Estrous synchronization and artificial insemination have potential to increase genetic improvement, calf uniformity and improve calf weaning weight in beef cattle operations. Synchronization programs utilizing exogenous progestins (CIDR® or MGA®), gonadotropin releasing hormone (GnRH) and prostaglandin (PG) have been shown to be effective for estrous synchronization in beef heifers and can help induce some prepubertal heifers to cycle. While many options exist for synchronization of estrus, a common method utilized in heifers is known as MGA Select. The MGA Select protocol involves feeding MGA for 14 days followed by an injection of GnRH (Cystorelin®, Factrel®, OvaCyst® or Fertagyl®) on day 26 and an injection of PG (Lytalyse®, Estrumate®, estroPLAN® ProstaMate® or InSynch®) on day 33 (Figure 1).

Reports have shown this method to be effective for heifers with AI pregnancy rates near 71% and seasonal pregnancy rates over 90%. However, advanced planning is needed, as this protocol extends for a 33-day period before PG injection. Recently, a study was conducted at the University of Arkansas to evaluate synchronization methods similar to MGA Select but using two different progestin sources (MGA and CIDRs) as well as shortening the entire length of the protocol.

Beef heifers were sorted into two treatment groups. Treatment one (T1) received a progesterone insert (CIDR) from day 0 to 14, GnRH on day 16 and PG on day 23. Heifers assigned to a treatment two (T2) were fed MGA (0.5 mg/head/day) from day 1 to 14,
received GnRH on day 16 and PG on day 23 (Figure 2). At the time of PG dosing, each cow or heifer was equipped with a heat detection patch to improve determination of the onset of standing estrus. During a 96-hour period following PGF treatment, all heifers were observed at least twice daily for onset of standing estrus. Time of onset of standing estrus and AI were recorded for each heifer. Artificial insemination was performed by one experienced technician at ~12 hours after onset of standing estrus was observed. Then fertile bulls were placed into breeding pastures for “clean-up” service. Conception rate to AI was evaluated 70 days after the end of the synchronization period by ultrasonography. Differences in fetal crown-rump length were used to identify pregnancies resulting from AI service or from pasture bulls. A second ultrasonography was conducted 30 to 45 days later to confirm overall seasonal pregnancy rate.

Among treatments, heifers exhibited similar (P > 0.10) estrus response, mean interval to estrus following PGF2α, AI pregnancy rate and final pregnancy rate (Table 1). The percentages of heifers that exhibited estrus within the 96-hour period following the PG dosing were similar at 75% and 78.1% for T1 and T2, respectively. The mean interval from PG dosing until estrus detection was similar at 48.3 hours for T1 and 49.6 hours for T2. The AI pregnancy rate was also similar at 62.5% for T1 and 76.0% for T2. Overall pregnancy rate (90.6 and 87.5% for T1 and T2, respectively) did not differ among treatments. Pregnancy rates for AI were similar to other reported study using a similar protocol.³ In this study, heifers received GnRH dosing 2 days after the progestin, reducing the total time of the synchronization program by 10 days compared to the MGA Select protocol and increasing the convenience and use of this protocol. Results indicate that within the current estrous synchronization protocol, CIDR progesterone inserts and MGA are equally effective for synchronization of beef heifers.

### Table 1. Heifers: Effect of progestin source on estrous response and pregnancy rates.

<table>
<thead>
<tr>
<th>Item</th>
<th>Estrous synchronization treatment (Heifers)*</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Heifers in estrus</td>
<td>T1 24/32 (75.0%)</td>
<td>T2 25/32 (78.1%)</td>
</tr>
<tr>
<td>Hours, PG to estrus</td>
<td>48.3 ± 2.2</td>
<td>49.6 ± 2.1</td>
</tr>
<tr>
<td>AI pregnancy rate</td>
<td>15/24 (62.5%)</td>
<td>19/25 (76.0%)</td>
</tr>
<tr>
<td>Overall pregnancy rate</td>
<td>29/32 (90.6%)</td>
<td>28/32 (87.5%)</td>
</tr>
</tbody>
</table>

*Heifers in T1 and T2 received CIDR and MGA as progestin sources, respectively.

Beef cattle outlook, trichomoniasis and a detailed look at weed control are among the agenda topics for the 2012 River Valley Beef Cattle Conference set for Feb. 15 at the 101 Livestock Auction in Morrilton.

“Producers say they find this annual conference to be one of the best in the United States,” said Tom Troxel, associate head - animal science for the University of Arkansas Division of Agriculture. “Cattle producers shouldn’t miss this opportunity.”

The River Valley Beef Cattle Conference is a joint educational effort by the University of Arkansas Division of Agriculture and Farm Credit of Western Arkansas.

The conference speakers are:

- Dr. Jeremy Powell, associate professor and veterinarian
- Dr. John Riley, assistant professor
- Dr. John Boyd, visiting assistant professor

Powell, associate professor and veterinarian for the U of A Department of Animal Science, will discuss causes of trichomoniasis and how to protect cattle herds from contracting it. Trichomoniasis, known as “trich,” is a disease cattlemen do not want their cattle to contract. Trich is not a new disease, but it is new to Arkansas. It can reduce a calf crop up to 50 percent. Powell will also address the new Trichomoniasis regulations for intrastate movement for bulls.

Volatility and cost of production are the most common descriptions for today’s cattle market situation. Riley, an assistant professor at Mississippi State University, will discuss the cattle market and provide some insight on where the market is going. “Expansion” is another buzzword, with many in the industry wondering if the cow and calf industry should expand. Riley will sort out the data and provide some insight.

With dry, hot conditions, pastures suffered. In addition, with escalating fertilizer prices, many producers hesitated to purchase fertilizer. Consequently, grass stands thinned and weeds increased. Boyd will address these conditions and provide cost-effective answers on how to control pasture weeds.

The conference is from 9:30 a.m. to 1 p.m., and registration is $20 at the door. For more information, contact your county extension office or visit www.uaex.edu.

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