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. On the next page, for reference, is a gestation table that corresponds 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 an office of the Mississippi State University Extension Service.

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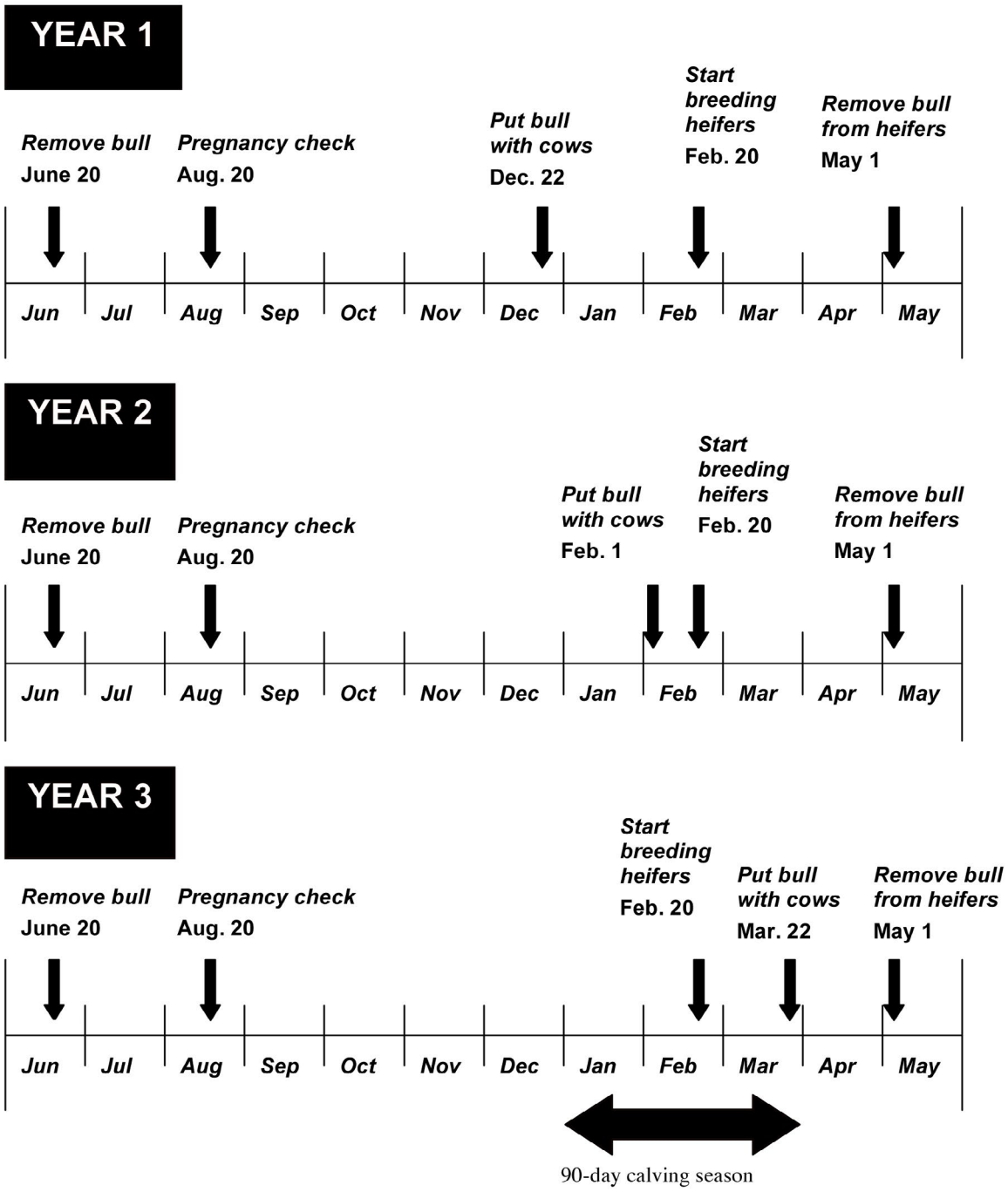
Age, Calving Interval and Gestation Table																									
Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec		Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	1	32	60	91	121	152	182	213	244	274	305	335		1	366	397	425	456	486	517	547	578	609	639	670	700
2	2	33	61	92	122	153	183	214	245	275	306	336		2	367	398	426	457	487	518	548	579	610	640	671	701
3	3	34	62	93	123	154	184	215	246	276	307	337		3	368	399	427	458	488	519	549	580	611	641	672	702
4	4	35	63	94	124	155	185	216	247	277	308	338		4	369	400	428	459	489	520	550	581	612	642	673	703
5	5	36	64	95	125	156	186	217	248	278	309	339		5	370	401	429	460	490	521	551	582	613	643	674	704
6	6	37	65	96	126	157	187	218	249	279	310	340		6	371	402	430	461	491	522	552	583	614	644	675	705
7	7	38	66	97	127	158	188	219	250	280	311	341		7	372	403	431	462	492	523	553	584	615	645	676	706
8	8	39	67	98	128	159	189	220	251	281	312	342		8	373	404	432	463	493	524	554	585	616	646	677	707
9	9	40	68	99	129	160	190	221	252	282	313	343		9	374	405	433	464	494	525	555	586	617	647	678	708
10	10	41	69	100	130	161	191	222	253	283	314	344		10	375	406	434	465	495	526	556	587	618	648	679	709
11	11	42	70	101	131	162	192	223	254	284	315	345		11	376	407	435	466	496	527	557	588	619	649	680	710
12	12	43	71	102	132	163	193	224	255	285	316	346		12	377	408	436	467	497	528	558	589	620	650	681	711
13	13	44	72	103	133	164	194	225	256	286	317	347		13	378	409	437	468	498	529	559	590	621	651	682	712
14	14	45	73	104	134	165	195	226	257	287	318	348		14	379	410	438	469	499	530	560	591	622	652	683	713
15	15	46	74	105	135	166	196	227	258	288	319	349		15	380	411	439	470	500	531	561	592	623	653	684	714
16	16	47	75	106	136	167	197	228	259	289	320	350		16	381	412	440	471	501	532	562	593	624	654	685	715
17	17	48	76	107	137	168	198	229	260	290	321	351		17	382	413	441	472	502	533	563	594	625	655	686	716
18	18	49	77	108	138	169	199	230	261	291	322	352		18	383	414	442	473	503	534	564	595	626	656	687	717
19	19	50	78	109	139	170	200	231	262	292	323	353		19	384	415	443	474	504	535	565	596	627	657	688	718
20	20	51	79	110	140	171	201	232	263	293	324	354		20	385	416	444	475	505	536	566	597	628	658	689	719
21	21	52	80	111	141	172	202	233	264	294	325	355		21	386	417	445	476	506	537	567	598	629	659	690	720
22	22	53	81	112	142	173	203	234	265	295	326	356		22	387	418	446	477	507	538	568	599	630	660	691	721
23	23	54	82	113	143	174	204	235	266	296	327	357		23	388	419	447	478	508	539	569	600	631	661	692	722
24	24	55	83	114	144	175	205	236	267	297	328	358		24	389	420	448	479	509	540	570	601	632	662	693	723
25	25	56	84	115	145	176	206	237	268	298	329	359		25	390	421	449	480	510	541	571	602	633	663	694	724
26	26	57	85	116	146	177	207	238	269	299	330	360		26	391	422	450	481	511	542	572	603	634	664	695	725
27	27	58	86	117	147	178	208	239	270	300	331	361		27	392	423	451	482	512	543	573	604	635	665	696	726
28	28	59	87	118	148	179	209	240	271	301	332	362		28	393	424	452	483	513	544	574	605	636	666	697	727
29	29		88	119	149	180	210	241	272	302	333	363		29	394		453	484	514	545	575	606	637	667	698	728
30	30		89	120	150	181	211	242	273	303	334	364		30	395		454	485	515	546	576	607	638	668	699	729
31	31		90		151		212	243		304		365		31	396		455		516		577	608		669		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, 2008 is day 61 rather than day 60.

Three-year plan for converting from year-round calving to a 90-day calving season.



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