



Modern Goat Farming in the Middle East

SUCCESS STORY IN IRAQ

BY:DR.ARKAN SANAHMMED

Farm
Rasan
كىلگەي ئاژەلداری راسان

Rasan Dairy Farm



- ▶ Started in 2021 by importing 345 doeling and 15 bucks from Netherlands.
- ▶ The total herd now is 1300 goats.

Focus on Saanen goats

- Biggest breed in the world
- Suitable for different climates
- Suitable for commercial big and small farms
- Good character and easy to work with
- High natural health
- Suitable for different breeding goals



Goat Farming Business in Iraq



Goats populations in Iraq

- About 1.5 million heads .

“Rasan Dairy Goat, is the only dairy goat farm in Iraq”

↖ distributed all over the country.

- ▶ 12.5% in the southern.
- ▶ 44.2% central .
- ▶ 43.3% northern parts of the country (Kurdistan)

(Food and Agriculture Organization). (2014).



- ▶ Goats in Iraq usually found along together with sheep, graze on natural pasture for more than 8 months annually. They raised primarily for meat, they are well adapted environmentally (we have real four season).

Goat breeds

- ▶ All goat breeds , they are using for meat and hair production.
- ▶ No goat milk breeds in Iraq before , Rasan dairy goat.



- # ► Diseases.

- ▶ According to FAO, in 2022, while bovine milk accounted for 81% of global milk production , goat-based milk only contributed 2%.
- ▶ Poor farming technology comparing to diary cow farming.
- ▶ Less scientific researches.

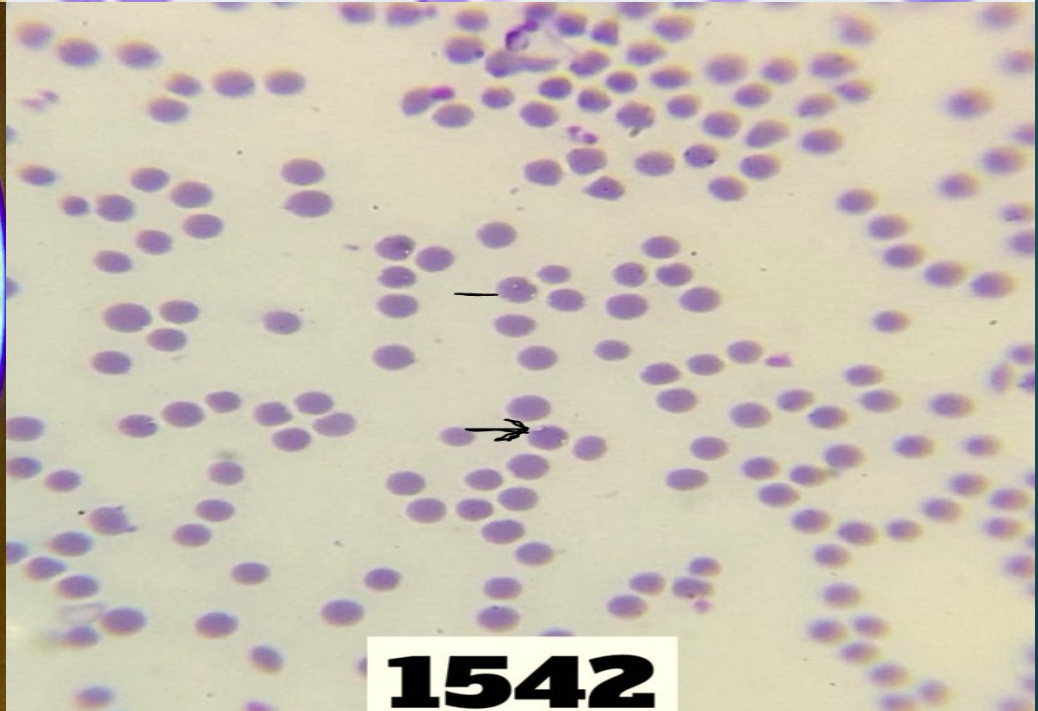
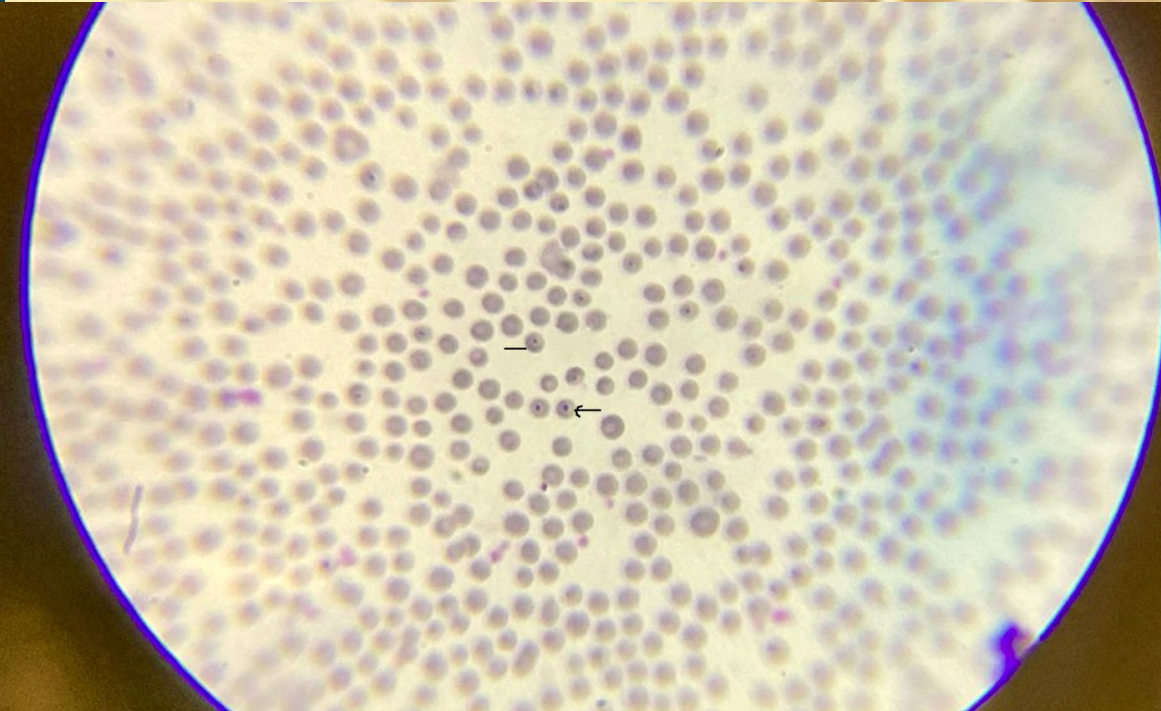
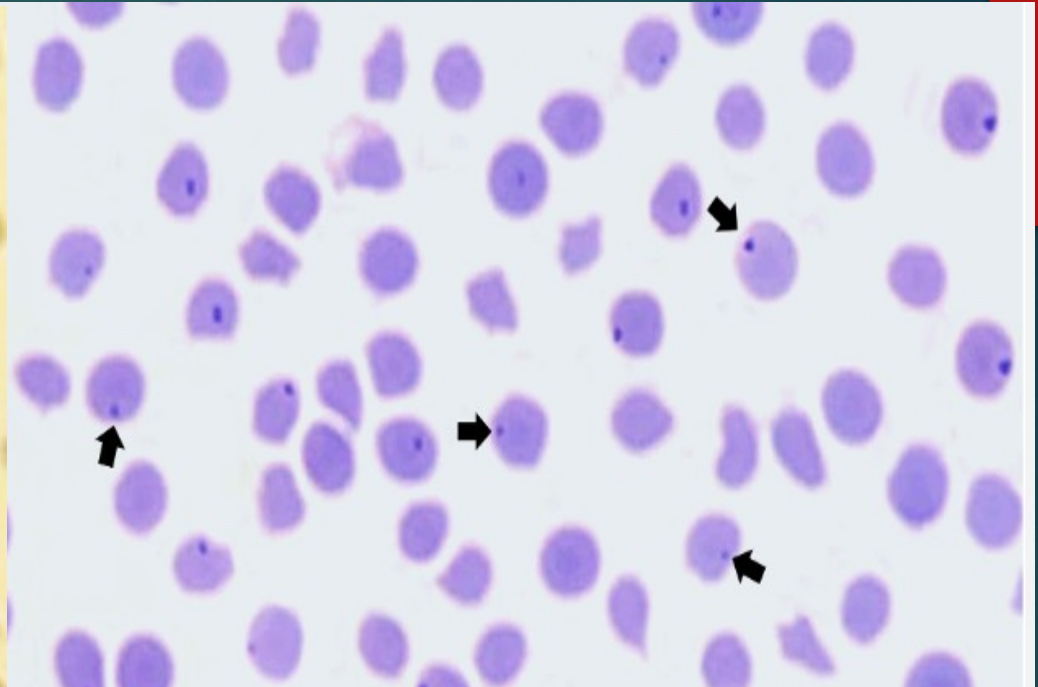
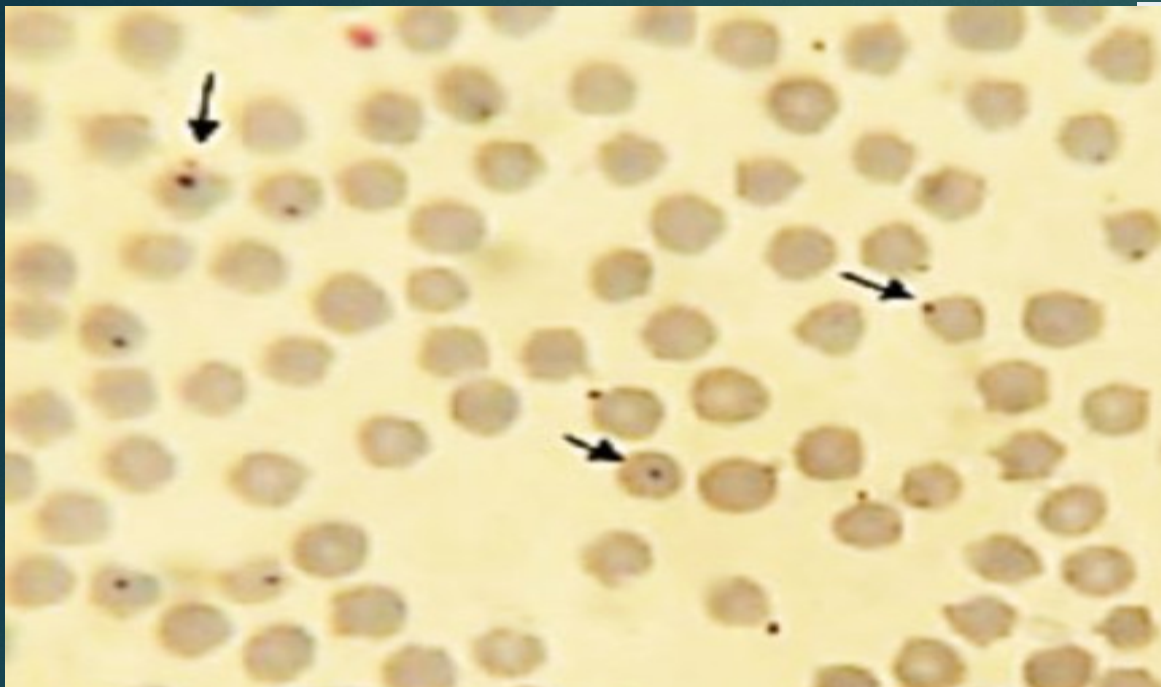
Milk prices:

- ▶ Cow milk 0.66 USD (1000 IQD)
- ▶ Goat Milk 0.90 USD (1350 IQD)





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halabjagroup
 گروپی هه‌له‌بجە
 پەڕێ-پۆڕێ-هه‌له‌بجە



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Handling ..Rasan Goat Farming challenges:

- ▶ New and growing farming business .
- ▶ Milk prices, goat milk was not familiar by customers.
- ▶ Non skilled workers.
- ▶ Diseases.

Bedding type:
deep litter with lime powder.



Ventilation type



Heat stress handling in goats

- ▶ Heat stress affects sheep and goat performance by decreasing dry matter intake, while increasing the need for water. This, in return, has a direct impact on weight gain and milk production. Although sheep and goats are more heat-tolerant than other ruminants (e.g. cows), it is important to understand and identify when they may be experiencing stress.


South Dakota State University (SDSU), Livestock Stress Tool (THI 75-80)

TABLE 1. SHEEP AND GOAT TEMPERATURE HUMIDITY INDEX (THI)

Temp. °F	Relative Humidity (%)															
	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
50°F	54	53	53	53	53	52	52	52	52	52	51	51	51	51	50	50
55°F	56	56	56	56	56	56	56	56	56	56	55	55	55	55	55	55
60°F	59	59	59	59	59	59	59	60	60	60	60	60	60	60	60	60
65°F	62	62	62	62	63	63	63	63	63	64	64	64	64	64	65	65
70°F	65	65	65	66	66	66	67	67	67	68	68	68	69	69	69	70
75°F	68	68	68	69	69	70	70	71	71	72	72	73	73	74	74	75
80°F	70	71	72	72	73	73	74	75	75	76	76	77	78	78	79	79
85°F	73	74	75	75	76	77	78	78	79	80	81	81	82 ^a	83 ^a	84 ^b	84 ^b
90°F	76	77	78	79	79	80	81	82 ^a	83 ^a	84 ^b	85 ^b	86 ^c	86 ^c	87 ^c	88 ^c	89 ^c
95°F	79	80	81	82	83	84 ^b	85 ^b	86 ^b	87 ^c	88 ^c	89 ^c	90 ^c	91 ^c	92 ^c	93 ^c	94 ^c
100°F	82 ^a	83 ^a	84 ^b	85 ^b	86 ^b	87 ^c	88 ^c	90 ^c	91 ^c	92 ^c	93 ^c	94 ^c	95 ^c	97 ^c	98 ^c	99 ^c

THI Levels: ^aModerate (yellow) 82 to < 84°F; ^bSevere (orange) 84 to < 86°F; ^cExtreme (red) >86°F



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- ▶ In comparison to cattle, goats are better suited to hot environments due to a smaller body mass in addition to lower maintenance feed requirements and high digestive efficiency (Silanikove, 2000).
 - ▶ However, they do still undergo heat stress, and variations between breeds, including sweating rate and coat thickness, can influence heat stress levels for goats. Salama et al. (2014) noted ideal THI of 60-65
 - ▶ When this THI was above 65, dry matter intake and milk production both decreased in dairy goats; while the milk production decrease was not as critical, the coagulation properties were compromised, making heat stress management of particular interest to goat cheese producers (Salama et al., 2014).

- ▶ <https://www.erp-information.com/calculators/temperature-humidity-index-thi-calculator>

Tdb °C	Tdb °F	Relative Humidity																	
		10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90	95
5	41	49.8	49.3	48.8	48.3	47.9	47.4	46.9	46.4	45.9	45.4	44.9	44.4	43.9	43.4	43.0	42.5	42.0	41.5
6	43	50.7	50.3	49.8	49.4	49.0	48.5	48.1	47.6	47.2	46.8	46.3	45.9	45.4	45.0	44.6	44.1	43.7	43.2
7	45	51.6	51.2	50.8	50.5	50.1	49.7	49.3	48.9	48.5	48.1	47.7	47.3	46.9	46.6	46.2	45.8	45.4	45.0
8	46	52.5	52.2	51.9	51.5	51.2	50.8	50.5	50.2	49.8	49.5	49.1	48.8	48.4	48.1	47.8	47.4	47.1	46.7
9	48	53.4	53.2	52.9	52.6	52.3	52.0	51.7	51.4	51.1	50.8	50.5	50.2	49.9	49.7	49.4	49.1	48.8	48.5
10	50	54.4	54.1	53.9	53.6	53.4	53.1	52.9	52.7	52.4	52.2	51.9	51.7	51.5	51.2	51.0	50.7	50.5	50.2
11	52	55.3	55.1	54.9	54.7	54.5	54.3	54.1	53.9	53.7	53.5	53.3	53.1	53.0	52.8	52.6	52.4	52.2	52.0
12	54	56.2	56.0	55.9	55.7	55.6	55.5	55.3	55.2	55.0	54.9	54.7	54.6	54.5	54.3	54.2	54.0	53.9	53.7
13	55	57.1	57.0	56.9	56.8	56.7	56.6	56.5	56.4	56.3	56.2	56.1	56.1	56.0	55.9	55.8	55.7	55.6	55.5
14	57	58.0	57.9	57.9	57.9	57.8	57.8	57.7	57.7	57.6	57.6	57.6	57.5	57.5	57.4	57.4	57.3	57.3	57.2
15	59	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	58.9	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0	59.0
16	61	59.8	59.9	59.9	60.0	60.0	60.1	60.1	60.2	60.3	60.3	60.4	60.4	60.5	60.5	60.6	60.6	60.7	60.7
17	63	60.7	60.8	60.9	61.0	61.1	61.2	61.3	61.5	61.6	61.7	61.8	61.9	62.0	62.1	62.2	62.3	62.4	62.5
18	64	61.6	61.8	61.9	62.1	62.2	62.4	62.6	62.7	62.9	63.0	63.2	63.3	63.5	63.6	63.8	63.9	64.1	64.2
19	66	62.5	62.7	62.9	63.1	63.4	63.6	63.8	64.0	64.2	64.4	64.6	64.8	65.0	65.2	65.4	65.6	65.8	66.0
20	68	63.4	63.7	64.0	64.2	64.5	64.7	65.0	65.2	65.5	65.7	66.0	66.2	66.5	66.7	67.0	67.2	67.5	67.7
21	70	64.4	64.7	65.0	65.3	65.6	65.9	66.2	66.5	66.8	67.1	67.4	67.7	68.0	68.3	68.6	68.9	69.2	69.5
22	72	65.3	65.6	66.0	66.3	66.7	67.0	67.4	67.7	68.1	68.4	68.8	69.1	69.5	69.8	70.2	70.5	70.9	71.2
23	73	66.2	66.6	67.0	67.4	67.8	68.2	68.6	69.0	69.4	69.8	70.2	70.6	71.0	71.4	71.8	72.2	72.6	73.0
24	75	67.1	67.5	68.0	68.4	68.9	69.3	69.8	70.2	70.7	71.1	71.6	72.0	72.5	72.9	73.4	73.8	74.3	74.7
25	77	68.0	68.5	69.0	69.5	70.0	70.5	71.0	71.5	72.0	72.5	73.0	73.5	74.0	74.5	75.0	75.5	76.0	76.5
26	79	68.9	69.5	70.0	70.6	71.1	71.7	72.2	72.8	73.3	73.9	74.4	75.0	75.5	76.1	76.6	77.2	77.7	78.3
27	81	69.8	70.4	71.0	71.6	72.2	72.8	73.4	74.0	74.6	75.2	75.8	76.4	77.0	77.6	78.2	78.8	79.4	80.0
28	82	70.7	71.4	72.0	72.7	73.3	74.0	74.6	75.3	75.9	76.6	77.2	77.9	78.5	79.2	79.8	80.5	81.1	81.8
29	84	71.6	72.3	73.0	73.7	74.4	75.1	75.8	76.5	77.2	77.9	78.6	79.3	80.0	80.7	81.4	82.1	82.8	83.5
30	86	72.5	73.3	74.0	74.8	75.5	76.3	77.0	77.8	78.5	79.3	80.0	80.8	81.5	82.3	83.0	83.8	84.5	85.3

Figure 1. THI for goats based on dry bulb temperature and relative humidity. Blue background indicates potential cold stress, red background indicates potential heat stress, and green background is preferred temperature/humidity combinations.

Heat stress affect in dairy goats

- ▶ •Heat stress decreases milk production and alters metabolism and behavior.
- ▶ •Pancreas of heat-stressed goats secretes lower insulin after glucose infusion.
- ▶ •Lipid tissue of heat-stressed goats is less sensitive to lipolytic signals.
- ▶ •Heat stress does not affect eating bouts but makes the duration shorter.
- ▶ •Heat stress increases drinking bouts without affecting the duration of each bout.

“Metabolic and behavior responses of lactating goats under heat stress , Ahmed et al , 2012”

How Goats Cool Themselves

- ▶ How Goats Cool Themselves The dominant method of transferring heat from a goat can vary based upon the air temperature and humidity.
- ▶ When the air is cooler than the animal's surface, the animal will lose heat to the air. As the air temperature warms, the smaller temperature difference between the animal and air slows heat transfer, and eventually the goat can be cooler than the air, which means the goat receives heat from the air.
- ▶ In such circumstances, evaporative cooling becomes crucial. In order for water to change from a liquid to a vapor, it needs a heat source, like the goat. Evaporation will remove heat from the goat; however, it is critical that the humidity not be very high. Evaporation rates are increased when air passing above the coat has a lower humidity; as humidity levels rise the amount of heat a goat can dissipate will decrease. Also

Strategies to Reduce Heat Stress

- ▶ In order to reduce heat stress, there are a couple strategies that could be implemented. First, solar load on the goats can be reduced by providing shade. Shade reduces one major component of the heat load on the goats. The goats can also be wetted (water added) to increase the rate of evaporation. Because goats have lower sweating rates than cattle, in moderate and low humidity climates, adding water to the goats can provide very effective additional cooling. The third strategy is to provide air speed by using fans. Additional air speed can both increase the rate of evaporation and the rate that heat is transferred from the goats to the air

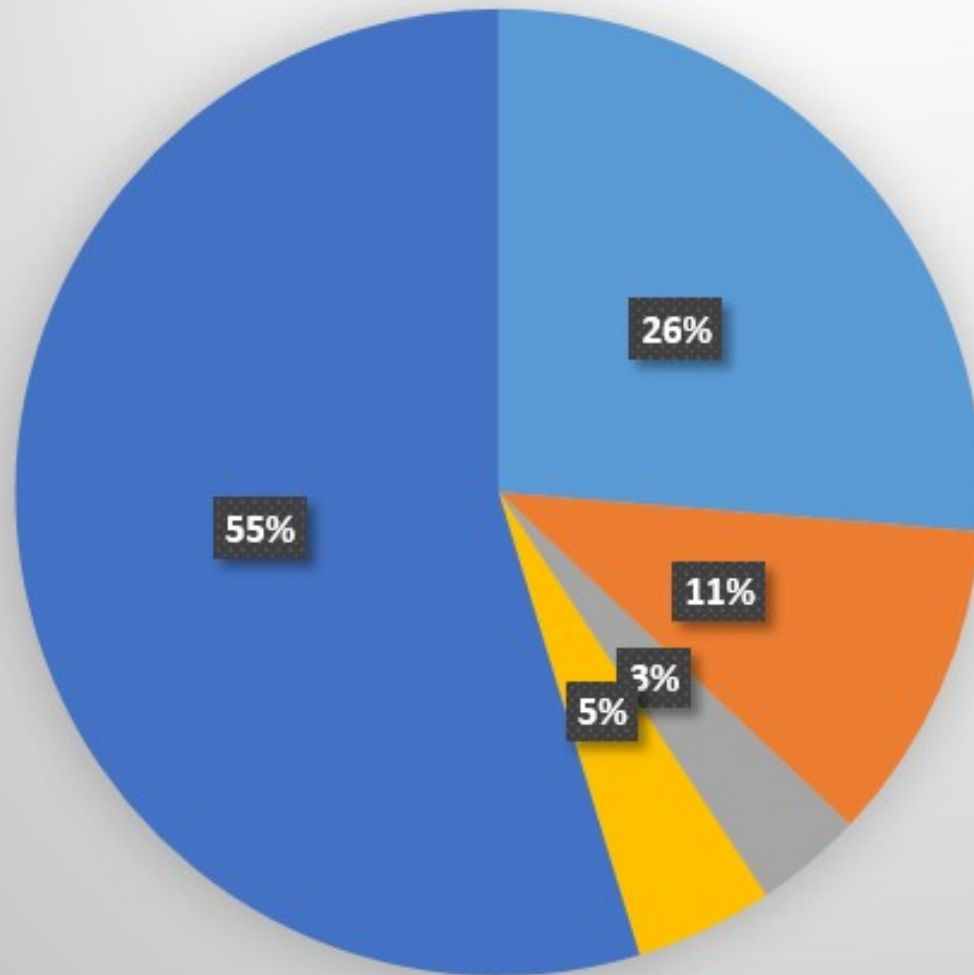
Feeding in Rasan Farm



by:peshrawphoto

Feed cost

Costs



Salary and payments

Other running cost

Maintenance

Treatment

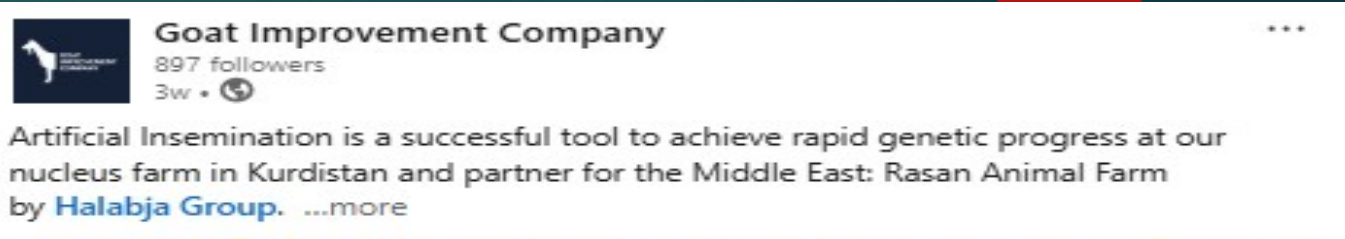
Feed

ELDA –Egam management software



Breeding program:

- ▶ Using AI technique fore 10% of the herd.
- ▶ Natural mating for the rest 90%.



Kidding management:



Health management:

- 1- Biosecurity.
- 2- veterinary care .





Rasan as part of GLC



**GOAT
IMPROVEMENT
COMPANY**



World wide
Nucleus
farms

GIC Saanen farmers all over the world



"We breed for the most suitable goat that can survive on our farm at an altitude of 1200 meters in the mountains. This requires a goat that remains highly productive even in difficult circumstances and produces many kg of fat and protein to guarantee the profitability of the farm. We use the GIC Indexes intensively to choose the



"Despite the high temperatures in Kurdistan, my goats must be able to maintain a long, persistent lactation without any problems. What's really nice is that we get what we bred for: a healthy, robust goat, which produces efficiently despite the high temperatures. The GIC Saanen goat has the complete package for us."

**Dr. Arkan Sanahmmed,
Rasan Animal Farm, Kurdistan**



Using AI technique in goats first time in **Iraq**

NH Japio GIC

*The highest available AI buck in the Netherlands
with a top GIC Index of 138*



**GIC Index:
138**





GLC Saanen

Number of goats	41.711
Average number of goats per nucleus farm	1039
Milk kg (350 days)	1256
Fat kg	52
Fat %	4,14
Protein kg	44
Protein %	3,49
Fat + Protein kg	96

December 2024

Yield

- Long lactations
- Volume of milk
- High fat and protein %



Long lactations

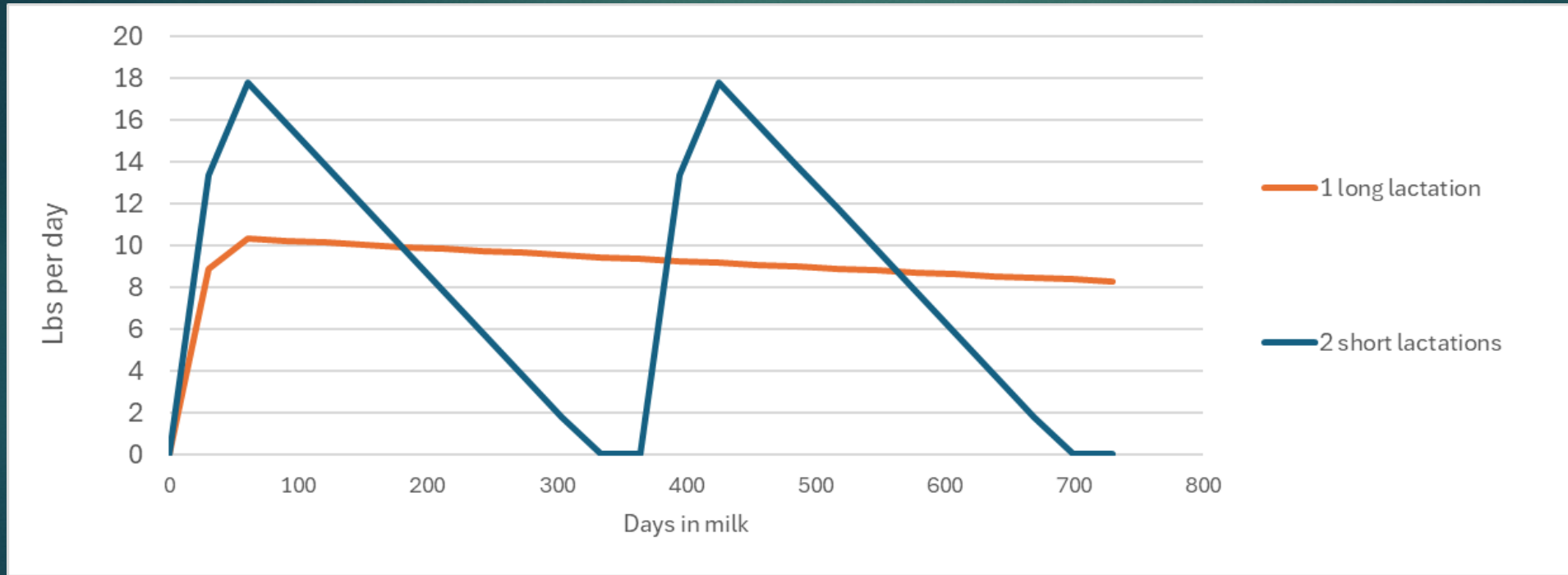
kg milk





GOAT
IMPROVEMENT
COMPANY

Long lactations



1 long lactation

- 10% more milk per day (3300 vs. 3000 lbs. in 365 days)
- Less labor
- Less health issues
- Constant milk flow

GB Joeri GIC

*High milk production, excellent
udders and persistent production*



GIC Index:
126

Why we breed for health and efficient animals?

Challenges in our home markets

- Milk price per cwt: \$36,5 per cwt
- Feed price per cwt: \$18 per cwt
73% of the costs are concentrate costs
- Expensive labor: \$40 per hour
- Health costs: 90% of the herds are free of CAE and CL
100% are free of Q-fever

Rasan Diary short clip

- ▶ <https://youtu.be/hYvPaTHT3eA?si=2w61idMCFg3QSydV>
- ▶ <https://www.youtube.com/watch?v=7z6xXcS3VxI>

Thank you

by:peshrawphoto













by:peshrawphoto

