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Kentucky Dairy Notes

May 2009

My Three Favorite Synchronization Protocols

My favorite synchronized estrus and programmed breeding protocol for cows (does not work well in heifers) is called Corbin-Heerschesynch III (David Corbin and George Heersche). Outside the state of Kentucky this is also known as a modification of the Presynch-Ovsynch protocol.

The Corbin-Heerschesynch III protocol is as follows:

- Day 0: Inject PGF2alpha (PGF = Lutalyse, Estrumate, etc.) into open cows (Do not inject pregnant cows with PGF)
- Days 0-4: Watch for heat and breed those seen in heat at the appropriate time
- Day 14: Inject cows not bred after the first PGF with PGF
- Day 14-18: Watch for heat and breed those seen in heat at appropriate time
- Day 25: Inject all cows not previously inseminated with GnRH
- Day 32 AM: Inject all cows not previously inseminated with PGF
- Days 32-34: Any cows which come into heat on these days are inseminated at the appropriate time in relation to standing heat
- Day 34 PM: Inject all cows not previously inseminated with GnRH 56 hours after the Day 32 PGF
- Day 35 AM: Inseminate 16 hours after the second GnRH (Fixed-time AI)

Calendar of injections:

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		PGF Check heat and breed	Check heat and breed	Check heat and breed	Check heat and breed	Check heat and breed
		PGF Check heat and breed	Check heat and breed	Check heat and breed	Check heat and breed	Check heat and breed
						GnRH
						PGF AM
	GnRH PM	Timed AI AM				

Cows which are not yet cycling at day 25 of the protocol should benefit from having a CIDR in place on protocol days 25 through 32.

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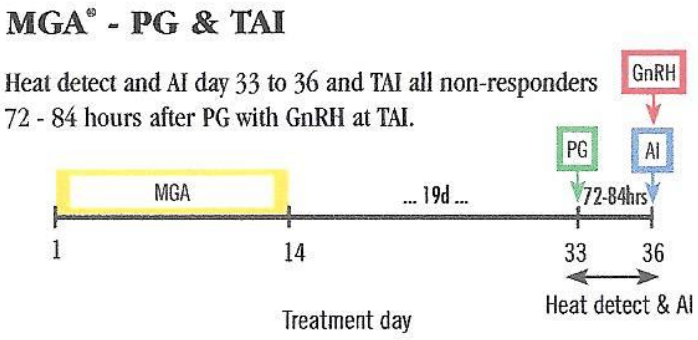
The main benefit of Corbin-Heerschesynch III is more cows get pregnant earlier compared to a conventional detect heat and breed program. The downsides are that Corbin-Heerschesynch III requires more planning and purchase of hormones. I quickly point out that breeding the cows in heat after the first two prostaglandin shots results in less hormone cost than the standard Presynch-Ovsynch program.

There are numerous synchronization programs which work well for heifers. The MGA and PGF protocol which follows has been used successfully on thousands of dairy and beef heifers.

- Days 1-14:	Feed MGA at .5 mg/head/day for 14 consecutive days
- Days 15-21:	Do not breed on first estrus after MGA
- Day 33:	Inject all animals with PGF 19 days after last MGA feeding
- Days 33-36:	Watch for estrus and breed after estrus
- Day 36:	72-84 hours after PGF time inseminate (TAI) all heifers not seen in heat and inject GnRH after insemination



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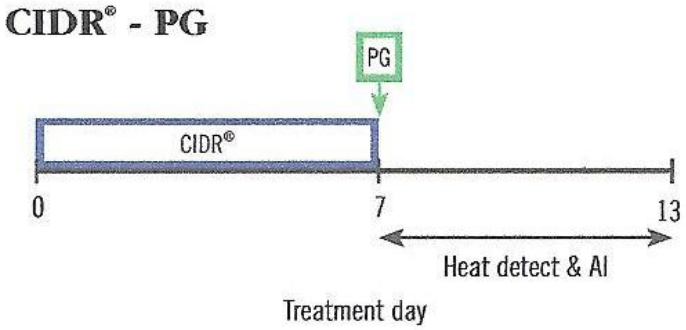
The EAZI-BREED CIDR and PGF protocol presented below also works well for heifers.

- Day 0: Insert EAZI-BREED CIDR in vagina
- Day 7: Remove CIDR and Inject PGF
- Days 7-13: Watch for heat and breed after standing heat (most will be in heat on protocol days 8, 9 and 10)



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The Power of Partial Budgeting in Dairy Decision Making

When you have a decision to make, how do you make that decision? For most of us, our decisions are based largely on intuition, gut feel, or past experiences. Sometimes, this decision making practice work, and sometimes it doesn't. In any competitive business, making the right or best decision is critical to out-competing other businesses. Certainly, in today's dairy economy, any competitive edge may be the difference between surviving or leaving the dairy business. Unfortunately, too many dairy decisions are made without a true economic evaluation of the implications of the decision. Fortunately, there are numerous tools available to help dairy producers make more informed decisions. Progressive dairy producers have already begun to adopt some of these tools and others should follow. While more sophisticated decision making tools and techniques are on the horizon, let's examine the power of a very simple technique called partial budgeting.

Whether you realize it or not, you are probably very accustomed to the practice of partial budgeting, at least in an informal manner. A partial budget is used to calculate the expected costs and benefits of alternatives encountered by a dairy business. What makes the partial budget so appealing is that this type of analysis focuses on only revenue and expenses affected by a proposed change or intervention. Typically, these changes are divided into four categories: (1) additional revenue, (2) reduced expenses, (3) reduced revenue, and (4) additional expenses. This type of analysis focuses on identifying the expected net change in revenue and expenses resulting from proposed changes rather than determining the entire profit and loss of an operation. This method is less time-consuming than complete budgeting because the focus is on a few variables rather than the complete system. One must be cautious in interpreting the results of a partial budget because they do not properly account for all possible benefits and costs, the timing of revenue and expenses, and uncertainty associated with the decision. Examples of dairy decisions where a partial budget approach is appropriate include: use of a feed additive, 2X versus 3X milking, installing cooling systems in a barn, hiring custom work, using sexed semen, and leasing versus buying equipment. On the other hand, a

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partial budget might not be appropriate for major capital investments or decisions that would alter the structure of the business.

To create a partial budget, one needs to have some idea of the potential impacts of the proposed change. Often, insufficient data exists and we are forced to make our best educated guess. Ideally, the information used in a partial budget should be based on peer-reviewed research demonstrating impact across multiple farms. When this information is not available, we will need to use the best information at hand, either from industry professionals or other farmers with experience implementing the proposed change. Whatever numbers we ultimately use should be based on sound assumptions. Conservative estimates will generally provide more realistic, less risky results than overly optimistic projections.

The general equation for a partial budget analysis is provided in Figure 1. Essentially, we are trying to estimate any changes in revenue or expenses associated with the proposed change. Estimates for each of four categories ((1) additional revenue, (2) reduced expenses, (3) reduced revenue, and (4) additional expenses) should be obtained prior to running calculations. Remember that we are only looking at impacts resulting from the proposed change. The net profitability of the change is calculated by subtracting additional expenses and reduced revenue from additional revenue and reduced expenses. A positive net profitability would generally indicate a good decision for the business while a negative net profitability would indicate an undesirable decision. Of course, higher profitability estimates would provide us more confidence that the decision is the right thing to do.

The most simple partial budgets can be performed with a pencil, paper, and a calculator. Just writing the numbers down and working through the calculations can be a valuable exercise. Often, though, the calculations can quickly become overwhelming; thus, spreadsheets are commonly employed in partial budget analyses. Not only do spreadsheets make the calculations easier but they also open the doors for more detailed examination of the decision. With a spreadsheet, we can easily perform sensitivity or "what if" analyses. For example, we can determine how the decision changes based on number of cows in the herd, pounds of milk gained by implementing a practice, or the cost of whatever practice or technology is being considered. It can be useful to run three analyses under (1) anticipated, (2) worst-case, and (3) best-case scenarios. This type of sensitivity analysis can provide considerable insight into the amount of risk involved in the decision and can help scrutinize assumptions used. If you aren't comfortable or don't have the time to build

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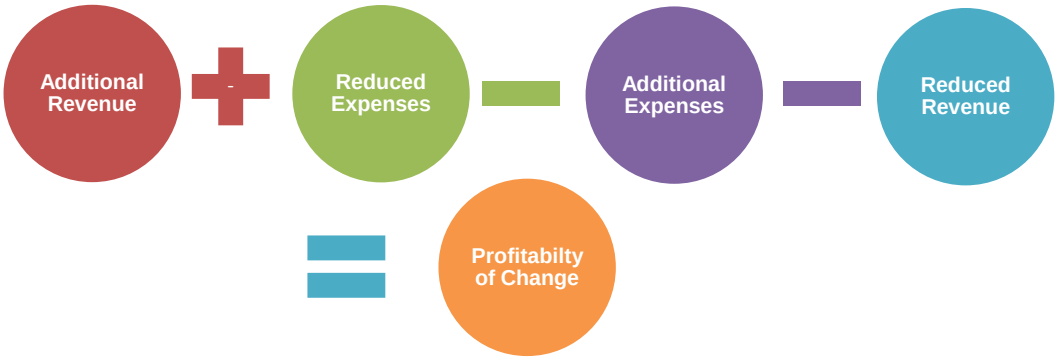
a spreadsheet, there are dozens of already developed partial budget spreadsheets available online focused on dairy-specific decisions. In addition to saving time working through calculations, these spreadsheets often have assumptions already built-in. Examples can be found from the Wisconsin Center for Dairy Profitability (http://cdp.wisc.edu/), the University of Florida (http://dairy.ifas.ufl.edu/tools/index.shtml), the Pennsylvania State Dairy Alliance (http://dairyalliance.psu.edu/im/organization) and the University of Wisconsin Extension Forage Resources (http://www.uwex.edu/ces/crops/uwforage/dec_soft.htm). A simple Google search can lead you to the appropriate spreadsheet for your decision. If you are unable to find an existing spreadsheet, contact your county agriculture agent, trusted industry advisor, or state dairy extension specialist to help you develop a new one.

Ultimately, a partial budget analysis does not tell decision makers what to do, but it provides them with a more detailed perspective on the economic implications of the decision. The next time you have a decision to make, consider using a partial budget approach to assist in the decision making process!

Figure 1. Simple equation for a partial budget.



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Kentucky Veterinary Diagnostic Labs

As you are probably aware, Kentucky has two veterinary labs that support the animal industries with diagnostic medical testing services--the Livestock Disease Diagnostic Center (LDDC) at the University of Kentucky in Lexington and the Breathitt Veterinary Center (BVC) at Murray State in Hopkinsville. Dr. Craig Carter is the Director of the LDDC, while Dr. Wade Northington is the Director of the BVC. Our goal is to provide services toward improving the health of your herds. Beginning with this article and hopefully future ones, we hope to build closer ties to the dairy industry in Kentucky. Our only objective is to serve you better!

The LDDC and BVC are both full service veterinary diagnostic labs. Services range from diagnostic and regulatory testing to full necropsy (autopsy). If your farm is experiencing a disease problem in one or more animals or deaths, the LDDC can run laboratory tests on request by your veterinarian to help identify the cause. For more serious or puzzling health issues, you can request an epidemiological field investigation.

The LDDC website, www.lddc.uky.edu, lists our fee schedule, what tests we offer, and also, our new *Animal Health Risk Outlook.* If you follow the link from the main page, it will show you an interactive map of the state of Kentucky. Simply scroll your cursor over your county, and you will be able to see what diseases we have diagnosed from your county in the past 30 days. It will not tell you addresses or farm names as we keep all information strictly confidential; but it will tell you the types of diseases that are currently in your county and surrounding counties. This will help you to design a sound vaccination and preventive medicine program for your herd. Periodically, we notice an increase in certain diseases or syndromes and publish an animal health bulletin on the website and send it out via our Kentucky Veterinary Diagnostic Lab listserv. If you would like be placed on the listserv to receive animal alerts via email, please contact the LDDC epidemiologist at the email address or phone number listed above.

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With spring, many disease problems arise in cattle, some of which can be prevented by vaccination. For example, in 2006 the LDDC detected a high incidence of Blackleg deaths in cattle around the eastern Kentucky region. An awareness campaign was mounted to encourage vaccination by cattle farmers. As a result, the incidence of the disease, based on laboratory data, has been minimal ever since, saving the cattle industry an estimated $500,000 each year. Currently there are over 30 vaccines available on the market for use in cattle in the U.S. The decision on whether to use any of these products must be based on the presence of a disease on a particular farm, the seasonality of disease, management and risk factors. The LDDC and BVC can assist you and your veterinarian in vaccine selection by confirming digestive, neurological, respiratory, parasitic and other diseases on your premises.

We are happy to report that the LDDC $28.5M renovation-expansion is under way. The ground-breaking ceremony on September 12, 2008 was attended by Governor Steve Beshear, Commissioner Richie Farmer, many Kentucky legislators and distinguished guests. This construction is scheduled to be completed by fall of 2010. The project involves adding a state-of-the-art necropsy (autopsy) facility, much-needed additional laboratory space, a new administration wing, and a continuing education auditorium. In addition, all existing laboratory space will be totally renovated. The original facility is almost forty years old and is in desperate need of these upgrades. Finally, the laboratory must attain modern bio-safety standards to meet the requirements of our national accrediting agency, the American Association of Veterinary Laboratory Diagnosticians.

Once again, our main goal is to provide you, the livestock producers of Kentucky, services toward improving the health of your animals. We wish to serve you better, and grow closer with the dairy industry of Kentucky. Please let us know how we can help you with your specific needs.

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