Technology: Keep it Simple to Make it Work

Thomas Wynker
Artique Farms
British Columbia,   Canada

Evaluation of Technologies

The use of technologies on dairy farms can provide many benefits. However, the use of these technologies can also become overwhelming and ultimately a hindrance to the performance of the farm. Choosing the right technology for your farm can be challenging. Scheduling simple protocols and monitors will allow dairies to realize the benefits that some of these technologies can provide.

Before investing in a piece of equipment or a protocol, the result of that technology needs to be evaluated. The value of that outcome and how to reach that outcome needs to be known. There are many silver bullets that can contribute to the operation of a dairy; however, the cost of many of these programs is greater than the value of the result. The cost can be greater due to the capital investment, ongoing operational cost, and/or the time it takes to administer.

Each technology should also be evaluated for its potential use in the future. Some equipment and software packages are modular so that the dairyman can purchase the next phase when they are in need of it, which cuts the initial investment cost. If the plans for the future include expansion or change, the expandability of equipment should be considered.

Management Software

Management software is a pivotal investment for the operation of any dairy farm. It is also an expensive single purchase. It requires the purchase of a computer and its peripherals, time for training, and the software itself.

The purchase of software is an easy decision when building a new parlor. However, the purchase of third party software can be a difficult. Third party software, such as DairyComp 305, DHI Provo, and Vampp, can be used in combination with parlor software or as a stand-alone system. Whichever software package in chosen, the use of automated lists, sorts, and evaluations, will either make the process quick or cumbersome.

The automated process of management software can result in employees administering complex protocols without the need to have a complete understanding of said protocols. Combining Pre-Synchs, hoof trimmings, vaccinations, vet checks, fresh cow programs, timed body condition scores, and pen movements into one automated program, can be easily accomplished. The person doing that job can be spending time completing the task with little time used to make the decision about which cows, when, where, how, and why.

```
- Dairy Comp 305 ------------------.                      ---------------------------- Page   1
- Command  : CCLIST                                                                          -
- Expanded:  LIST ID YSCOD YTCOD TREM:107 EVT YTEMP:5 TEMP:107 DIM GROUP MAVG MTOT:4 MLKY:4 MD -
-            EV:4 DOP:3 FOR CCODE>0\I                                                         -
- C:COWFILE1.DAT --------------------- Artique Farms ----------------------------25/ 1/10---

    ID YSCOD    YTCOD TREM    EVT     YTEMP   TEMP    DIM GROUP  MAVG MTOT MLKY MDEV DOP
  ===== ======== ===== ======= ======= ===== ======== ===== ===== ===== ==== ==== ==== ===

    35 Fresh Co 0      _____ TRANSFR 101.0 _____    7     3    32   41   37    4  16
    73 Folow Up EXNL   _____ TRANSFR 102.0            6     3    25   26   24    2  14
    90 Repro    2PG    _____ OK      103.0 _____   66     5    36   36   34    2  79
   163 2nd Fres 0      _____ TRANSFR 101.0 _____   20     3    42   41   43   -2  33
   172 Repro    2BRD   _____ BRED        0           213     5    37   46   34   12 126
   234 Other    LOW    _____ TRANSFR 102.0 _____   29     1    59   63   43   20  45
   262 Repro    INFS   _____ OVNOBRD     0 _____  149     1    43    0   48  -48 101
   268 Repro    2PG    _____ OK      100.5 _____  106     5    44   47    0   47 125
   644 Fresh Co 0      _____ FRESH       0 _____    6     5    21    0    0    0   9
   719 Fresh Co 0      _____ TREAT   101.5 _____    4     3    24   31   22    9   8
   778 Repro    2PG    _____ OK      101.5 _____   74     5    35   31   28    3  91
   809 2nd Fres 0      _____ TRANSFR 101.5 _____   20     3     0    0    0    0  35
   825 Other    VAC    _____ TRANSFR 103.5 _____   48     1    49   48   39    9  61
   841 Fresh Co 0      _____ TRANSFR 100.0 _____    1     3    11   11    0   11   3
  1009 Fresh Co 0      _____ FRESH   101.5 _____    4     5    33   38   35    3  22
  1025 Fresh Co 0      _____ TRANSFR 102.0 _____    8     3    39   39   41   -2  16
  1083 Repro    2BRD   _____ BRED    100.5            66     1    49   43   50   -7  79
  1086 Fresh Co 0      _____ TRANSFR 101.0 _____    5     3    27   34   31    3  10
  1105 Other    MIX    _____ TRANSFR 102.5            29     1    31   33   29    4  57
```

Figure 1. Sample daily sort list.

Electronic Identification

Electronic identification systems present farms with the ability to record milk production, activity, and conductivity. It also allows the use of automated sort gates and radio frequency tags for the administration and tracking of hormone programs, pregnancy palpations, fresh cow programs, and vaccinations. Using electronic identification can decrease the man-hours needed to complete protocols on dairies.

The type of electronic identification to be used in usually determined by the choice of milking parlor, but the use of the RFID ear-tags is slowly becoming greater. RFID ear-tags can now be used by sort gates and parlors. Also, the ability to use handheld computers with RFID readers allows the dairyman to quickly process large groups of animals. In the future RFID readers will be used to determine eating and drinking times.

Activity monitors greatly reduce the need for visual heat detection and the use of hormone programs. The risk of activity monitors is that it is very easy to have large quantities of animals that show up on lists. This can be false heats (too sensitive high) or false lame/sick cows (too sensitive low). Also, when set incorrectly, animals that are in estrus can be missed. When used with an automated sort gate, animals will be sorted if they hit an alarm level (too high or low).

All electronic identification systems can be operated to enhance protocols on a dairy farm. The use of the data generated by activity monitors, the ability to automatically sort animals, and the capability to accurately process animals can cut labour costs and increase overall herd production.

Scheduling

Scheduling of protocols, and their use of equipment, is particularly important to making technologies realize their full potential. Programs and protocols should be designed with simplicity, efficiency, and repetition in mind. The use of equipment, hormones, and data need to be combined into one system.

Using a schedule that repeats itself provides stability and becomes routine. When tasks are repeated at regular intervals, employee schedules can be tailored to utilize different skill sets and allow for planned training. The frequency of protocols will be determined by herd size and individual needs.

	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Week 1	Presynch (PG + GNRH)	Herd Health (PG + GNRH)	Ovsynch PG	Hoof Trim & TAI	TAI	TAI	
Week 2	Presynch (PG + GNRH)	Ovsynch PG	Herd Health (PG + GNRH)	Hoof Trim & TAI	TAI	TAI	
Week 1	Presynch (PG + GNRH)	Herd Health (PG + GNRH)	Ovsynch PG	Hoof Trim & TAI	TAI	TAI	
Week 2	Presynch (PG + GNRH)	Ovsynch PG	Herd Health (PG + GNRH)	Hoof Trim & TAI	TAI	TAI	

Figure 2. Sample schedule

Benefits

Properly implemented technologies can provide dairy farms with many benefits. These include:
- Herd production data
- Input cost control
- Improved Herd value
- Accurate protocol administration
- Decreased labour needs
- Diversification
- Expansion

Technology can be a particularly costly investment when done incorrectly or inefficiently. Even though an appropriately implemented technology can be a large capital investment, it should be able to provide a return on investment. If it does not, there should be a re-evaluation process in place to determine if the technology, or how it is used, prevents it from positively contributing to the dairy.