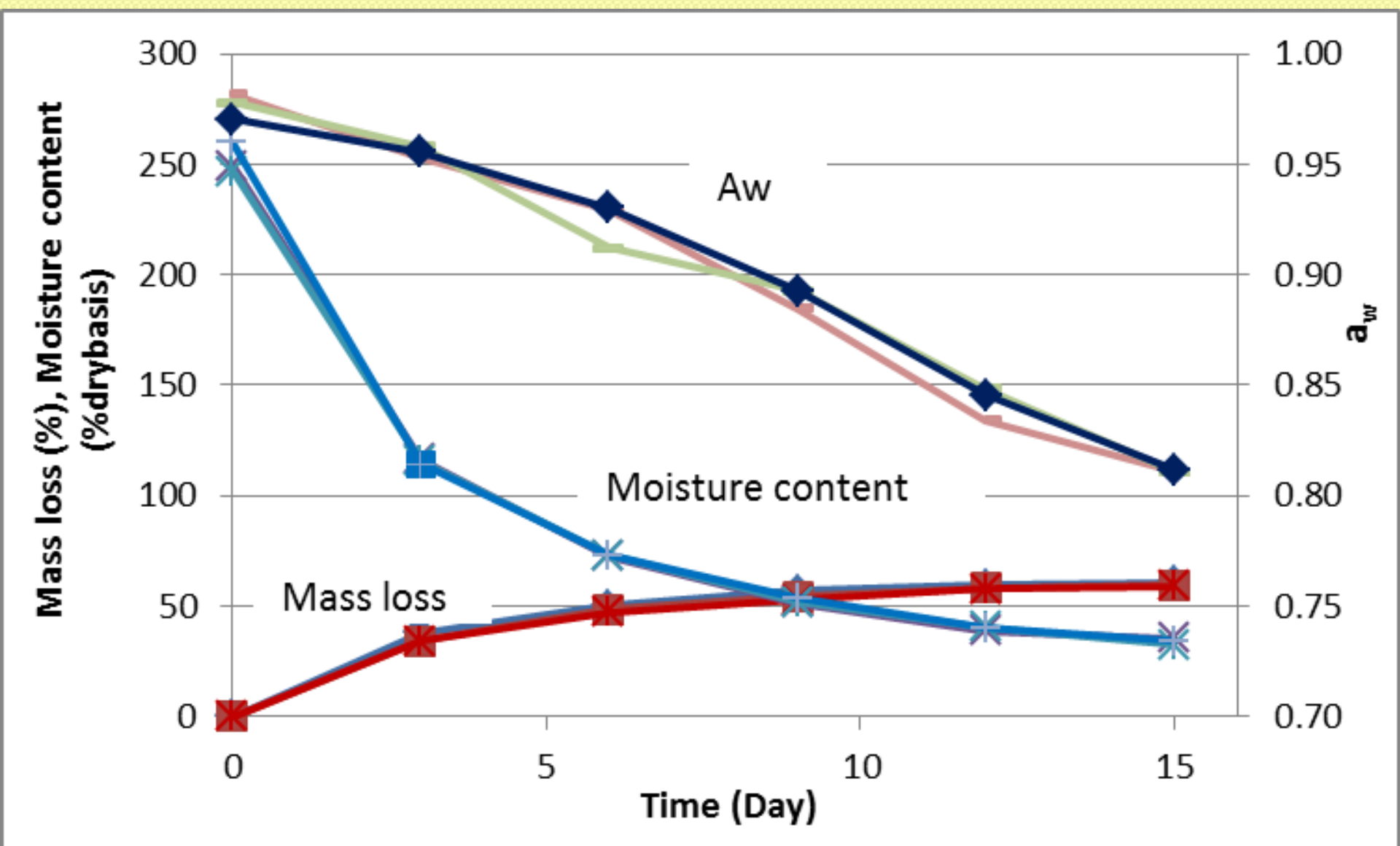


TITRATABLE ACIDITY AND pH

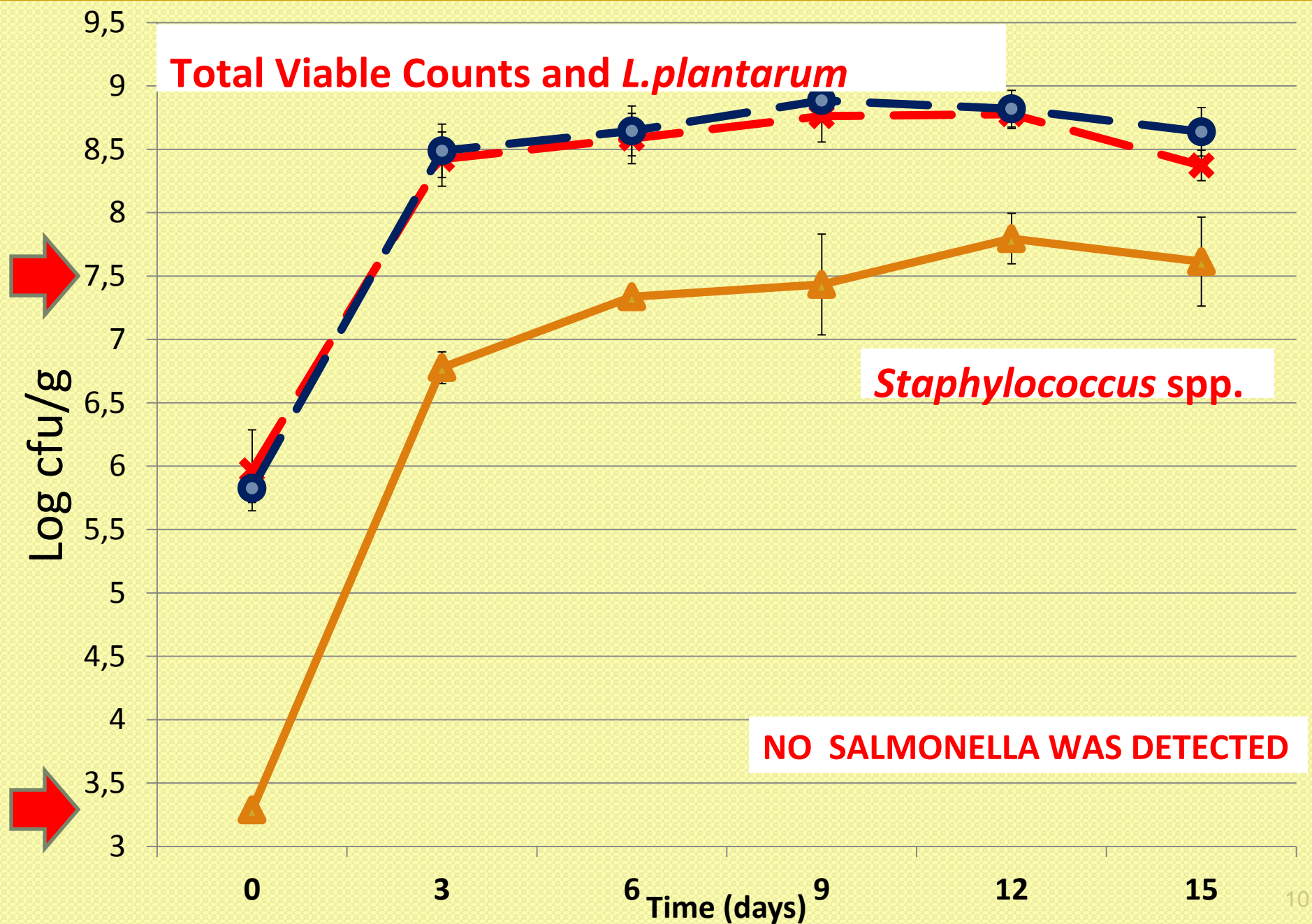


Rapid drop in pH in 3 days

MASS LOSS, MOISTURE CONTENT & WATER ACTIVITY



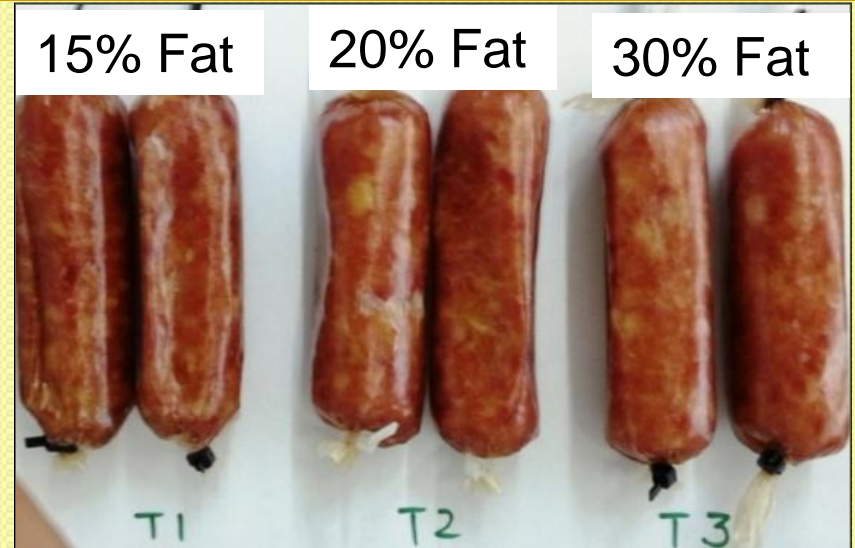
MICROBIOLOGICAL QUALITY



COLOUR OF SAUSAGES



**Initial Sausage Colour at Day 0
(Stuffing)**

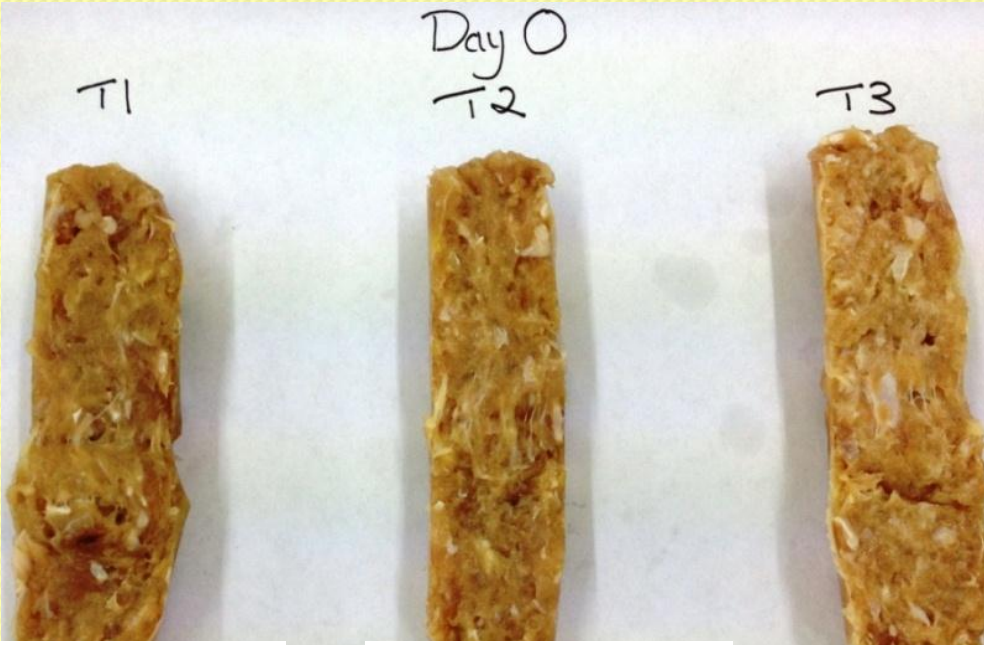


**Final Colour at Day 15
(End of fermentation/drying)**



**Mould growth on the outer
surface of the casing at day 3**

COMPACTNESS OF THE DRY CURED SAUSAGES



Day 0 (Stuffing)

15% Fat

20% Fat

30% Fat

Day 15
(End of
fermentation/drying)



CONCLUSION

Dry Cured Poultry Sausage

- ❑ Technologically feasible
- ❑ Characteristic brick-red colour
- ❑ No major differences among fat levels

Further research

- ❑ Testing other types of LAB starter cultures
- ❑ Optimising the fermentation/drying temperature and relative humidity
- ❑ Fine tuning % composition of ingredients
- ❑ Inhibiting Staphylococcus and mould growth

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THANK YOU