Calving Season Selection Considerations

Calving season affects beef cattle production and associated costs and returns. It is important to choose an appropriate calving season for the ranch. Following are calving season decisions to consider:

- cattle nutrient demand
- nutrient supply from forage and feed
- seasonal effects on fertility
- seasonal effects on calf performance
- seasonal markets and profit potential

One type of calving season does not work best for all Mississippi beef cattle operations in terms of length or time of year. Each producer must make an informed decision on which calving season is ideal for the operation.

Controlled Calving Season

The producer should define and control a calving season. A controlled calving season starts with a controlled breeding season. Table 1 corresponds to expected calving dates for specific breeding dates throughout the year. A controlled breeding season means herd sires must be removed from the breeding herd on a designated date. The key to implementing a controlled breeding and calving season is to be diligent about separating bulls from the cow herd on schedule.

Implementing a controlled breeding and calving season can be accomplished over time with minimal production loss. A controlled breeding and calving season offers several advantages over a year-round, uncontrolled season. A controlled calving season allows matching nutritional needs of the herd to forage resources, facilitates more intense monitoring of breeding and calving, facilitates working more calves of a similar age at once (vaccinating, castrating, growth implanting), and produces calves of uniform age that can be marketed in groups to capture sale premiums.

A controlled breeding season allows herd sires time to rest and regain body condition that might have been lost during the breeding season. Not having herd sires with the cow herd year-round also reduces the risk of injury to bulls. When deciding on an appropriate length to the calving season, first consider impacts on reproductive performance and then the advantages of having calves within a tight age range.

One argument for not moving to a controlled breeding and calving season is that, with calves of different ages scattered throughout the year, income can be spread throughout the year. This is the notion of using a year-round calf crop as a checking/savings account. The advantages of a controlled breeding and calving season outlined above often lead to higher annual revenue and profit in a cow-calf operation. In addition, with planned and disciplined budgeting, revenues from calf sales using a controlled breeding and calving season can be made available during months in which calves are not marketed.

Spring Versus Fall Calving

Mississippi beef cattle operations calve during various seasons of the year. While most operations in the state calve during the spring months, an increasing number of operations are shifting to fall- and winter-calving seasons. A minority of operations practice summer calving. When comparing spring- and fall-calving seasons, there are advantages and disadvantages to each.

Nutrient demands of beef females are generally highest in the first few months after calving. Cows calving in the fall normally need more winter supplementation than spring-calving females. As cow size and production level increase, nutrient demands become even greater.

The supply of nutrients available at any particular time during the year depends largely upon the forage base. Cool-season pasture production can become limiting during winter months, necessitating a winter-feeding period of stored feeds and forages. These winter-feeding costs often make up a large percentage of the cash costs in a cow-calf operation. An advantage to fall calving is that cool-season forages are typically higher in quality and nutrient content than warm-season forages.

Seasonal effects on fertility exist. Increased numbers of follicles and larger follicle size in beef females are generally seen in spring more than in fall. During late fall and winter, lower fertility rates have been documented in *Bos indicus*

(Brahman influence) cows compared to other times of the year. Lower serum progesterone concentrations and abnormal estrous cycle lengths have also been observed in Brahman heifers during winter months.

In Mississippi, the effects of heat stress on fertility are of more cause for concern than cool-season effects. Heat stress is the result of a combination of both ambient temperature and humidity (heat index). The hot, balmy summer months in the state can depress bovine fertility in both females and males. The negative effects of heat stress on cows include hormone imbalances, reduced ova quality, lower conception rates, early embryo death, and reduced blood flow to the uterus. Conception rate averages are greatly depressed in July, while late spring conception rates are three to five times higher.

Bulls experiencing heat stress lasting only 12 hours can have impaired spermatogenesis (sperm production). The recovery time to normal sperm production takes six to eight weeks after the heat stress period. Libido and serving capacity can decline during hot weather as well. In short, for optimum reproductive performance, Mississippi producers should avoid breeding during the late, hot summer months.

Calf performance is also influenced by season. Gestation length early in the fall-calving season can be shortened by about three days compared to later in the fall-calving season. Calf birth weights are typically higher in spring than in fall while calf birth weights may decrease during the summer. A possible explanation for this is, as beef females are gestating through the hot summer months, blood is shunted away from the fetus and to the body surface and extremities to dissipate heat. Calving during the hot summer months is generally not recommended in Mississippi.

Calf weaning weights in the southeastern U.S. tend to be lower in spring-born calves than fall-born calves. Calves born in summer are significantly lighter at weaning than calves born the rest of the year. Although spring-born heifers are often lighter at weaning than fall-born heifers, post-weaning gains and body condition scores at breeding are higher for spring-born calves than fall-born calves. As the percentage of Brahman influence increases, calf preweaning average daily gain and weaning weight do not differ among fall-born calves but increase among spring-born calves. This may be due to heat-tolerance advantages of Brahman genetics as spring-born calves grow through the summer.

Seasonal markets and profit potential are another factor in choosing appropriate calving seasons. For producers who traditionally market calves immediately after weaning, spring-born calves are marketed in the fall, and fall-born calves are marketed in the spring. Seasonal highs for feeder calf prices usually hit in the spring as feeder calf supplies tighten and demand for calves increases to use spring and summer forages. Producers retaining ownership of calves post-weaning must look at seasonal costs and marketing opportunities further down the production chain. Seedstock producers should consider targeting the calving season so cattle reach a marketable age during peak demand periods for replacements. Seasonal differences in production costs must also be taken into account. The primary forage base greatly impacts supplementation needs and costs.

Some producers decide to use two defined calving seasons. This provides the option to roll non-pregnant, breeding females to the opposite calving season without having to miss an entire production cycle. It also allows a reduction in the size of the bull battery needed to settle the herd. Herd sires can be used in both seasons, but nutritional programs must be designed to maintain good bull body condition going into each breeding season. If more than one calving season is used, there is an opportunity to compare the effects of changes in markets and weather on production and profitability at a single location. This comparison may identify a preferable calving season for the specific conditions of the ranch. With two calving seasons, management and resource demands for each season should be evaluated along with the advantages described previously to determine if using two calving seasons is preferable to using one season.

Conclusions

Decisions on when to calve should be based on site-specific conditions affecting production, costs, and returns. What works in another region of the country or even another area of the state may not work for the current operation. By keeping good production and financial records and assessing forage resources, herd fertility, calf performance, and marketing options, a suitable calving season can be found for the ranch. For more information on calving seasons, contact your local MSU Extension office.

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Table 1. Age, calving interval, and gestation.

January																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
February																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	-	-	-
March																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90
April																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120	-
May																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151
June																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
152	153	154	155	156	157	158	159	160	161	162	163	164	165	166	167	168	169	170	171	172	173	174	175	176	177	178	179	180	181	-
July																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
182	183	184	185	186	187	188	189	190	191	192	193	194	195	196	197	198	199	200	201	202	203	204	205	206	207	208	209	210	211	212
August																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
213	214	215	216	217	218	219	220	221	222	223	224	225	226	227	228	229	230	231	232	233	234	235	236	237	238	239	240	241	242	243
September																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
244	245	246	247	248	249	250	251	252	253	254	255	256	257	258	259	260	261	262	263	264	265	266	267	268	269	270	271	272	273	-
October																													
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
274	275	276	277	278	279	280	281	282	283	284	285	286	287	288	289	290	291	292	293	294	295	296	297	298	299	300	201	302	303	304

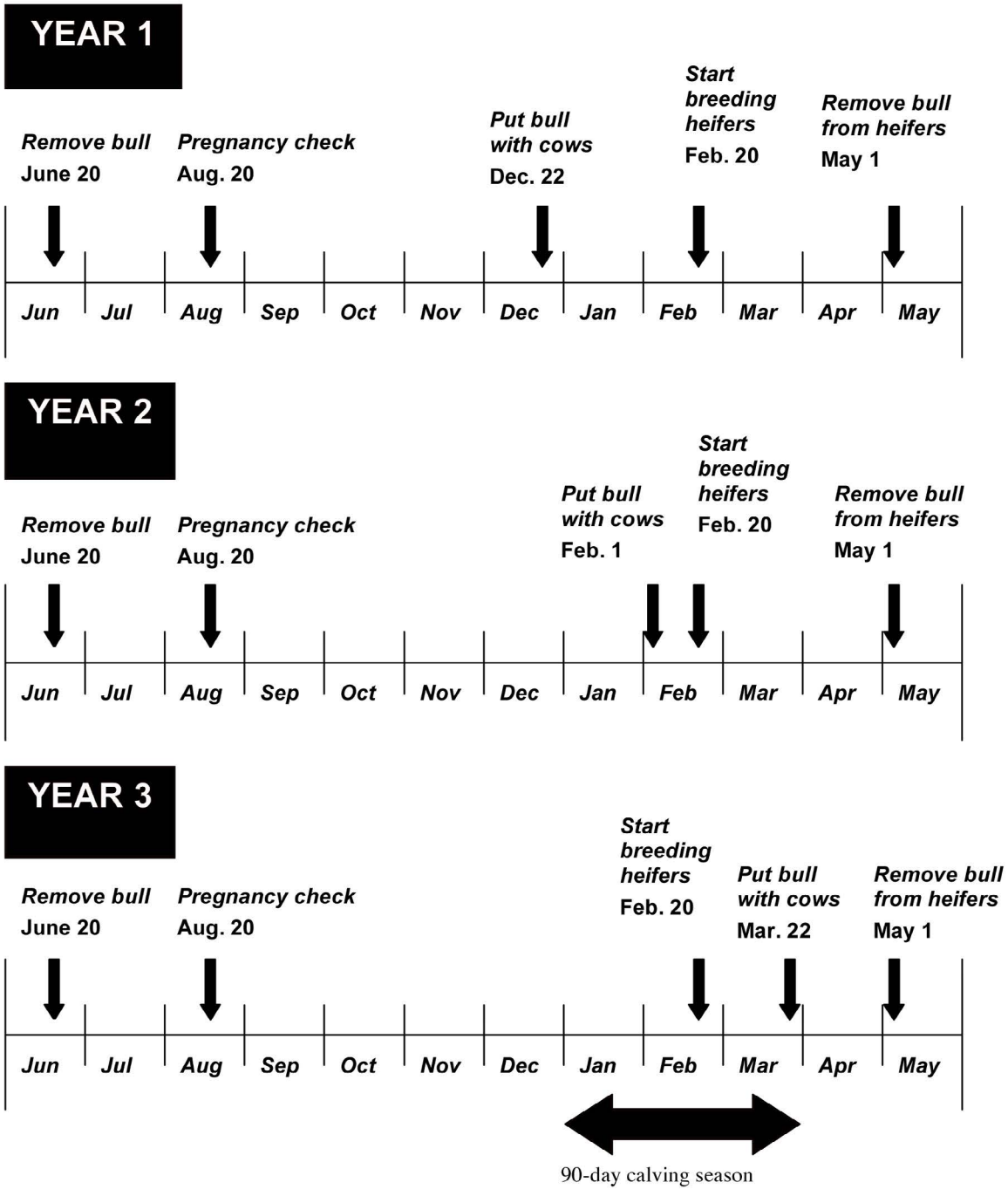
November																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
305	306	307	308	309	310	311	312	313	314	315	316	317	318	319	320	321	322	323	324	325	326	327	328	329	330	331	332	333	334	
December																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
335	336	337	338	339	340	341	342	343	344	345	346	347	348	349	350	351	352	353	354	355	356	357	358	359	360	361	362	363	364	365
January																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
366	367	368	369	370	371	372	373	374	375	376	377	378	379	380	381	382	383	384	385	386	387	388	389	390	391	392	393	394	395	396
February																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
397	398	399	400	401	402	403	404	405	406	407	408	409	410	411	412	413	414	415	416	417	418	419	420	421	422	423	424	-	-	-
March																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
425	426	427	428	429	430	431	432	433	434	435	436	437	438	439	440	441	442	443	444	445	446	447	448	449	450	451	452	453	454	455
April																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
456	457	458	459	460	461	462	463	464	465	466	467	468	469	470	471	472	473	474	475	476	477	478	479	480	481	482	483	484	485	-
May																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
486	487	488	489	490	491	492	493	494	495	496	497	498	499	500	501	502	503	504	505	506	507	508	509	510	511	512	513	514	515	516
June																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
517	518	519	520	521	522	523	524	525	526	527	528	529	530	531	532	533	534	535	536	537	538	539	540	541	542	543	544	545	546	-
July																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
547	548	549	550	551	552	553	554	555	556	557	558	559	560	561	562	563	564	565	566	567	568	569	570	571	572	573	574	575	576	577
August																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
578	579	580	581	582	583	584	585	586	587	588	589	590	591	592	593	594	595	596	597	598	599	600	601	602	603	604	605	606	607	608

September																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
609	610	611	612	613	614	615	616	617	618	619	620	621	622	623	624	625	626	627	628	629	630	631	632	633	634	635	636	627	638	-
October																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
639	640	641	642	643	644	645	646	647	648	649	650	651	652	653	654	655	656	657	658	659	660	661	662	663	664	665	666	667	668	669
November																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
670	671	672	673	674	675	676	677	678	679	680	681	682	683	684	685	686	687	688	689	690	691	692	693	694	695	696	697	698	699	-
December																														
Day 1	Day 2	Day 3	Day 4	Day 5	Day 6	Day 7	Day 8	Day 9	Day 10	Day 11	Day 12	Day 13	Day 14	Day 15	Day 16	Day 17	Day 18	Day 19	Day 20	Day 21	Day 22	Day 23	Day 24	Day 25	Day 26	Day 27	Day 28	Day 29	Day 30	Day 31
700	701	702	703	704	705	706	707	708	709	710	711	712	713	714	715	716	717	718	719	720	721	722	723	724	725	726	727	728	729	730

To determine date of birth for a calf, add 283 (gestation length) to the date the cow was bred. For example, if a cow was bred June 1 (day 152), then 152 + 283 = 435. From the table, note that day 435 is March 11.

To find the date on which a calf becomes 205 days of age, locate the "day number" of its birth date in the table. Add 205 and locate the date the calf becomes 205 days old. For yearling measures of 365 days, follow the same procedure. To find weaning dates for a group of calves within a 160- to 250-day window, for example, add 160 to the last calf's birth date for the earliest weaning date. For the latest weaning date, add 250 to the earliest calf's birth date.

This table applies to typical (non-leap) years only. For leap years, add one day to all dates after February 29. For example, March 1 would be day 61 rather than day 60.


YEAR 1
Remove bull
June 20
Pregnancy check
Aug. 20
Put bull
with cows
Dec. 22
Start
breeding
heifers
Feb. 20
Remove bull
from heifers
May 1
Jun
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Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
YEAR 2
Remove bull
June 20
Pregnancy check
Aug. 20
Put bull
with cows
Feb. 1
Start
breeding
heifers
Feb. 20
Remove bull
from heifers
May 1
Jun
Jul
Aug
Sep
Oct
Nov
Dec
Jan
Feb
Mar
Apr
May
YEAR 3
Remove bull
June 20
Pregnancy check
Aug. 20
Start
breeding
heifers
Feb. 20
Put bull
with cows
Mar. 22
Remove bull
from heifers
May 1
Jun
Jul
Aug
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Nov
Dec
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May
90-day calving season

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