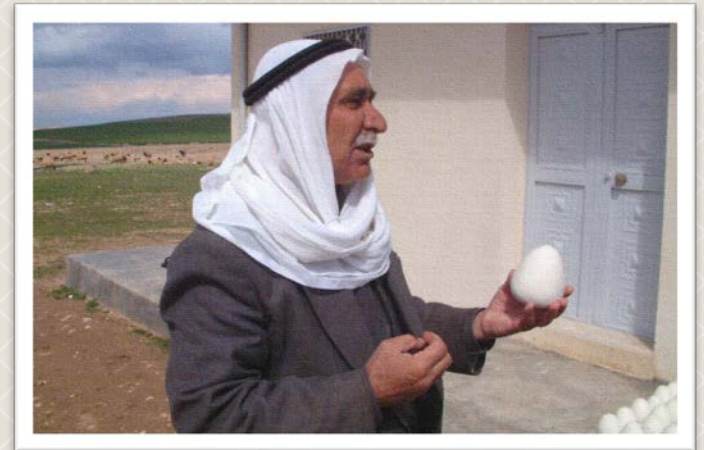


Qualitative characteristics of traditional Jordanian Jameed and a way to improve quality and reduce health risks

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What is Jameed?

Is a fermented dried dairy product in the form of very hard balls.



Is hard dry skimmed yogurt that is a popular and main ingredient of *Mansaf* a traditional Jordanian dish



The context in the Middle East

- ⦿ Sheep milk and dairy products are important ingredients of the middle eastern cuisine
- ⦿ Sheep contribute substantially to farmers' incomes and to family nutrition
- ⦿ Population, urban areas and livestock product markets are expanding
- ⦿ Farmers are resorting to intensify their production systems to target the market demands

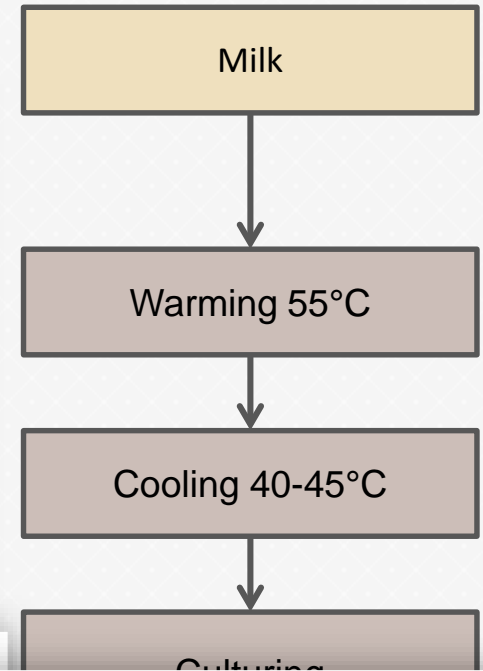
Preliminary study

- ⦿ Assessment of local knowledge
- ⦿ Collect information on constraints of the production systems
- ⦿ Validation of collected information
 - Processing methods
 - Constraints related to processing
 - Problem of un fermented yogurt

Management of small ruminants

- ⦿ Feeding
- ⦿ Milking
- ⦿ Housing

Traditional Jameed



Quality issues

- ⦿ Poor hygiene and sanitation
- ⦿ Milk is processed without enough thermal treatment.
- ⦿ Uncontrolled fermentation process



Observation



Sampling of milk and Jameed

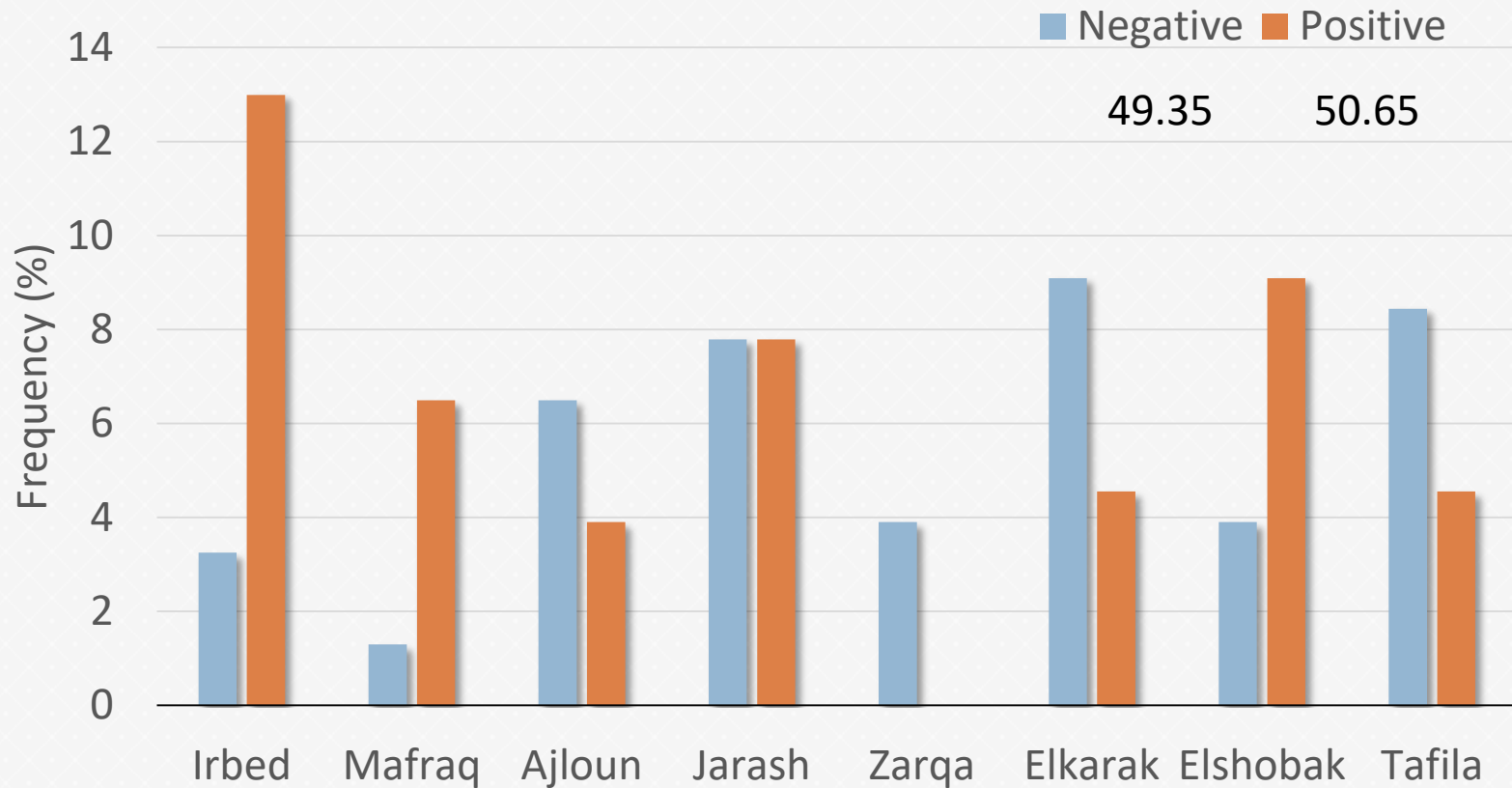
- ⊙ Jameed samples were collected from the Jordanian local market
- ⊙ Product characteristics
 - > total solids
 - > salt
 - > acidity
- ⊙ Product quality
 - > Brucella, Chlamydia and Q fever ELISA Kits (IDEXX).
 - > Antibiotic residues (EuroClone).

Quality of milk

- Almost 52% of analyzed samples had high level of electric conductivity

	Fat (%)	SNF (%)	Lactose (%)	Protein (%)	EC (mS/cm)	SCC (cell/ml)
Average	6.48	10.39	5.69	3.77	4.75	1,215,436
Min	1.15	6.55	3.44	2.48	3.36	72,448
Max	19.26	34.98	15.72	10.48	10.4	6,798,667
n	250	257	255	256	254	99
Stand. Dev.	2.00	2.13	0.85	0.63	1.04	1,386,666

Antibiotic residues in Jameed



Chemical properties of sampled Jameed

	Fat (%)	Total Solids (%)	Ash (%)	Salt (%)	pH
Average	10.65	77.61	12.54	12.18	3.76
Min	3.98	62.04	9.13	9.56	3.64
Max	33.34	92.98	15.18	14.83	3.97
St. Dev.	7.85	9.38	1.7	1.80	0.1

Diseases

⦿ Brucella

> seroprevalence values

sheep flocks 22.2% (95% CI: 16.5-28.8)

goat herds 45.4% (95% CI: 30.3-61.6)

(Prev Vet Med. 2015,118:387-96)

⦿ Q fever

> 12% in aborted animals

(Ministry of Agriculture)

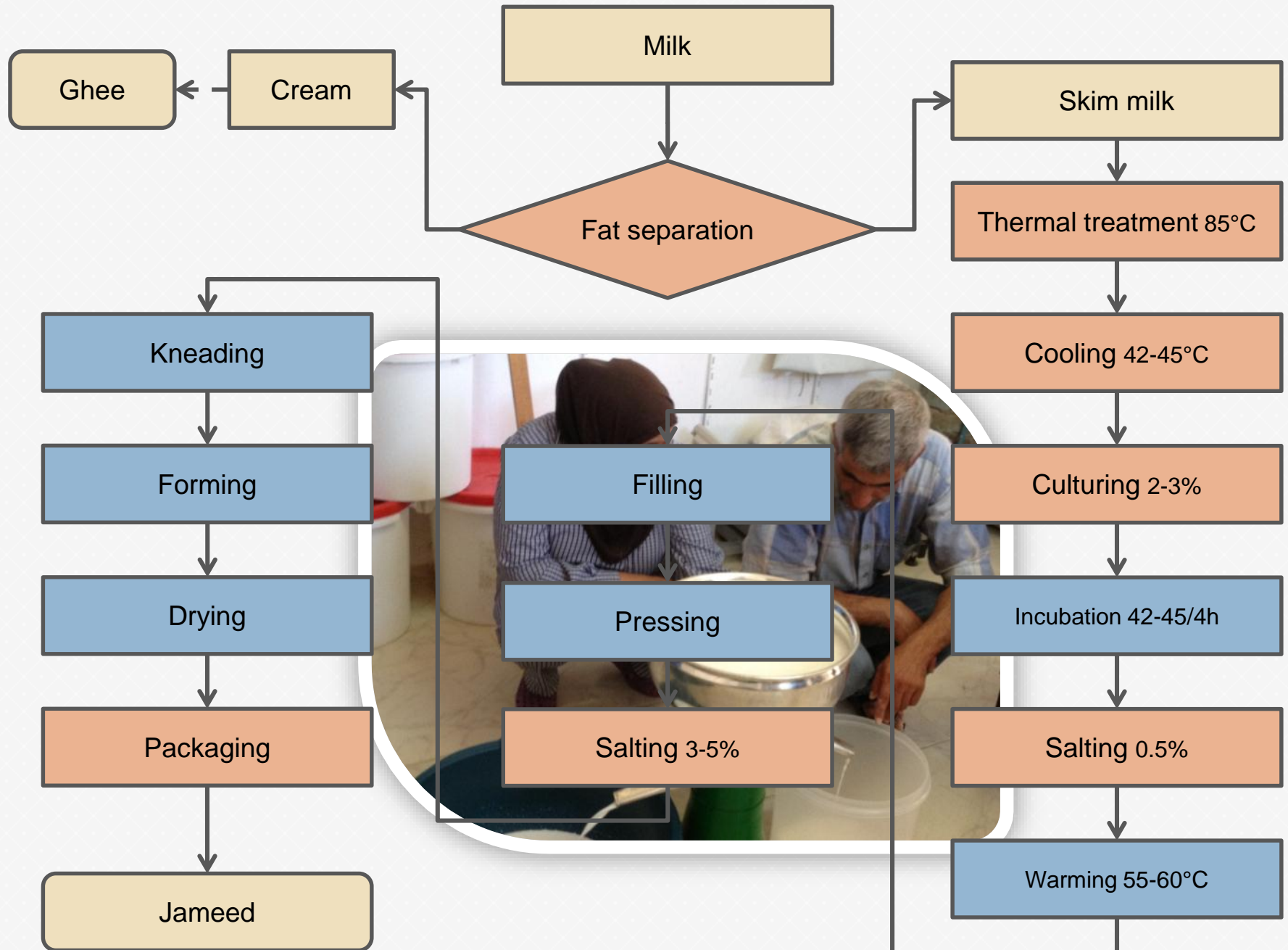
⦿ Chlamydia

(Trop Anim Health Prod. 2014, 46:1407-12)

Improved processing method

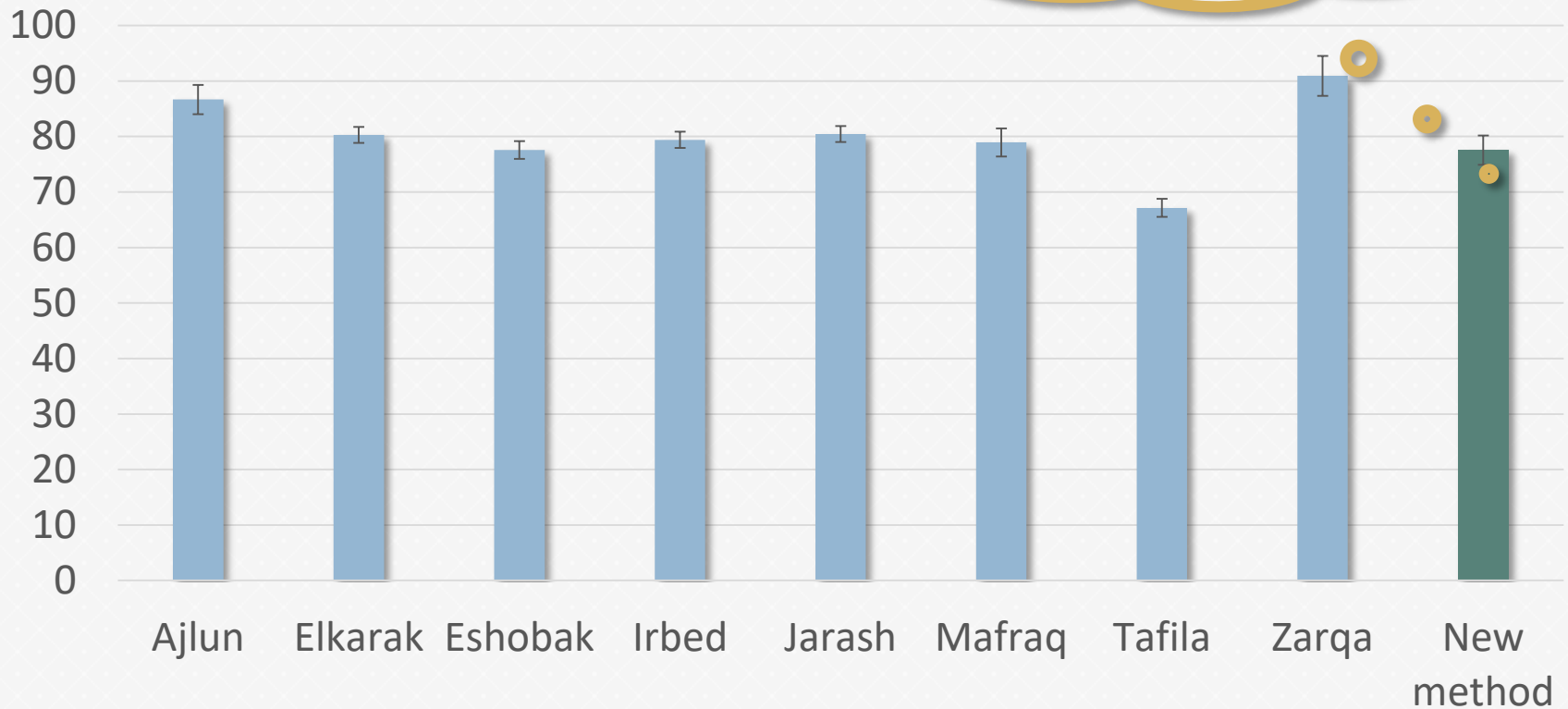
- ⦿ Research
- ⦿ Testing with producers
- ⦿ Dissemination
- ⦿ Follow up





Total solids of the product (%)

**Only 3 days
vs 6-10 days**



Improved homogeneity

	Fat (%)	
	Modified	Traditional
Average	3.27	10.65
Min	3.21	3.98
Max	3.34	33.34

Conclusion

To improve quality and product safety:

- ◎ Thermal treatment of milk
 - At least milk pasteurization
- ◎ Enhance drying procedure
 - Fat separation technique
- ◎ Improve quality
 - Product homogeneity
 - Reduced salt
 - Use of suitable dairy culture



Thank you



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