



## Bredsum Improvements

### Introduction:

Getting cows pregnant is an important goal on a dairy farm. Unfortunately, there are many factors that influence the success of a breeding. Traditionally, these are divided into heat detection, technician, sire and cow. The actual risk of conception is the product of these four factors.

For nearly 25 years, BREDSUM has had the ability to compare different levels of some of the factors affecting conception. The Bredsum sub-menu displays these: Sire, Stud Code, Technician, Breeding Code, Times Bred, Day of the Week, Calendar Month, and Cycle Number. In addition, there is now the X-option to look at two factors simultaneously.

However, these single-variable analyses have the potential to be misleading under certain circumstances. If a new technician starts in the spring, and the summer is a more difficult time to settle cows, the conception risk for that technician likely will look worse than other technicians that have been breeding all year. Or, one technician that breeds more virgin heifers will look better than another equally skilled technician that breeds mainly adult cows. Similar examples exist for timed-breedings vs. standing heats, etc.

A more complete analysis would simultaneously look at all these factors. Bredsum now has this ability.

### Goals

- Provide adjusted estimates of conception risk by various factors, such as technician.
- Rank the factors in order of importance.
- Group similar levels.
- Estimate confidence intervals for each level.
- Estimate contribution of each factor to the overall conception risk on the farm.

### Factors that might affect conception:

<b>TECH</b>	Technician
<b>HDAT</b>	Season, based on month of breeding
<b>LACT</b>	Lactation group – 0, 1, 2, 3+
<b>DIM</b>	Cycle – Heifer, DIM<VWP, 1, 2, 3+
<b>AGE</b>	Month – Adult, 11, 12, ... 24+ months
<b>TBRD</b>	Times Bred – 1, 2, 3+
<b>REM</b>	Breeding Code – ie. Standing, Chalk, OvSynch, etc.
<b>SID</b>	Stud of sire – 1, 11, 28, etc [proxy for semen handling, sexed semen]
<b>LSIR</b>	Service sire
<b>MILK</b>	Milk @ breeding – nearest 5 units

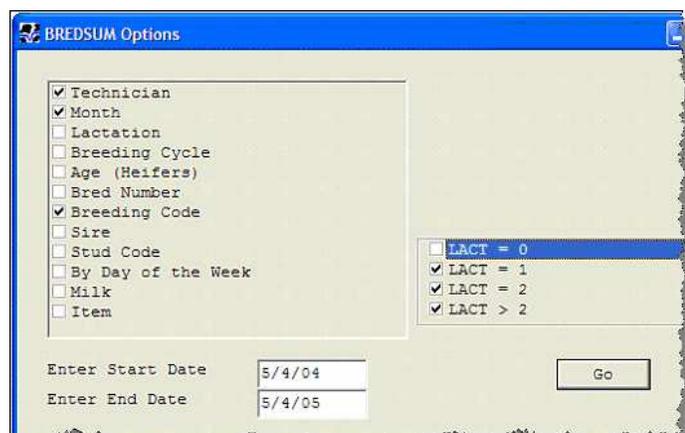
Level - The category of a factor, such as which technician.

## BREDSUM Syntax:

BREDSUM,

BREDSUM\X to look at two factors simultaneously,

BREDSUM\XX to look at more than two factors simultaneously.

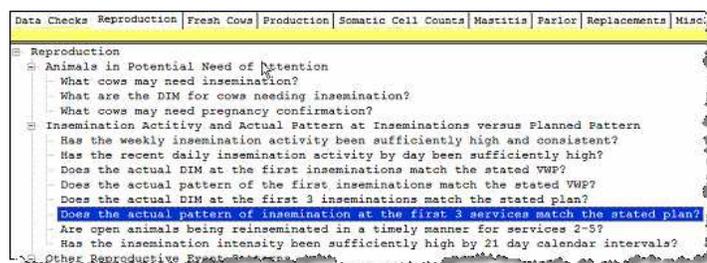


Sometimes, even BREDSUM will not be able to estimate conception. For instance, if two technicians breed only heifers; and two other technicians only breed cow, the data are completely “confounded”, and the phase “**No solution possible.**” will be displayed. In those cases, clicking the Options button, and limiting lactation, or selecting fewer factors might help.

## Brand New GUIDE Command

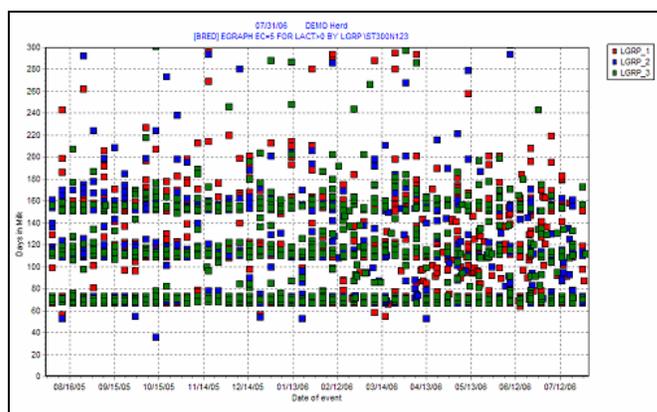
GUIDE is a command that identifies questions and runs reports and/or graphs that will answer them. It is designed for an “interactive” session of asking “questions” and seeing the “answers” to them.

The actual contents of the GUIDE will continue to evolve as dairies ask new questions, and new tools are developed to answer them. Type **GUIDE** on the command line and press **enter**. This will open a dialogue menu that looks similar to the following:



If we click on one of the questions, the answer will appear in the form of a report from DC305. This could be a list, table or graph.

The following graph answered the question, “Does the actual pattern of insemination at the first 3 services match the stated plan?”



This graph shows the DIM for each of the first three breedings for the past year. Because it is a scatter graph, it shows the number of first, second, and third inseminations, the DIM at each insemination, and the lactation group. The display of each lactation group can be toggled off and on by clicking within the legend box. This herd has been using a great deal of synchronization, evidenced by definite groupings of insemination both by DIM and by calendar day.

## Graphical Event Analysis: Enhancements to EGRAPH

Recording events is fundamental to operating a dairy farm. Recording diseases and using the predetermined protocols dramatically helps accurate treatment and makes the creation of hospital lists describing the appropriate therapies more reliable. Prior to 2003, some farms had a policy of entering every treatment, so there might be 3 MAST entries on three successive days for a clinical case. But with the FDA recommending the use of protocols, data entry became far more simplified. A single entry of MAST is all that is necessary, and the Protocol selection automatically calculates the withholding dates.

Accurate event entry provides a secondary benefit. It allows monitoring of the critical processes on a dairy. Post-partum diseases are the earliest indication of a problem with the transition process. These disease records are also the most specific indicators. There are many causes of low milk production – accurate disease detection helps narrow the choices.

EGRAPH allows rapid visual assessment of disease and events data. Unfortunately, because of the number of different ways people want to evaluate problems and successes, it has become rather complex. The current version now has new tools to facilitate easier usage.

For those who prefer using the PLOT or GRAPH command, “**PLOT** event” or “**GRAPH** event” generate the same output as “**EGRAPH** event”.

The default display is a histogram of selected event(s) by calendar date over the past year. The second common stratification of events is by **DIM** for adult cows, or by **AGE** for replacements. The third common stratification is by month of fresh to detect if there is an effect from a change in the transition program.

In the events associated with pregnancy diagnosis (**OPEN**, **PREG** and **PREV**) the additional **BY** items of **DSLH** or **DCC** is available to assess when cows are being diagnosed during gestation.

**EGRAPH** [event[,event]...] [**BY** item] [**FOR** ...] [switches], where:

event is any event name such as **MAST**, **BRED**, **CULTURE**, **SOLD**, etc

item is optional, limited to:

DIM (or AGE)

DSLH (for BRED, OPEN, PREG or PREV)

DCC (PREG, ABORT, DRY)

### Switches:

<b>A</b> Age in days (by AGE)	<b>Nn</b> Only the Nth event (can have multiple event #s)
<b>C</b> Show breeding Code for bred	<b>P</b> Protocol – or person (Tech) of breeding
<b>Ddays</b> Date range starting days ago	<b>R[n]</b> Remark[n] or Result
<b>Edays</b> Ending date range days ago	<b>S</b> Scatter - show all events vs. event date
<b>F</b> month of Fresh	<b>T[n]</b> Top limit
<b>G</b> Gestation length (by DCC)	<b>Wdays</b> Width of histogram in days (default is 7 days)
<b>H</b> since heat (by DSLH)	<b>W0</b> Month of event
<b>I</b> In milk (by DIM)	<b>Y</b> Youngstock
<b>M</b> Multi-bar - stacked	<b>Z</b> Table view is default

*Special Cases:*

**FRESH** defaults to lactation number  
\R shows result of freshening – Alive, Dead  
\C show calf sex – Male, Female

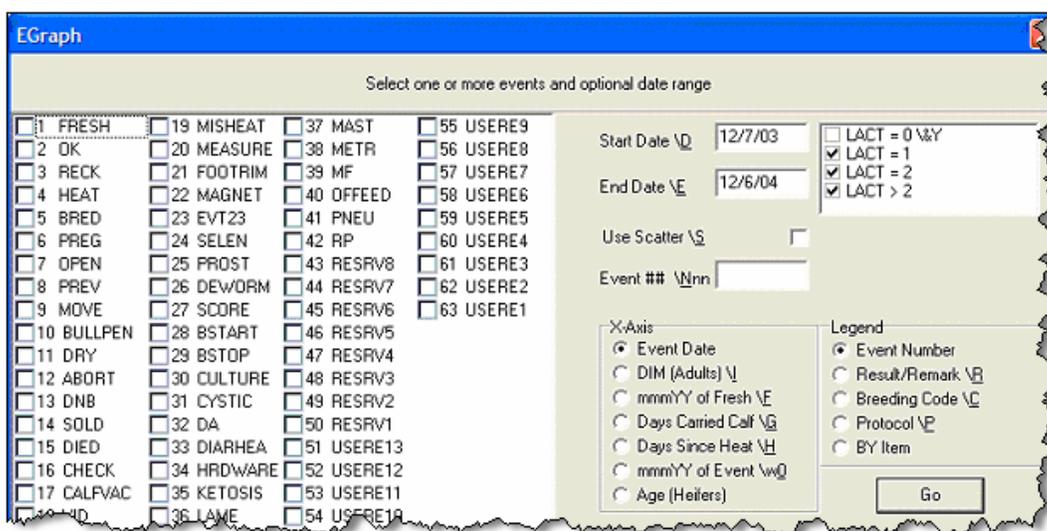
**BRED** defaults to bred number (times bred)  
\R shows result – Preg, Open, Unknown, etc  
\C shows breeding code – Standing, OvSynch, etc  
\P shows person – AI technician

**PREG,OPEN,PREV** – same as **BRED**

**SOLD** displays disposal code

**CULTURE** displays primary organism

**EGRAPH** alone brings up an options screen that permits selection of all these choices. The Options button will invoke this display so that the graph can be customized on-the-fly.



*Examples:*

**EGRAPH MAST**

Histogram of **MAST** events over the past year – colors represent first, second, etc. incident.

**PLOT MAST**

Identical to **EGRAPH MAST**

**PLOT BRED**

Histogram of breedings by date – colors represent first, second, etc. breeding.

**PLOT BRED\S**

Scattergraph of breedings – colors represent first, second, etc. breeding.

**PLOT BRED\SP**

Scattergraph of breedings – colors represent breeding technician.

**PLOT BRED\SC**

Scattergraph of breedings – colors represent breeding code – standing, OvSynch, etc

**PLOT BRED\SR**

Scattergraph of breedings – colors represent result – open, pregnant, unknown, etc.

## PLOT BRED\SRD150

Scattergraph of breeding results from the past 5 months

## PLOT BRED\SRD150T150

Scattergraph of breeding results from the past 5 months, only the first 150 days-in-milk.

## PLOT MAST\R

Histogram of MAST by date – colors represent first character of the remark

## PLOT MAST\P

Histogram of MAST by date – colors represent protocol used for treatment

## PLOT MAST BY DIM

Histogram of MAST events over the past year, but by days-in-milk.

## PLOT PNEU BY AGE FOR LACT=0

Histogram of pneumonia by age

Note: Clicking on the legends toggles the display of those cows.

## Options Button



A new button has been added to many routines (e.g., EGRAPH, PLOT, BREDSUM). This allows modification and re-running of the report without resorting to changing the command or adding switches.

## Event Analysis Reports- Enhancements to EVENTS

Changes have been made to EVENTS reports to make them easier to read and expand their scope. **EVENTS\5** calls the monthly table of events. The header for this was the calendar month. The problem with it was the current month was always a combination of the current year and the last year.

This has now changed to show the year each month is taken from. The month that is a combination of both years has an “\*\*” in it:

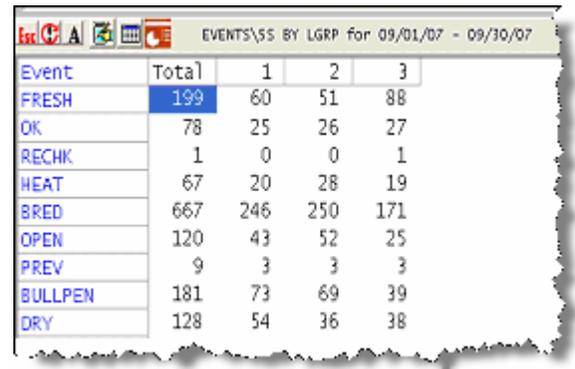
### EVENTS\50

If the letter “o” is added to the switch, the events are “ordered”.

Event	Total	Jan07	Feb07	Mar07	Apr07	May07	Jun07	Jul07	Aug07	Sep07	Oct**	Nov06	Dec06
FRESH	2457	193	156	185	155	222	240	236	246	199	195	210	220
CK	3014	207	260	272	235	326	219	272	241	325	385	165	107
RECHK	104	17	7	8	8	16	11	7	4	9	13	2	2
HEAT	708	52	50	60	52	57	44	62	57	69	74	69	62
BRED	9966	707	742	879	805	724	822	935	939	964	891	782	776
PREG	2949	231	242	329	308	252	270	326	200	0	251	291	249
CPEN	5457	423	454	490	450	429	518	573	576	162	483	431	468
PREV	311	26	21	22	15	40	32	24	37	27	34	17	16
BULLPEN	3490	218	213	274	320	304	295	340	338	347	299	273	269
DRY	1600	108	90	140	145	155	185	123	140	128	129	125	132
ABORT	308	28	37	29	24	50	33	24	12	11	12	26	22
DNB	88	5	2	7	4	8	6	7	16	10	6	9	8
SOLD	780	58	47	69	43	44	75	74	63	60	103	95	49
DIED	200	15	19	11	16	8	13	23	17	30	22	16	10
CHECK	349	26	9	44	33	17	15	31	68	44	35	19	8
CALFVAC	1363	81	70	64	99	210	68	69	76	76	145	188	217
XID	986	64	50	66	72	85	89	67	181	73	79	80	80
MAST	609	45	49	46	48	47	68	65	44	47	59	53	42

## EVENTS\5S

Adding an “s” to the switch allows start and end dates for this table. It can be extended for 31 months. “BY” can be added to the EVENTS command to make different groups:



Event	Total	1	2	3
FRESH	199	60	51	88
OK	78	25	26	27
RECHK	1	0	0	1
HEAT	67	20	28	19
BRED	667	246	250	171
OPEN	120	43	52	25
PREV	9	3	3	3
BULLPEN	181	73	69	39
DRY	128	54	36	38

The command in the gray bar made the following events table, in this case sorted by lactation group.

## Expanded Daily Hospital Treatment Details

The adoption of treatment protocols by progressive farms has been a substantive improvement to dairy management in the following areas:

1. Alignment with FDA drug recording recommendations.
2. Automatic determination of milk and meat withdrawals, and recheck dates.
3. Guiding employees in hospital treatments.
4. Tracking of disease incidence and severity.
5. Ability to assist in inventory management.

Along with these functions we have put cautions into the program to help keep treated animals from being submitted into the food. As an example, if Protocols are in place on the dairy and pens are designated as MILK pens, if a cow is moved into a MILK pen and her milk withdrawal date shows it is too early to put her milk in the bulk tank, a warning message will come up when this activity is done. This occurs independently of how the cow is moved into the pen, either with or without the use of the MOVE event.

We have also set up color schemes in events and items to help keep antibiotic contamination out of the human food chain. For example, if a cow has mastitis and is being treated with an antibiotic that has a 4 day milk withdrawal and an 10 day beef withdrawal, the MAST event will remain RED until the milk withdrawal date is past. Also the item used for milk withdrawal date (e.g. MKDAT) will be RED until it is past. After this is date is past, the MAST event will turn YELLOW, for caution, since she is still not allowed to be sold for beef. If sold is entered into her record before the beef date (BFDAT) has been reached a warning message appears. And, as with the MKDAT being RED for milk withdrawal, the BFDAT will be YELLOW until it has been reached.

Contact Dairy One support for help setting up and using Protocols, Hospitals lists and withdrawal dates.

## New Item Types – 54, 85, 130

**Item Substrings** - Type 54 allows the extraction of a substring of an item.

The first parameter is the item from which to extract.

The second parameter is the starting location (0 means the end), and the third parameter is the length (number of characters to extract).

**Example:**

<b>ItemName</b>	<b>Type</b>	<b>Op1</b>	<b>Op2</b>	<b>Description</b>
STATE	54	USDA	1:2	First two characters of USDA
CODES	54	USDA	3:2	3rd, 4th, and 5th chars of USDA
LAST4	54	USDA	0:4	Last 4 characters of USDA

<b>ID</b>	<b>USDA</b>	<b>STATE</b>	<b>CODES</b>	<b>LAST4</b>
44	35WQX7622	35	WQX	7622
132	35LDH3775	35	LDH	3775
138	35DWP0883	35	DWP	0883
140	35SAV1735	35	SAV	1735
142	35LDH3399	35	LDH	3399
143	35LDH3781	35	LDH	3781
170	33VEU2517	33	VEU	2517

**Ratios of protein and fat.**

Type 85.n.12 will return the ratio of Fat/Protein.

Type 85.n.21 will return the ratio of Protein/Fat.

Example: To easily compute the percentage of the protein to fat on the first monthly test, define P2F1 as type 85.1.21.

<b>ID</b>	<b>FAT1</b>	<b>PTN1</b>	<b>P2F1</b>
517	4.0	3.1	77

3.1 is 77% of 4.0

**Month of a Date.** Type 130. Returns the first day of the month, formatted as MMMYY. So if MOFSH is defined as 130, FDAT, and FDAT is 23 June, 2007, the value returned will be 1 June 2007, which will be displayed as Jun07.

This is useful for stratifying events by month-of-fresh, or by month of events, etc. See the discussions in EGRAPH and EVENTS.

**Herd Codes**

Other changes that have occurred are primarily for special, internal use. One that might be helpful in some circumstances is an item type 105, which configured as a 2 and 0 will return the herd code stored in the overhead of the cowfile. Herd codes are becoming increasingly important as we get more sophisticated with data transfer using the internet.

It is important to remember that Herd Codes are different than “premises IDs” which are being put in place in some states and might be mandatory in the future throughout the USA. Premises IDs refer to a physical location of a farming operation. In its simplest terms, a Premises is the area that a group of animals occupy during their normal existence. Thus if dry cows are kept in one location and milking cows in another, the two might be considered one ‘premises’ since animals will be transported back and forth frequently. The general thought is the when an animal goes from one “premises” to another, that movement will ultimately need to be recorded and sent to the government. The final details of all of this has not been worked out, might vary by state and implementation and reporting has not yet started. (**Note:** “Premises” is the proper word for the land and buildings used for housing animals. “Premise” is reserved for the definition of an assumption in a logic debate.)

## Specific to Consultant Users: SETDAYE

The \E switch has been added to the SETDAY command. This will set the cowfile's log-on date to that of the last event or test date. It is useful in those situations where consultants accidentally log-on using the wrong date. Wrong log-on dates result in wrong reports because of things that are date sensitive. It replaces using the command SHOW ID EDAY DOWNBY EDAY to fine the proper log-on date.

## SUM

In earlier versions, when a SUM report was be sorted by a 2-byte item (DIM, FDAT, SID, etc.) it would only sort the first 32 break downs and the rest was grouped together at the end. Now it will sort the whole list by the breakdown. Such a command could be SUM RELV BY SID FOR LACT>0 for example. If such a list were printed earlier, it might now require a lot more paper.

## MONITOR

MONITOR can now use negative numbers in its parameters. For example, you might want to know what percent of the cows tested produced less than -10 pounds of expected milk. The parameter could be setup to by EXPMK<-10, {blank}, MILK>0, DDAT=0.

## Enhanced Exporting of Reports

At the top of each report a number of icons are placed which are used to call procedures to help export and use the data in other programs.



These six icons have the following function:

	The Esc button exits from the report.
	This icon will refresh the last report command that was used.
	This icon is used to adjust font size.
	This icon will put the report in Notepad. It can then be saved and used by other programs.
	This icon brings the report into Windows Excel. Excel must be installed on the computer for this to work. It is really exporting a CSV text file for use.
	This icon will export any report or graph into Power Point. If Power Point program is not opened it must be for this to be viewed. It will put the slideshow into a file named whatever file name is given to the print capture filename that is defined in SETUP.

## “FOR” Enhancements for selecting cows with or without certain events.

The “For” Statement now allows you to find cows that have or have not had certain events recorded. Assume MAST is event #20 in the following examples.

### FOR EC>20

Cows that have had at least one MAST event this lactation.

### FOR EC<20

Cows that have not had even one MAST event this lactation.

**FOR EC=20**

Cows had MAST as the last event this lactation.

**FOR EC>20 DIM=20-50**

Cows that have had at least one MAST event between 20-50 DIM.

FOR DIM=20-50 selects cows currently between 20-50 DIM.

**FOR EC>20 EDAY=2/1-2/28**

Cows that have had at least one MAST event in February.

FOR EDAY=2/1-2/28 selects cows whose last event was in February.

**FOR EC>20 REM=PIRSUE**

Cows that have had at least one MAST event with REM of PIRSUE.

FOR REM=PIRSUE selects cows whose last REM was PIRSUE.

**FOR EC>20 REM>PIR**

Cows that have had at least one MAST event with REM containing PIR

**FOR REM>PIRSUE** selects cows whose last REM contains PIR.

FOR MAST is the same as **FOR EC>20**.

## **Internet Transfer of Data between Heifer Growers and Dairies**

A simple and complete method for sending and receiving data between source farms (SF) and heifer growers (HG) has been developed. To function properly, information about the calves born at a SF needs to be electronically sent to a HG and the data entered by heifer grower needs to be transferred back to the SF on a regular basis.

Previously, a complex batch file process was used to move the data via cowfile exchanges. Now an alternative has been developed to smoothly exchange events and items entered by either the heifer grower or the dairy in a much more automated manner. This new data transfer method is called iTrans and uses the Internet. The Internet connection connects to our "iLoop" which provides the process for the two-way data exchange. For this to work, both sites will need to be configured properly on the iLoop using the Internet. High speed is recommended, but dial-up connections should be possible as the files being exchanged are generally less than 1 Megabyte. Windows will need to be configured to automatically establish the internet connection if using a dial-up connection.

In summary, this procedure allows needed data to be sent automatically to the calf ranch or heifer ranch. This would include ID, birth dates, electronic ID tag numbers, and other information that might be needed including parentage, twinning or type information. As events are entered into the heifer's record, they will be sent back to the heifer's record at the dairy so it becomes possible for those there to follow the progress of their animals through growing and breeding. Contact Dairy Management Resources at 1.800.496.3344 ext. 3 if you have an interest in setting this up.