



SAMPLES NEEDED FOR RESPIRATORY DISEASE STUDY



Stock image of a veterinarian on site at a farm wearing scrubs, monitoring the heartbeat of a dairy goat with a stethoscope.

➔ Main Article

Dairy Goat Health Research Through SDGA

Sustainable Dairy Goat Agrisystems (SDGA) is seeking samples for a respiratory disease study to address high-priority health challenges in dairy goat production while improving antimicrobial stewardship. This study aims to fill an extreme lack of data on what pathogens can cause respiratory disease in dairy goats, which in turn leads to a lack of commercially available tools to prevent (i.e. – effective vaccines) and treat (i.e. –

antibiotics and immune modulatory therapies) the disease. By participating in this research activity, producers will assist the research team in collecting data that will be directly applied to the development of effective vaccines and therapeutics for dairy goats.

Each participating producer will also receive valuable data from the research team on the bacterial pathogens identified on their farm, as well as any antimicrobial resistance present, which may lead to treatment failure. At no time will the personal information of any producer be shared with other producers, and the results of the study will be reported only in aggregate.

Who Should Apply:

Any producer who has an interest in assisting with vital dairy goat health research and is currently experiencing issues with respiratory disease in their herd.

What We Need:

Collection of diagnostic samples by your herd veterinarian, including nasal swabs on acutely ill animals and lung swabs/tissue from any recently deceased animals. After sample collection, the samples will be shipped to the Iowa State University Veterinary Diagnostic Laboratory for free or reduced-cost testing to identify viruses and bacteria that can cause respiratory disease (pneumonia) in goats.

How to Participate:

Prior to sample collection, please contact **515-918-1766** to learn more about how to work with your herd veterinarian to submit samples for this project! Samples can be submitted at any time following confirmation of study eligibility.

➔ Research Article

Management Advice to the California Dairy Goat Industry

Excerpt taken from The Profitability of the California Dairy Goat Industry Study in 2024. Authored by: Jenn Bentley (Dairy Specialist, Iowa State University Extension and Outreach), Roselle Busch (DVM, Associate Specialist, ANR Veterinary Medicine, UC Davis), and Larry Tranel (Dairy Specialist, Iowa State University Extension and Outreach)

Six farms were financially analyzed in California (CA) using 2024 data of incomes, expenses, and per doe metrics for the average (AVE) of the six farms; for

the Higher Profit (HP) three farms; and for the Lower Profit (LP) three farms. These dairy goat farms would be considered larger for most areas of the country with the herd size being 1,390 for the AVE farm; 1,917 for the HP farms and 863 for the LP farms. The total ending assets was approximately \$2 million for the AVE farm; \$3.3 million for the HP farms; and \$0.7 million for the LP farms. Labor Efficiency and milk production often go hand in hand as the top two measures in dairy goat profitability. The number of does per Full Time Equivalent (FTE equals 3,000 hours worked annually) for the AVE farm was 142; for the HP farms was 186; and for the LP farms was 98. The labor efficiency per doe was just 10 does shy of being double that of the LP farms.

Overall, there is a very dramatic difference between the Higher Profit (HP) and Lower Profit (LP) dairy goat herds in California. Milk production per goat and per FTE Laborer were the two most important profit factors followed by capital costs per doe.

Closing the income gap between HP farms and LP farms would require more attention to genetics, feed quality, feed bunk design, kid management, ventilation and labor efficiency. Milk production per doe is a combination of both better genetics and higher feed quality which may increase expenses but with better genetic does, it tends to increase profits.

Feed bunk design issues were noted on many farms. Most issues were high feed losses from in-pen type round bale type feeders. Most issues with lower dry matter intake were from fence-line feed bunks that created “throat-cut” or limited intake. Thus, proper feed bunk design becomes critical to minimizing feed wastage and improving dry matter intake.

Kids survival and sales represent another important opportunity to improve farm income. This not only generates revenue from selling replacement doelings and bucklings but reduces expenses with purchasing replacement does. High kid mortality or poor growth can delay and reduce future milk productivity and milk income.

Key areas to evaluate within a kid-rearing program include:

- Proper dry doe management to ensure optimal body condition at kidding.
- Effective colostrum management for adequate intake at birth
- Sanitation of feeding equipment to reduce pathogen load
- Hygiene of kidding areas and kid pens that are clean, dry, well-ventilated, and provide shelter from cold drafts and weather
- Kid health protocols targeting common diseases such as coccidiosis, pneumonia, E. coli, salmonella, etc.

Inadequate ventilation increases humidity and ammonia buildup, stressing goats and predisposing them to illness. Proper airflow reduces respiratory disease risk and maintains milk production.

Lastly, labor efficiency is highly correlated to the milking parlor and milking management. Low-cost milking parlors can often be updated without major investment to allow one person to milk 100 plus does per hour. This would better allow the management of 175 plus does per person and allow labor to be less than 20% of total expenses.

(Full article included in this Newsletter packet)

➔ **Research Article**

Body Condition Scoring and Breeding Readiness in Dairy Goat Doelings: Setting Replacements Up for Lifetime Success

Excerpt taken from Body Condition Scoring and Breeding Readiness in Dairy Goat Doelings: Setting Replacements Up for Lifetime Success. Authored by: Jenn Bentley (Dairy Specialist, Iowa State University Extension and Outreach)

While raising dairy goats is highly labor-intensive before weaning, what happens between weaning and first breeding has a significant impact on lifetime milk production, reproductive success, and herd longevity. Two of the most important tools for guiding this stage are body condition scoring (BCS)

and breeding readiness assessments.

Monitoring body condition and growth ensures that doelings are neither over-conditioned nor underdeveloped when they enter the breeding pen. This article outlines practical strategies for using BCS, growth benchmarks, and management practices to prepare doelings for a healthy first pregnancy and productive first lactation.

Why Body Condition Score Matters
Body condition scoring is a hands-on evaluation of a goat's fat and muscle reserves using a 1–5 scale. While often associated with mature does, BCS is just as important in young stock, providing information that body weight alone can't reveal.

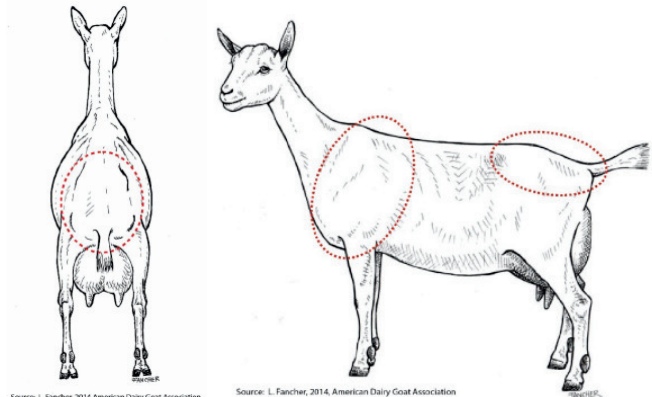
How the Body Condition Score (BCS) should be assessed monthly from weaning until breeding. Score visually using three key areas to assess muscle fullness and fat cover. Site 1 includes the neck, brisket, point of shoulder, ribs above point of elbow, site 2 includes the loin, rump, hips, and pins, and site 3 includes tail and tailhead area.

Doelings that are too thin may not cycle regularly, have lower or poor conception rates, and struggle to maintain pregnancy. Over-conditioned doelings may deposit fat around developing mammary tissue, potentially reducing future milk yield.

BCS helps identify issues before they affect future development by accurately assessing actual frame growth and

muscle development, rather than just weight gain. Doelings that are evenly sized and well-conditioned are easier to manage, cycle more consistently, and conceive more predictably when grouped with a buck.

(Full article included in this Newsletter packet)



Medical diagram of a dairy goat highlighting the areas designated as Site 1, Site 2, and Site 3 by BCS assessment

➔ Highlighting Recent Webinar

Understanding Community Capitals

A recent SDGA webinar brought together dairy goat producers, researchers, and extension experts to explore the seven community capitals—natural, cultural, human, social, political, financial, and built—and their roles in building successful, sustainable dairy goat operations. Through interactive discussion and polling, participants identified financial and human capital—including access to funding, labor, skills, and long-term commitment—as the most critical foundations for both new and expanding enterprises. The discussion

highlighted common issues producers face, such as finding goat-specific expertise, navigating regulations that do not always fit dairy goat activities, and the value of learning directly from other producers. Participants shared practical insights from their own farms and other regions, emphasizing how connection, shared experiences, and better support can strengthen dairy goat operations.

Upcoming Events & Engagement Opportunities



Take Our Survey: Dairy Goat Life Cycle Assessment (LCA)

SDGA invites you to take part in a national research project focused on making dairy goat farming more sustainable, profitable, & resilient. With dairy goats becoming more popular for their adaptability & efficiency, it's time to better understand how our farms impact the environment — & how we can improve. Contact 515-918-1766 or email sdga@iastate.edu for more information.



Save the Date Youth Workshop with SDGA at 2026 ADGA National Show

Join Sustainable Dairy Goat Agrisystems (SDGA) on June 29 from 8 AM - 12 PM ET, and June 30 from 1 PM - 5 PM ET, during the ADGA National Show in West Springfield, Massachusetts, for a hands-on workshop led by Iowa State University & University of Tennessee-Knoxville. Open to youth who have completed 9th grade or older.

Note: Additional information, including registration details, will be available soon.



Dairy Goat Extension & Education

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The Profitability of the California Dairy Goat Industry Study in 2024

Six farms were financially analyzed in California (CA) using 2024 data. To the right is a table displaying incomes, expenses, and per doe metrics for the average (AVE) of the six farms; for the Higher Profit (HP) three farms; and for the Lower Profit (LP) three farms. These dairy goat farms would be considered larger for most areas of the country with the herd size being 1,390 for the AVE farm; 1,917 for the HP farms and 863 for the LP farms. The total ending assets was approximately \$2 million for the AVE farm; \$3.3 million for the HP farms; and \$0.7 million for the LP farms.

At first glance, it would seem the average herd size of the HP farms correlate to higher profitability but know the smallest farm in the HP group was around 500 does and the largest farm in the LP group was around 2,500 does. Also, know that in a small sample size such as this, one farm can shift the average quite dramatically.

The focus on this analysis will be on a per doe basis on the right side of the table as per doe benchmarks are more easily applied to any given herd.

Milk sales per doe for the AVE farm was \$1,177; for the HP farms was \$1,369; and for the LP farms was \$752. The addition of sales of cull does, doelings, bucklings and other incomes gave total cash incomes per doe for the AVE farms of \$1,257; for the HP farms of \$1,451; and for the LP farms of \$827. The major difference between the HP and LP farms was on the income side of the equation.

CA Model Dairy Goat Analysis 2024	CA AVE (6)	CA HP (3)	CA LP (3)	AVE/doe	HP/doe	CA Low
Average Herd Size.....	1390	1917	863			
Crop Acres.....	3	4	1			
Total Ending Assets.....	\$1,988,475	\$3,298,053	\$678,897			
Total Cwts of Milk Sold.....	28,385	43,116	13,655	20.42	22.50	7.12
Total Cwt Eq. of Milk Sold	28,590	45,700	11,480	20.57	23.84	5.99
Milk Sales.....	\$1,636,462	\$2,623,314	\$649,609	\$1,177	\$1,369	\$752
Cull Doe Sales	\$48,202	\$76,938	\$19,467	\$35	\$40	\$23
Kid Sales	\$3,240	\$3,647	\$2,833	\$2	\$2	\$3
Bucklings Sales.....	\$26,456	\$40,114	\$12,798	\$19	\$21	\$15
Other Income.....	\$32,800	\$36,467	\$29,133	\$24	\$19	\$34
Total Cash Income.....	\$1,747,160	\$2,780,479	\$713,841	\$1,257	\$1,451	\$827
Veterinary, Medicine.....	\$21,189	\$27,476	\$14,902	\$15	\$14	\$17
Dairy Supplies.....	\$43,932	\$67,645	\$20,220	\$32	\$35	\$23
Breeding Fees.....	\$2,775	\$5,550	\$0	\$2	\$3	\$0
Feed Purchased.....	\$629,730	\$935,509	\$323,952	\$453	\$488	\$375
Repairs.....	\$57,466	\$89,152	\$25,779	\$41	\$47	\$30
Seed, Chem, Fert.....	\$1,250	\$0	\$2,500	\$1	\$0	\$3
Fuel, Gas, and Oil.....	\$17,747	\$25,072	\$10,422	\$13	\$13	\$12
Utilities.....	\$22,767	\$19,940	\$25,594	\$16	\$10	\$30
Interest Expense (in equity charge).....	\$0	\$0	\$0	\$0	\$0	\$0
Labor Hired.....	\$373,227	\$495,200	\$251,254	\$269	\$258	\$291
Rent, Lease and Hire.....	\$16,440	\$0	\$32,880	\$12	\$0	\$38
Property Taxes.....	\$6,650	\$12,633	\$667	\$5	\$7	\$1
Farm Insurance.....	\$11,927	\$17,321	\$6,533	\$9	\$9	\$8
Other Cash Expense.....	\$29,836	\$25,785	\$33,886	\$21	\$13	\$39
Total Cash Expense.....	\$1,234,936	\$1,721,282	\$748,589	\$888	\$898	\$867
Net Cash Income	\$512,225	\$1,059,197	-\$34,748	\$369	\$553	-\$40
Inventory Change	-\$95,561	-\$163,825	-\$27,297	-\$69	-\$85	-\$32
Net Farm Income	\$416,664	\$895,372	-\$62,045	\$300	\$467	-\$72
Equity@	\$80,808	\$133,945	\$27,671	\$58	\$70	\$32
Return to Labor	\$335,856	\$761,427	-\$89,716	\$242	\$397	-\$104
Inventory Changes						\$0
Feed Inventory.....	\$0	\$0	\$0	\$0	\$0	\$0
Supplies and Other.....	\$0	\$0	\$0	\$0	\$0	\$0
Breeding Livestock.....	-\$7,508	\$0	-\$15,015	-\$5	\$0	-\$17
Income Change	-\$6,616	\$0	-\$13,232	-\$5	\$0	-\$15
Machinery & Equipment.....	-\$30,246	-\$48,658	-\$11,833	-\$22	-\$25	-\$14
Land and Buildings.....	-\$27,708	-\$52,500	-\$2,917	-\$20	-\$27	-\$3
Other Adjustments.....	\$1,996	\$0	\$3,992	\$1	\$0	\$5
Expense Change	\$55,958	\$101,158	\$10,758	\$40	\$53	\$12
Capital Purchases Minus						\$0
Sales Adjustment.....	\$32,095	\$62,667	\$1,524	\$23	\$33	\$2
Depreciation Fair Market Value (FMV).....	\$54,033	\$98,000	\$10,067	\$39	\$51	\$12
Unpaid Labor Cost.....	\$79,956	\$79,911	\$80,000	\$58	\$42	\$93
Unpaid Labor Hours.....	4,039	5,078	3,000	\$3	\$3	\$3
Labor FTE's (Full Time Equivalents)	7.06	9.61	4.52			
Unpaid Labor Earnings per Hour.....	\$143.15	\$312.16	-\$25.87			
Milk Price/Cwt. of Milk Sold.....	\$66.74	\$58.44	\$75.03			
Break-Even Cost /Cwt. Eq.	\$93.13	\$45.72	\$140.55			
Net Return/Cwt. Eq.	-\$26.40	\$12.72	-\$65.52			
Adj.Gross Return per FTE Labor.....	\$177,612	\$259,759	\$95,464			
Return to All Labor per FTE Labor.....	\$60,535	\$113,757	\$7,314			
Number of Does per FTE Labor.....	142	186	98			
Cwts. of Milk Sold per FTE Labor.....	2,708	4,106	1,311			
Pounds of Milk Sold per Doe.....	1,855	2,202	1,508			
Productive Crop Acres per Doe.....	0.00	0.00	0.00			
Capital Cost per Doe.....	\$126	\$106	\$146			
Capital Invested per Doe.....	\$1,662	\$1,390	\$1,935			
All Labor Costs per Doe.....	\$727	\$298	\$1,156			
Fixed Cost/Doe(dep.int,repair,tax,ins).....	\$186	\$171	\$202			
Livestock over Total Investment Percent.....	40%	42%	38%			
Cash Expense/Cash Income w/o Labor&Int	70%	47%	94%			
All Labor as a Percent of Total Costs.....	35%	27%	43%			
Fixed Cost as a Percent of Total Cost.....	12%	16%	8%			
**Net Farm Income From Operations.....	\$416,664	\$895,372	-\$62,045			
**Rate of Return on Assets.....	-12.4%	23.5%	-48.3%			
**Operating Profit Margin.....	-26.7%	25.9%	-79.2%			
**Asset Turnover Ratio.....	83.7%	92.3%	75.1%			
**Operating Expense Ratio.....	84.1%	62.7%	105.5%			
**Depreciation Expense Ratio.....	4.0%	3.2%	4.7%			
**Net Farm Income Ratio.....	15.0%	34.3%	-4.3%			

The major expense was feed. Lower feed quality and feed wastage seemed more evident on the LP farms. The HP farms invested in better forage and more efficient feeding systems. The feed costs per doe for the AVE farm was \$453; the HP farms was \$488; and the LP farms was \$375.

The cash expenses per doe were surprisingly very similar with the AVE farms at \$888; the HP farms at \$898; and the LP farms at \$867. So, again the profit difference stems mainly from the milk and livestock sales part of the equation, not the expense side.

Net Cash Income per doe for the AVE farm was \$369; for the HP farms was \$553; and for the LP farms was -\$40. After inventory changes, which was depreciation for the most part, the Net Farm Income per doe for the AVE farm was \$300; for the HP farms was \$467; and for the LP farms was -\$72. The HP farms had \$539 more net farm income per doe than the LP farms, again, most of which came from income, not expenses.

After a 4% equity charge per doe across all assets (whether owned or borrowed), of \$58 for the AVE farm; \$70 for the HP farms; and \$32 for the LP farms, the Return to Labor per doe for the AVE farm was \$242; for the HP farms was \$397; and for the LP farms -\$104. The HP farms had \$501 more return to labor per doe than the LP farms. If the net return to labor is divided by the unpaid labor hours the AVE farm earned \$143.15 per hour; the HP farms earned \$312.16 per hour; and the LP farms earned -\$25.87. These CA dairy operations employ lots of hired labor averaging \$269 per doe.

Total cost of production analysis shows a pay price per cwt. of milk sold for the AVE farm of \$66.74; for the HP farms of \$58.44; for the LP farms of \$75.03. This pay price needs discussion as many of these farms processed their own milk and picked a price the processing enterprise bought milk from their production enterprise.

The total cost of production per cwt.eq. for the AVE farm was \$93.13; for the HP farms was \$45.72; and for the LP farms was \$140.55. The cost of production for the HP farms was less than 1/3 that of the LP farms even with a 28% higher pay price for the LP farms. This plays into the net return per cwt.eq. for the AVE farm of -\$26.40; for the HP farms at \$12.72; and for the LP farms at -\$65.52.

Labor Efficiency and milk production often go hand in hand as the top two measures in dairy goat profitability. The number of does per Full Time Equivalent (FTE equals 3,000 hours worked annually) for the AVE farm was 142; for the HP farms was 186; and for the LP farms was 98. The labor efficiency per doe was just 10 does shy of being double that of the LP farms.

Targeting milk production efficiency relative to labor shows the cwts of milk sold per FTE for the AVE farm was 2,708; for the HP farms was 4,106; and for the LP farms was 1,311. Annual pounds of milk production per doe for the AVE farm was 1855; for the HP farms was 2,202; and for the LP farms was 1,508.

As a sidenote, the HP farms were very close to meeting all the profit benchmarks for a dairy goat herd:

- 1) > \$1,000 in milk sales per doe
- 2) = 150-200 does per FTE Laborer
- 3) > 2,300 pounds of milk per doe annually
- 4) > 400,000 pounds of milk sold per FTE

The HP farms were just slightly short in pounds of milk sold per doe but made up for it with 186 does per FTE allowing them to surpass the 400,000 milk sold per FTE. All labor costs per doe also showed a dramatic difference with HP farms at \$298 and the LP farms at \$1,156. All Labor Costs as a percent of Total Costs was 43% for the LP herds and 27% for the HP herds. Again, labor efficiency and milk production per doe and per FTE laborer are of most importance.

Capital costs (consisting of depreciation and interest/equity charges) are also important as the LP farms are significantly more heavily invested per doe with the HP farms at \$106 and the low profit farms at \$146. The LP farms have 38% more capital costs per doe than the HP farms. Addedly, the HP farms have \$1,390 invested per doe while the LP farms had \$1,935 invested per doe. The LP farms have \$31 more Fixed Costs per Doe which consist of depreciation, interest, repairs, taxes and insurance.

The Profit Equation is depicted by the following financial equation and financial ratios:

Profit = (Price – Cost) x Volume

or ROA = OPM x ATO

Where ROA is return on assets, OPM is Operating Profit Margin, and ATO is Asset Turnover Ratio.

The ROA for the AVE farm was - \$12.4%; for the HP farms was 23.5%; and for the LP farms was - 48.3%. The ROA is an all-inclusive profit measure that can be compared to returns of other money uses and investments. The HP farms are financially healthy while the LP farms are at risk of eroding equity quickly.

OPM defines profit per dollar of output and the AVE farm had an OPM of -26.7%; the HP farms had an OPM of 25.9% meaning for each dollar of sales, the HP farms kept about a quarter in their pocket for profit. The LP farms had an OPM of -79.2% meaning these farms need some serious financial and production changes.

The ATO defines how long it takes to gross enough income to pay for all the assets on the farm. The ATO for the HP farms was 92.3% and for the LP farms was 75.1%. Both groups had healthy ATO ratios for dairy goat operations.

Overall, there is a very dramatic difference between the HP and LP dairy goat herds in CA. Milk production per goat and per FTE Laborer were the two most important profit factors followed by capital costs per doe.

Management Advice to the CA Dairy Industry

Closing the income gap between HP farms and LP farms would require more attention to genetics, feed quality, feed bunk design, kid management, ventilation and labor efficiency. Milk production per doe is a combination of both better genetics and higher feed quality which may increase expenses but with better genetic does, it tends to increase profits.

Feed bunk design issues were noted on many farms. Most issues were high feed losses from in-pen type round bale type feeders. Most issues with lower dry matter intake were from fence-line feed bunks that created “throat-cut” or limited intake. Thus, proper feed bunk design becomes critical to minimizing feed wastage and improving dry matter intake.

Kids survival and sales represent another important opportunity to improve farm income. This not only generates revenue from selling replacement doelings and bucklings but reduces expenses with purchasing replacement does. High kid mortality or poor growth can delay and reduce future milk productivity and milk income. Key areas to evaluate within a kid rearing program include:

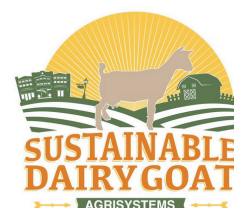
- Proper dry doe management to ensure optimal body condition at kidding.
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- Kid health protocols targeting common diseases such as
- coccidiosis, pneumonia, E. coli, salmonella, etc.

Inadequate ventilation increases humidity and ammonia buildup, stressing goats and predisposing them to illness. Proper airflow reduces respiratory disease risk and maintains milk production.

Lastly, labor efficiency is highly correlated to the milking parlor and milking management. Low-cost milking parlors can often be updated without major investment to allow one person to milk 100 plus does per hour. This would better allow the management of 175 plus does per person and allow labor to be less than 20% of total expenses.

Authored by:

Jenn Bentley, Dairy Specialist, Iowa State University Extension and Outreach Roselle Busch, DVM, Associate Specialist, ANR Veterinary Medicine, UC Davis Larry Tranel, Dairy Specialist, Iowa State University Extension and Outreach



Body Condition Scoring and Breeding Readiness in Dairy Goat Doelings: *Setting Replacements Up for Lifetime Success*

Written by Jennifer Bentley
NE IA Dairy Field Specialist, Iowa State University Extension and Outreach



While raising dairy goats is highly labor-intensive before weaning, what happens between weaning and first breeding has a significant impact on lifetime milk production, reproductive success, and herd longevity. Two of the most important tools for guiding this stage are **body condition scoring (BCS)** and **breeding readiness assessments**.

Monitoring body condition and growth ensures that doelings are neither over-conditioned nor underdeveloped when they enter the breeding pen. This article outlines practical strategies for using BCS, growth benchmarks, and management practices to prepare doelings for a healthy first pregnancy and productive first lactation.

Why Body Condition Score Matters

Body condition scoring is a hands-on evaluation of a goat's fat and muscle reserves using a 1–5 scale. While often associated with mature does, BCS is just as important in young stock, providing information that body weight alone can't reveal.

How to Body Condition Score BCS should be assessed **monthly** from weaning until breeding. Score visually using three key areas to assess muscle fullness and fat cover. Site 1 includes the neck, brisket, point of shoulder, ribs above point of elbow, site 2 includes the loin, rump, hips, and pins, and site 3 includes tail and tailhead area.

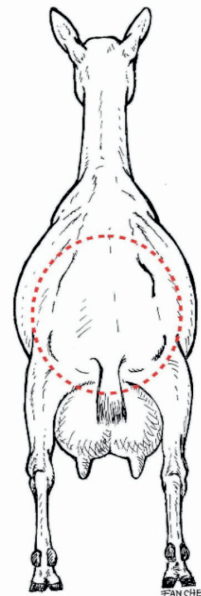
Doelings that are too thin may not cycle regularly, have lower or poor conception rates, and struggle to maintain pregnancy. Over-conditioned doelings may deposit fat around developing mammary tissue, potentially reducing future milk yield.

BCS helps identify issues before they affect future development by accurately assessing actual frame growth and muscle development, rather than just weight gain. Doelings that are evenly sized and well-conditioned are easier to manage, cycle more consistently, and conceive more predictably when grouped with a buck.

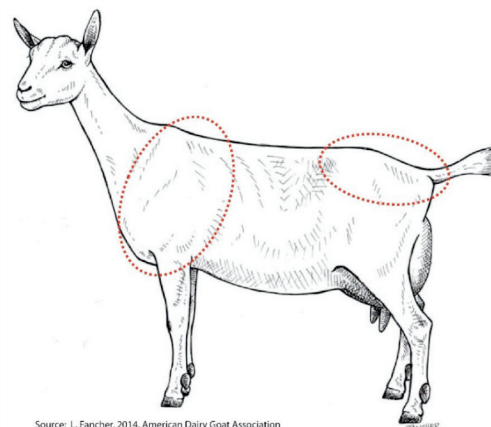
Target BCS Ranges for Doelings

- **Post-weaning:** 2.5–3.0
- **Breeding age:** 2.75–3.25
- **Early pregnancy:** Maintain 3.0
- **Late pregnancy (first fresheners):** 3.0–3.5

These targets support optimal frame development, reproductive efficiency, and mammary gland formation during the critical pre-breeding months.



Source: L. Fancher, 2014 American Dairy Goat Association



Source: L. Fancher, 2014, American Dairy Goat Association

Growth Benchmarks for Breeding Readiness

Doelings should be bred based on **size and development**, not just age. While most dairy breeds can cycle by 5–7 months of age, that doesn't mean they are physically ready.

Recommended Pre-Breeding Targets

1. **Age:** 7–10 months
2. **Weight:** 60–70% of mature body weight
3. **BCS:** 2.75–3.25
4. **Frame:** Wide, well-developed pelvis; good skeletal growth; strong legs and feet

Breed	Mature Weight (Avg)	60-70% Breeding Target (Doeling Weight)
Alpine	135-150 lb.	78-105 lb.
LaMancha	130 lb.	78-91 lb.
Nubian	135+ lb.	81-95 lb. (up to 98-123 lb. using full range)
Saanen/Sable	135-160 lb.	81-112 lb.
Toggenburg	120-140 lb.	72-98 lb.
Oberhasli	120 lb.	72-84 lb.
Nigerian Dwarf	75 lb.	45-52 lb.

Nutrition to Support Optimal Body Condition

The goal between weaning and breeding is to promote **steady, frame-focused growth** rather than rapid fat gain. If yearlings are bred at an earlier age, they are still growing quite significantly, and it's almost impossible to overfeed them. However, if they are bred later in life, they often have higher BCS and should be managed to minimize over-conditioning before freshening.

Feeding a high-quality forage (alfalfa or alfalfa/grass mix) will support growth without excessive energy intake. Concentrate feeding should be offered, and the amount will depend on forage quality and breed size, or if doelings are behind in growth. Vitamins and minerals should be offered accordingly to prevent deficiencies and support both fertility and growth. Free choice, clean water will help encourage consistent intake and rumen development.

Assess Breeding Readiness: Beyond Size and BCS

In addition to physical condition, behavioral and reproductive cues help determine breeding readiness.

Reproductive Indicators

- Clear signs of estrus (standing heat, bleating, tail flagging)
- Internal pelvic growth consistent with breed standards
- Appropriate pelvic width (for larger breeds, a two-finger width between hip bones is a helpful early indicator)

Using a Buck or Hormone Synchronization

- Exposure to a buck ("buck effect") can stimulate or synchronize heat cycles.
- Consult with your veterinarian or reproductive specialist about synchronization protocols appropriate for doelings.

Managing the Breeding Season for Success

Key Management Practices

- Group doelings by size before breeding to reduce competition and maintain ample bunk space.
- Verify BCS 4–6 weeks before breeding and adjust diet as needed.
- Ensure vaccinations (CDT), parasite management, and hoof trimming are up to date.
- Avoid breeding very small or immature doelings—this can lead to poor lactation and may increase the risk of dystocia.

Post Breeding Care

- Maintain a steady diet to support early pregnancy.
- Avoid major changes in ration or environment.
- Keep doelings in good BCS (around 3.0) without allowing excessive gain.

Raising quality replacements is one of the most cost-effective strategies for improving herd productivity. Using body condition scoring and growth benchmarks allows producers to:

- Identify nutritional or health issues early
- Breed doelings at the right size and maturity
- Reduce kidding problems
- Set doelings up for a successful first lactation

By consistently monitoring BCS and development from weaning through breeding, producers can make informed decisions to build a healthier replacement herd and ultimately support long-term herd performance and profitability.

Breeding Readiness Checklist

Use this checklist 4–6 weeks before the planned breeding season to ensure doelings are physically mature, healthy, and prepared for a successful first pregnancy.

Age & Growth Benchmarks

- Doeling is 7–10 months old (breed dependent).
- Weight is 60–70% of mature breed weight (e.g., ~80–100 lb. for most standard dairy breeds).
- Growth has been consistent since weaning.
- Frame development is appropriate (wide hips, adequate height, balanced structure).

Body Condition Score (BCS)

- Doeling has a BCS of 2.75–3.25.
- Rib cover: smooth but can still feel ribs.
- Loin: no sharp or overly rounded spine.
- Brisket: minimal fat (not soft or "puffy").
- No signs of being overly thin or over conditioned.

Reproductive Readiness

- Shows regular or observable heat cycles (tail flagging, vocalizing, restlessness).
- Structurally sound for breed and size (wider pins, good frame).
- Comfortable being housed near or exposed to a buck.
- If using AI: doeling tolerates handling and restraint.

Health Status

- CDT vaccine is current (or booster planned 2–4 weeks pre-breeding).
- Parasite management up to date (FAMACHA score checked, Fecal Egg Counts if needed).
- Hooves are trimmed and soundness checked.
- No signs of respiratory illness, diarrhea, or lameness.



Nutrition & Feeding

- Receiving a balanced ration that supports steady growth, not excessive energy.
- High-quality forage (alfalfa or mixed hay) is available.
- Grain or concentrate offered as needed ($\frac{1}{2}$ –1 lb/day depending on size and forage quality).
- Adequate mineral status (access to high-quality loose goat mineral).
- Clean, fresh water is always available.

Management & Environment

- Doelings are grouped by similar size to reduce competition.
- Stress is minimized (no major pen changes or mixing of groups, no recent ration changes before or during breeding).
- Pens and housing provide adequate space and ventilation.
- Identification and records are accurate (weights, BCS, health status, sire options).

Buck or AI Method Chosen

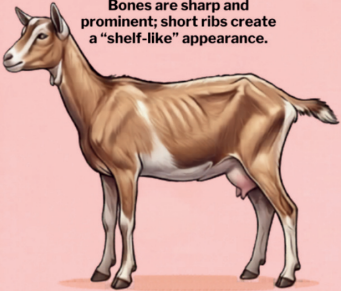

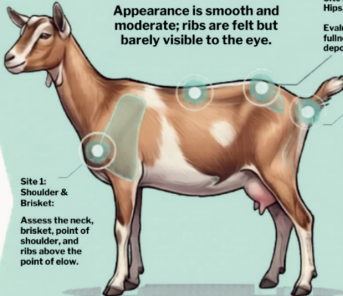

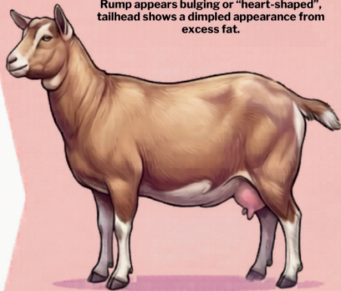

- If using a buck:
 - Buck is healthy and fertile, in good condition, and has a recent hoof trim.
 - Breeding groups are planned (size & temperament considered).
- If using AI:
 - Estrus detection plan in place.
 - Synchronization protocol (if any) established with the veterinarian.
 - Appropriate semen storage and handling is important to get the most out of each breeding; store straws in liquid nitrogen tank (frequently monitor level to ensure tank does not run dry), thaw immediately prior to use in a water bath at 95–98F, maintain at that temperature and breed within 15min of thawing.

Breeding-Ready? Final Evaluation

A doeling is considered ready to breed when she meets **all** the following:

- ✓ Age 7–10 months
- ✓ Weight \geq 60% of mature weight
- ✓ BCS 2.75–3.25
- ✓ Good health with up-to-date vaccinations
- ✓ Growing steadily with solid frame development
- ✓ Showing signs of estrus
- ✓ No signs of illness, lameness, or nutritional deficiency

Breeding Ready: Body Condition Scoring (BCS) for Dairy Goats

Under-conditioned (BCS 1–2)	Ideal Range: 2.75–3.25	Over-conditioned (BCS 4–5)
<p>Bones are sharp and prominent; short ribs create a “shelf-like” appearance.</p>  <p>Loin/Back: Sharp, prominent spine.</p>  <p>No fat cover</p>	<p>Appearance is smooth and moderate; ribs are felt but barely visible to the eye.</p>  <p>Site 1: Shoulder & Brisket: Assess the neck, brisket, point of shoulder, and ribs above the point of elbow.</p> <p>Site 2: Loin, Rump, Hips, and Pins: Evaluate for muscle fullness or fat deposition.</p> <p>Site 3: Tailhead: Examine the area surrounding the tail to detect extreme fat or emaciation.</p> <p>Smooth, rounded slope Smooth cover, felt with pressure.</p> <p>Top View</p> 	<p>Rump appears bulging or “heart-shaped”, tailhead shows a dimpled appearance from excess fat.</p>  <p>Loin/Back: Buried in fat, bulging contour. Dimpled appearance.</p>  <p>Rib Cage: Not visible.</p>
PHYSICAL FEEL VISUALIZATION		
<p>BCS 1 (Thin) Feel Ribs: Clearly visible; skin sunk. Loin: Sharp, prominent spine. Brisket: No fat cover; bone felt.</p>	<p>BCS 3 (Ideal) Feel Ribs: Smooth cover; felt with pressure. Loin: Smooth, rounded slope. Brisket: Minimal fat; not “puffy”.</p>	<p>BCS 5 (Fat) Feel Ribs: Not visible; cannot be felt. Loin: Buried in fat, bulging contour. Brisket: Protruding fat; cannot be grasped.</p>

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References:

- <https://www.nfacc.ca/goats-code-of-practice#FappGoats>
- <https://adga.org/breed-standards/>
- <https://adga.org/dairy-goat-body-condition-scoring/>
- Dairy Goat Production Handbook, published by the American Institute for Goat Research, Langston University

