2025 Statistical Information Committee Report (2024 Data)

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The information in this report was summarized from 96 surveys returned, 87 (90%) of which were from Certified Embryo Transfer Businesses (ETBs). Last year, 117 were returned, 112 of those were Certified.

Of the 96 ETBs, 84 (87.5%) still produce IN VIVO embryos, while 37 of 96 (37.5%) aspirated oocytes by transvaginal ultrasound guided aspiration.

29 of the 96 (30.2%) ETBs exported 19,537 embryos to 34 countries. In 2023, 24,114 embryos were exported from 35 ETBs to 38 countries. The difference must be from the 21 ETBs that did not report in 2024. This shows how important reporting can be. 7 out of 96 ETBs transferred Imported embryos in 2024.

A total of 621,343 embryos (*In Vivo* and *In Vitro*) were transferred in 2024, an increase of just under 10% from 2023 (565,111). This is consistent with the increase from 2022 to 2023.

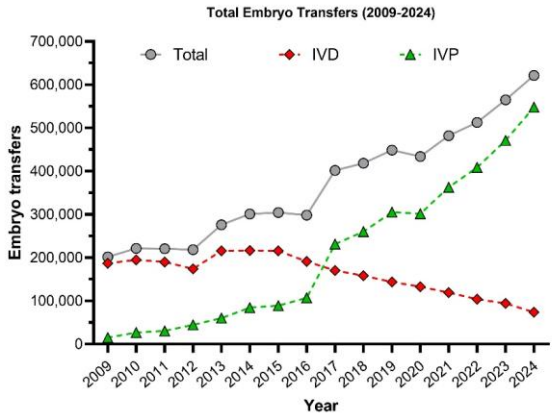
Of the 621,343 embryos transferred, 394,931 (63.5%) were Dairy and 226,412 (36.5%) were Beef. These were divided further into fresh and frozen transfers, 547,811 *in vitro* (88%) and 73,532 *in vivo* (12%).

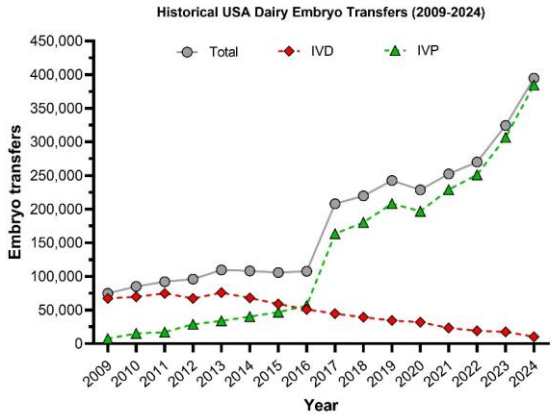
In 2024, a total of 1,037,095 IVP embryos were produced in the US. This was an increase of 6.6% relative to 2023. Most of the increase was in the Dairy sector.

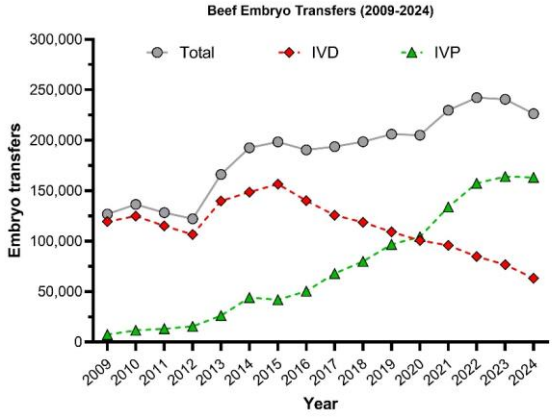
2024 USA BOVINE EMBRYO TRANSFERS

	Section B: Bovine Embryo Transfer Data								
Breed type	**# *In vivo* ETs**			**# *In vitro* ETs**			**# *Total* ETs**		
	Fresh	**Frozen**	**Total**	**Fresh**	**Frozen**	**Total**	**Fresh**	**Frozen**	**Total**
Dairy	4,570	5,801	**10,371**	288,413	96,147	***384,560***	292,983	101,948	***394,931***
Beef	23,674	39,487	**63,161**	57,041	106,210	***163,251***	80,715	145,697	***226,412***
Total	***28,244***	***45,288***	***73,532***	***345,454***	***202,357***	***547,811***	***373,698***	***247,645***	***621,343***

The graphs below illustrate the number of Total Dairy and Beef in vivo (IVD) and *in vitro* (IVP) embryo transfers in the USA from 2009 to 2024.





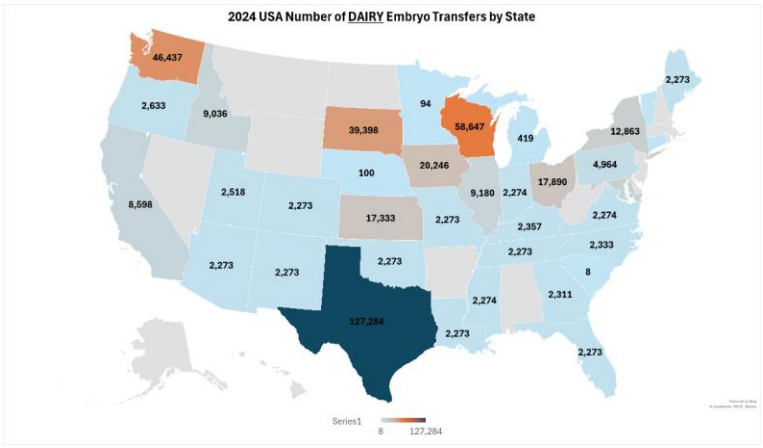


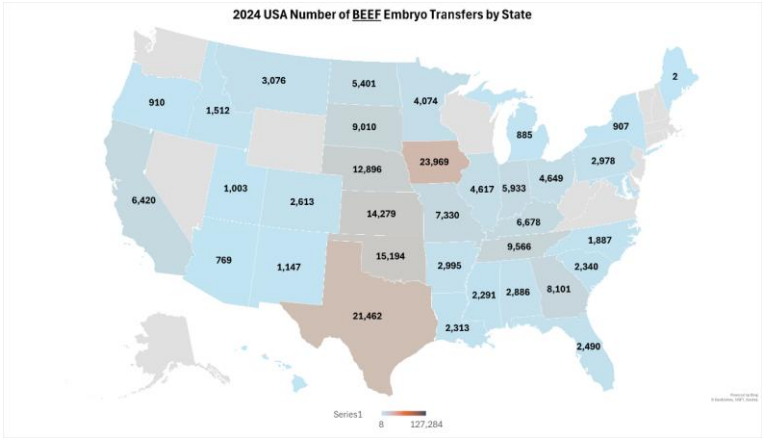
2024 USA BOVINE EMBRYO TRANSFERS BY STATE AND NUMBER OF ETBS

Embryo transfer numbers per State were calculated based on the % of work provided by members on the survey. The highest numbers per State in each category are highlighted (ETBs, Dairy or Beef).

	Dairy ET		Beef ET		Total ET		
STATE	# Dairy	% Dairy	# Beef	% Beef	ETB	Total	% by State
Alabama	0	0.00%	2886	1.38%	9	2886	0.46%
Arizona	2273	0.54%	769	0.37%	1	3042	0.48%
Arkansas	0	0.00%	2995	1.44%	6	2995	0.47%
California	8598	2.03%	6420	3.08%	5	15018	2.37%
Colorado	2273	0.54%	2613	1.25%	4	4886	0.77%
Connecticut	329	0.08%	0	0.00%	1	329	0.05%
Florida	2273	0.54%	2490	1.19%	6	4763	0.75%
Georgia	2311	0.55%	8101	3.88%	11	10412	1.65%
Hawaii	0	0.00%	23	0.01%	1	23	0.00%
Idaho	9036	2.13%	1512	0.72%	5	10548	1.67%
Illinois	9180	2.17%	4617	2.21%	8	13797	2.18%
Indiana	2274	0.54%	5933	2.84%	8	8207	1.30%
Iowa	20246	4.78%	23969	11.49%	9	44215	6.99%
Kansas	17333	4.09%	14279	6.84%	7	31612	5.00%
Kentucky	2357	0.56%	6678	3.20%	9	9035	1.43%
Louisiana	2273	0.54%	2313	1.11%	3	4586	0.73%
Maine	2273	0.54%	2	0.00%	2	2275	0.36%
Maryland	11225	2.65%	2033	0.97%	5	13258	2.10%
Michigan	419	0.10%	885	0.42%	3	1304	0.21%
Minnesota	94	0.02%	4074	1.95%	7	4168	0.66%
Mississippi	2274	0.54%	2291	1.10%	3	4565	0.72%
Missouri	2273	0.54%	7330	3.51%	4	9603	1.52%
Montana	0	0.00%	3076	1.47%	3	3076	0.49%
Nebraska	100	0.02%	12896	6.18%	8	12996	2.06%
New Mexico	2273	0.54%	1147	0.55%	3	3420	0.54%
New York	12863	3.04%	907	0.43%	5	13770	2.18%
North Carolina	2333	0.55%	1887	0.90%	9	4220	0.67%
North Dakota	0	0.00%	5401	2.59%	5	5401	0.85%
Ohio	17890	4.22%	4649	2.23%	13	22539	3.56%
Oklahoma	2273	0.54%	15194	7.28%	8	17467	2.76%
Oregon	2633	0.62%	910	0.44%	4	3543	0.56%
Pennsylvania	4964	1.17%	2978	1.43%	11	7942	1.26%
South Carolina	8	0.00%	2340	1.12%	5	2348	0.37%
South Dakota	39398	9.30%	9010	4.32%	7	48408	7.66%
Tennessee	2273	0.54%	9566	4.58%	11	11839	1.87%
Texas	127284	30.04%	21462	10.29%	9	148746	23.52%
Utah	2518	0.59%	1003	0.48%	2	3521	0.56%

Vermont	198	0.05%	0	0.00%	1	198	0.03%
Virginia	2274	0.54%	5182	2.48%	6	7456	1.18%
Washington	46437	10.96%	2552	1.22%	3	48989	7.75%
West Virginia	0	0.00%	460	0.22%	2	4685	0.74%
Wisconsin	58647	13.84%	4685	2.25%	17	63332	10.02%
Wyoming	0	0.00%	1153	0.55%	4	1153	0.18%
Total	423680	100.00%	208671	100.00%		632351	100.00%





2024 USA BOVINE IN VIVO EMBRYO PRODUCTION

Commented [AG1]: These tables look a little different from last year, do you want to keep them this way?

Section C: Bovine *In Vivo* Produced Embryos							
Breed type	Collection data						
	# of Collections	% Sexed Semen[3]	Total Ova/Embryos [1]	total per collection	Viable Embryos [2]	viable per collection	Frozen
Dairy	3395	29.20%	28234	8.3	17634	5.2	14295
Beef	10440	6.48%	123165	11.8	66589	6.4	48622
Total	13835		151399	10.9	84223	6.1	62917

1) Total Ova/Embryos collected includes all UFO, Deg and Viable embryos

2) Viable embryos are all grade 1, 2 and 3 embryos TRANSFERRED FRESH OR FROZEN ON COLLECTION DAY OR IF INCUBATED, NEXT DAY)

3) In what % of collections, was sexed semen used?

2024 USA BOVINE IN VITRO EMBRYO PRODUCTION

Section D: OPU *in vitro* Produced Embryos										
Breed type	OPU Data[1]			Lab Production Data[4]						
	# of OPUs	% Sexed Semen[2]	% Used FSH[3]	# of Oocytes Retrieved	Oocytes per OPU	# of Oocytes Fertilized	Viable Embryos[5]	Viable per OPU	Transferred Fresh[6]	Frozen
Dairy	136,661	68.55%	68.00%	3,137,668	22.4	1,733,146	599,697	4.4	308,304	175,945
Beef	54,490	40.03%	80.36%	1,435,310	26.3	841,935	437,393	8.0	68,770	274,716
Total	191,151	54.29%	74.18%	4,572,978	23.9	2,575,081	1,037,090	5.4	377,074	450,661

Report OPUs performed by your ETB ONLY

2)In what % of OPUs, was sexed semen used?

3)What percentage of cows were synchronized and/or super stimulated for OPU?

4)Report all known data. If you DO NOT own the IVF lab, report the viable embryos received and manipulated by your ETB, transferred fresh or frozen if available

5)Viable embryos are all grade 1, 2 and 3 embryos TRANSFERRED FRESH OR FROZEN based on day 6 predictions or day 7 actuals

6)Include all embryos transferred by your lab or sent to other practitioners

IVF Embryo Production in US				
	2024	2023	difference	percentage
Dairy	599,697	478,734	120,963	↑ 20.2%
Beef	437,398	489,309	-51,911	↓11.9%
totals	1,037,095	968,043	69,055	↑6.6%

2024 USA BOVINE EMBRYOS EXPORTED BY COUNTRY

Export Data - # Embryos					
	Beef		Dairy		
Country	*In Vivo*	*In Vitro*	*In Vivo*	*In Vitro*	Total
Argentina	53	0	363	0	416
Australia	90	396	498	516	1500
Bangladesh	0	0	329	0	329
Belarus	31	0	0	0	31
Belgium	13	0	0	0	13
Brazil	5	68	1456	34	1563
Bulgaria	27	0	0	0	27
Canada	199	2350	208	428	3185
Chile	0	25	0	0	25
China	546	0	2437	0	2983
Colombia	0	0	0	13	13
Costa Rica	0	47	0	0	47
Denmark	0	0	0	73	73
Estonia	41	0	0	0	41
France	148	0	32	833	1013
Germany	73	24	324	513	934
Honduras	0	356	0	0	356
Hungary	95	8	24	0	127
Ireland	0	0	0	93	93
Italy	0	0	429	24	453
Japan	12	0	944	0	956
Netherlands	26	12	405	2781	3224
New Zealand	101	0	44	0	145
Norway	14	7	0	0	21
Poland	121	0	0	0	121
Portugal	10	0	0	0	10
Romania	10	0	0	0	10
South Africa	22	0	0	0	22
South Korea	40	0	291	0	331
Spain	0	0	3	51	54
Switzerland	0	0	67	69	136
Tanzania	0	0	72	110	182
Thailand	0	224	0	0	224
United Kingdom	30	398	71	380	879

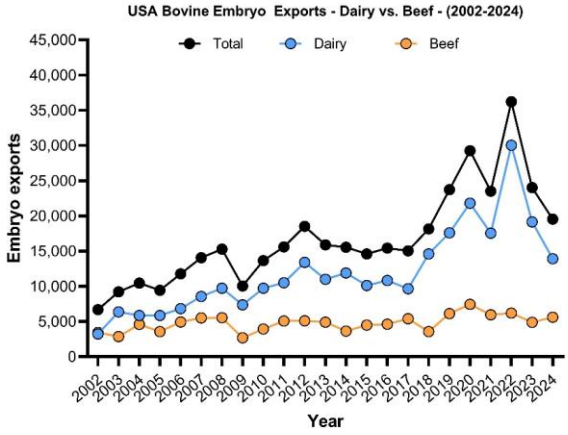
2024 USA BOVINE EMBRYOS EXPORTED BY BREED

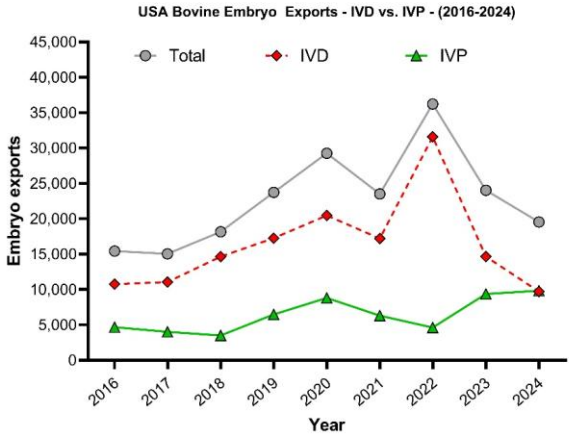
Export by breed			
	Beef		
Breed	*In Vivo*	*In Vitro*	Total
Angus	*756*	1875	**2631**
Beef Master	*32*	0	**32**
Brahman	*0*	382	**382**
Charolais	*0*	246	**246**
Crossbred	*101*	360	**461**
Hereford (horned)	*0*	12	**12**
Hereford (polled)	*13*	71	**84**
Highland	*42*	0	**42**
Limousin	*0*	50	**50**
Maine-Anjou	*0*	11	**11**
Mini Hereford	*0*	12	**12**
Red Angus	*66*	112	**178**
Red Brahman	*0*	298	**298**
Simmental	*618*	347	**965**
Wagyu	*74*	30	**104**
Total	***1702***	**3806**	**5508**
	Dairy		Total
Breed	*In Vivo*	*In Vitro*	
Ayrshire	*19*	11	**30**
Brown Swiss	*76*	56	**132**
Crossbred	*0*	110	**110**
Gelbvieh	*0*	28	**28**
Guernsey	*22*	4	**26**
Holstein	*6953*	5090	**12043**
Jersey	*285*	134	**419**
Total	***7355***	**5433**	**12788**

2024 EMBRYOS <u>IMPORTED</u> INTO THE USA

Section I: Imported Embryos Transfer Data					
Country	**# of Embryos**	**Species**	**Dairy or Beef**	**Breed** [1]	***In vivo* or *In vitro*?**
Australia	**50**	**Ovine**	**N/A**	**VBN**	***In vivo***
	2	**Bovine**	**Beef**	**Murray Grey**	***In vivo***
	33	**Bovine**	**Beef**	**Wagyu**	***In vivo***
Canada	**8**	**Bovine**	**Dairy**	**Holstein**	***In vitro***
Germany	**19**	**Bovine**	**Dairy**	**Angler**	***In vivo***
Scotland	**2**	**Bovine**	**Dairy**	**Brown Swiss**	***In vivo***

The graphs below illustrate the historical progression in the number of embryo exports by breed type (Beef vs. Dairy) and embryo production method (IVD vs IVP) in the USA from 2002 to 2024.





2024 USA EQUINE EMBRYO ACTIVITY

- Summary from 11 equine practitioners
- Reporting continues to be low despite renewed efforts to increase data submission through the American College of Theriogenologists and the Society for Theriogenology.
- *In vivo* embryo collections and transfers relative to 2023 are down by 22% and 55%, respectively.
- Oocyte recovery procedures decreased by ~82%, while transfer of IVP embryos decreased by ~42%.

Number of Submissions: 11 (5 AETA Members)

Embryo recovery from mares via uterine flush (in vivo recovery)	
Number of recovery procedures performed	680
Number of recovered embryos	436
Average	0.6
Transfer of IN-VIVO RECOVERED embryos to recipient mares	
Number of **FRESH** embryos (recovered at your facility or shipped to you by others) transferred to recipient mares at your facility	401
Number of **CRYOPRESERVED** / warmed embryos (recovered at your facility or shipped to you by others) transferred to recipient mares at your facility	13
Total Transfers	414
Oocyte recovery procedures (TVA, OPU, flank) for in vitro embryo production	
Number of oocyte recovery procedures performed	256
Number of immature oocytes recovered (oocytes recovered from diestrus/subordinate follicles)	2655
Number of in vivo-matured oocytes recovered (recovered from the stimulated dominant follicle)	14
If separation by oocyte type is not possible) Number of mixed oocytes	0
Embryo production via ICSI at your facility	
Number of cases (mare aspiration sessions) on which ICSI was performed	598
Number of oocytes on which ICSI was performed	3136
Number of transferrable IVP blastocysts produced via ICSI	666
Transfer of IVP embryos at your facility	
Number of **FRESH** IVP blastocysts transferred to the uteri of recipient mares at your facility (including fresh shipped IVP blastocysts)	47
Number of **CRYOPRESERVED** /warmed IVP blastocysts transferred to the uteri of recipient mares at your facility (including shipped cryopreserved IVP blastocysts)	558
Total Transfers	605

A separate survey is conducted for Equine to allow collection of detailed equine embryo transfer data from practitioners that are not associated to AETA.

2024 USA OTHER SPECIES EMBRYO PRODUCTION

- Number of reporting EBTs remain relatively stable (down ~10% relative to 2023)
- Ovine embryo production and transfers continues to grow (up ~30% relative to 2023)
- Caprine embryo production and total transfers were down by 21% and 19%, respectively relative to 2023.

2024 USA OTHER SPECIES IN VIVO EMBRYO PRODUCTION

Species	ETBs	Collection data							Transfer Data		
		Collections	Total Ova	Viable	Average Ova	Average Viable	% Viable	Frozen	Fresh	Frozen	Total
Ovine	9	3,196	23,107	19,341	7.2	6.1	83.7%	1,979	17,362	1,731	19093
Caprine	10	1,547	12,984	9,932	8.4	6.4	76.5%	668	9,264	575	9839
Cervids	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR	NR

- Very low number of ETBs reporting small ruminant IVF work.
- Ovine IVF work has increased drastically with a 574% increase in embryos produced compared with 2023.

2024 USA OTHER SPECIES IN VITRO EMBRYO PRODUCTION

Species	ETBs	OPUs	Total Oocytes	Oocytes per OPU	Viable Embryos	Embryos per OPU	% Viable	Frozen	Fresh ET
Ovine	3	428	3,524	8.23	991	2.3	28.1%	325	653
Caprine	3	579	11,214	19.4	4,731	8.2	42.2%	658	4073
Cervine	NR	NR	NR	NR	NR	NR	NR	NR	NR
Water buffalo	NR	NR	NR	NR	NR	NR	NR	NR	NR