DAIRY ANIMAL PRODUCTIVITY ENHANCEMENT PROGRAM
With
HERDMAN

(DAIRY ANIMAL DATA RECORDING SYSTEM)

Validated Under projects supported by

Bombay Veterinary College, Parel, Mumbai **400 012**, India
National Bank for Agricultural and Rural Development, Mumbai
India Country Development Marketplace-World Bank

Extensively tested at
Chitale Dairy / Sangamner Milk Union, Maharashtra
Several Livestock Research Stations of Agricultural Universities
More than **50** Commercial Dairy Farms
Recommended In
Draft Report of the Farmers' Commission of Government of India

For further Details: Please contact: Infovet, 106, Halima Apartment, Takoli, Old Belapur Road, Kalwe, Thane – 400 605, India infovet_india@yahoo.com Telephone: 91-22- 25411574

Dairy Animal Productivity Enhancement Need of the Hour

World over dairy animal productivity has increased to many-fold, whereas in India the milk production and fertility have remained more or less static over several decades.

Productivity through planned genetic improvement is more economical than other approaches.

Optimum farmers' resource management ensures continued productivity at affordable cost of production

Many countries have achieved remarkable progress by first setting up animal data recording system.

Such a system permits:

- ü Improving veterinary, animal husbandry and other services to farmers by optimizing management

- ü Implementing programs of scientific breeding and genetic improvement

- ü Detection of underlying problems and their causal association, so scientific solutions are possible

Infovet has developed user-friendly, farmer-centric and India-appropriate computerized animal data recording and analysis system for the dairy industry. The software enables simple, affordable system for data recording with facilities of data analysis report communication to farmers, dairy cooperatives, veterinarians and Milk Unions.

Several networking options available to suit diverse needs of the customers

Herdman Modules:

Herdman has been developed in modular form so that in different phases additional modules could be added: The modules are:

1. **Core Module** including Master entries, Breeding, production, health lifetime records, reports and herd performance analysis

Salient Features of Herdman:

- The program enables maintaining of lifetime animals records of cow and buffalo.
- The records of cow and buffalo are maintained in the same database, but the data analysis and report generation can be under taken separately.
- The data analysis capability for different breeds of cow and buffalo
- The program can be custom designed for different breeds by defining parameters
- The data can be analyzed as fertility and production indices
- Generates daily action lists for smooth farm / service management

- The software is window-based and provides the computing and analysis and networking strength of VB.Net and SQL-Server (Oracle) as database.
- It is icon / menu driven hence even a moderately literate farmer can operate the software without any difficulty.
- The records of all categories of animals, such as, calves, heifers, adults, breeding bulls and working bullocks can be maintained.
- The records of culled, sold or died animals maintained in archive files that can be retrieved easily to analyze the data

Why animal data recording system?
Profitable dairy farming requires maintaining animals healthy, productive and optimization of fertility and inputs, such as feed, fodder, etc. To achieve this farm management has to focus on detection of production, fertility and health under-performances, detection of factors associated with these and then developing strategies to eliminate these problems in a cost-effective way. This system revolves around economic considerations for each management decisions. Unfortunately in India the farm management system is focus on treatment of sick animals and minimizing damage done by clinical and production problems. Another important objective of the farm is to improve genetics of animals by scientifically planning breeding. In the dairy developed countries the farm management is focused on herd health and productivity management. Such a system requires a system to enable animal data recording and periodic analysis. Animal data keeping leads to several benefits:

- The data can be used for progeny testing
- Based on animal record and information management the services could be improved. For example the farm manager can plan the farm work by processing the animal data.

- The protocol-centric rather than observation-oriented services can be provided by generating list of following actions:

  - ∨ Animals in heat
  - ∨ Animals for pregnancy check
  - ∨ Animal due for calving
  - ∨ Animals Due for calving
  - ∨ Animals Due for drying off
  - ∨ Calves for weight

- Balanced feed formulation services
- Prevention of metabolic and nutritional diseases
- Genetic improvement services based on planned breeding
- Web-enabled livestock marketing services
- Better monitoring of the farm efficiency by data networking
- Easy access to animal data of all the farms under administrative control

Herdman Software Program:
Infovet has developed user-friendly, farmer-centric computerized animal data recording and analysis system for the dairy industry. The software enables simple, affordable system for data recording with facilities of data analysis report communication to farmers, dairy cooperatives, veterinarians and Milk Unions. The software is now available under the name Herdman. These software programs are probably the first successful industry-university joint effort in animal husbandry-related software development and commercialization.

Herdman^Coop **is a total solution for dairy animal herd health and productivity management. It is user-friendly and can be used with or without pocket PC-based field barn-level software. The program has been developed for data networking hence data from different herds and lots can be merged without any duplication.**

Herdman^Com **generates many technical and administrative reports. These reports are potential inputs in identifying problems, planning, monitoring and evaluation of various improvement programs implemented by the organization.**

Salient Features of Herdman:

The central issue in herd health management is maintaining individual animal data in a format that can be compiled and analyzed into rates and performance indices, based on which problem detection is possible.

- The software is window-based and provides the computing and analysis strength of VB.NET and SQL Server / Oracle

- **Developed as per the guidelines of International Committee on Animal Records (ICAR).**

- The software offers total solution in animal recording, data warehousing and mining.

- The program has networking facility so that a large number of centers can be networked either through LAN or Dial Up connection to the server. The data merging is simultaneous.
- It is icon / menu driven hence even a moderately literate staff can operate the software without any difficulty.
- The software maintains life-time records of animals in herds / villages. Records of cows and buffaloes can be maintained simultaneously but the data is internally analyzed separately. The records of all categories of animals, such as, calves, heifers, adults, breeding bulls, culled, dies animals, and working bullocks can be maintained.
- Master entries can be created for the data required to be entered repeatedly e.g. List of owners, breeds, suppliers etc.
- The program has facility of data syncing from PDA used by the field workers.
- **The program provides provision of providing animal information access to the farmers through sms messaging.**
- The program can be converted into regional languages, if so demanded

Data Networking with Head Office for Better Monitoring:

In case data networking with head office is desired then an additional module can be installed that would transfer the data through internet. In case both the units are online the data can also be transferred simultaneously to the head office computer. This facility would enable better monitoring on day-to-day basis without having to visit the farm daily.

Easy to Install: The software is easy to install and manage. The online help provides solution to any problem faced by the operator. Data syncing is also extremely easy and single-step.

Easy to learn: Herdman software program is easy to learn since it is menu driven. The data entry follows the natural data flow. Data entry can be done through multiple forms, basically through single activity entry form or individual animal folder.

Program can be custom-designed: At the time of installation the program can be custom-designed to individual customers' requirements. This makes the software versatile and flexible.

Multi-level Data Entry: The animal data can be entered through various levels. It could be external as described in option 1, 2 and 3 or internal. In internal bulk data entry

forms for AI, Milk, Calving, Pregnancy tests results have been provided. The software therefore is very easy to handle.

Data of AI Bulls can be maintained:
The program provides facility of maintaining pedigree data of bulls being used for AI or natural service. The EBV and other indices information of each bull can also be stored.

Lifetime Records of Animals Maintained in Easy Accessible Format:
Herdman enables maintaining of all the records of animals in the lifetime. All the events in the life of animals is depicted on the cattle registration format. Lifetime reports of animals can be generated easily.

The program can be custom-designed:
The program has been provided with facility of fixing the economic and management default values so that the program can installed as per the need of the dairy set up. Thus the program has flexibility of deployment in diverse dairy management set up.

Herdman Networking Solutions:

Herdman Modules: Herdman has been developed in modular form so that in different phases additional modules could be added: The modules are:
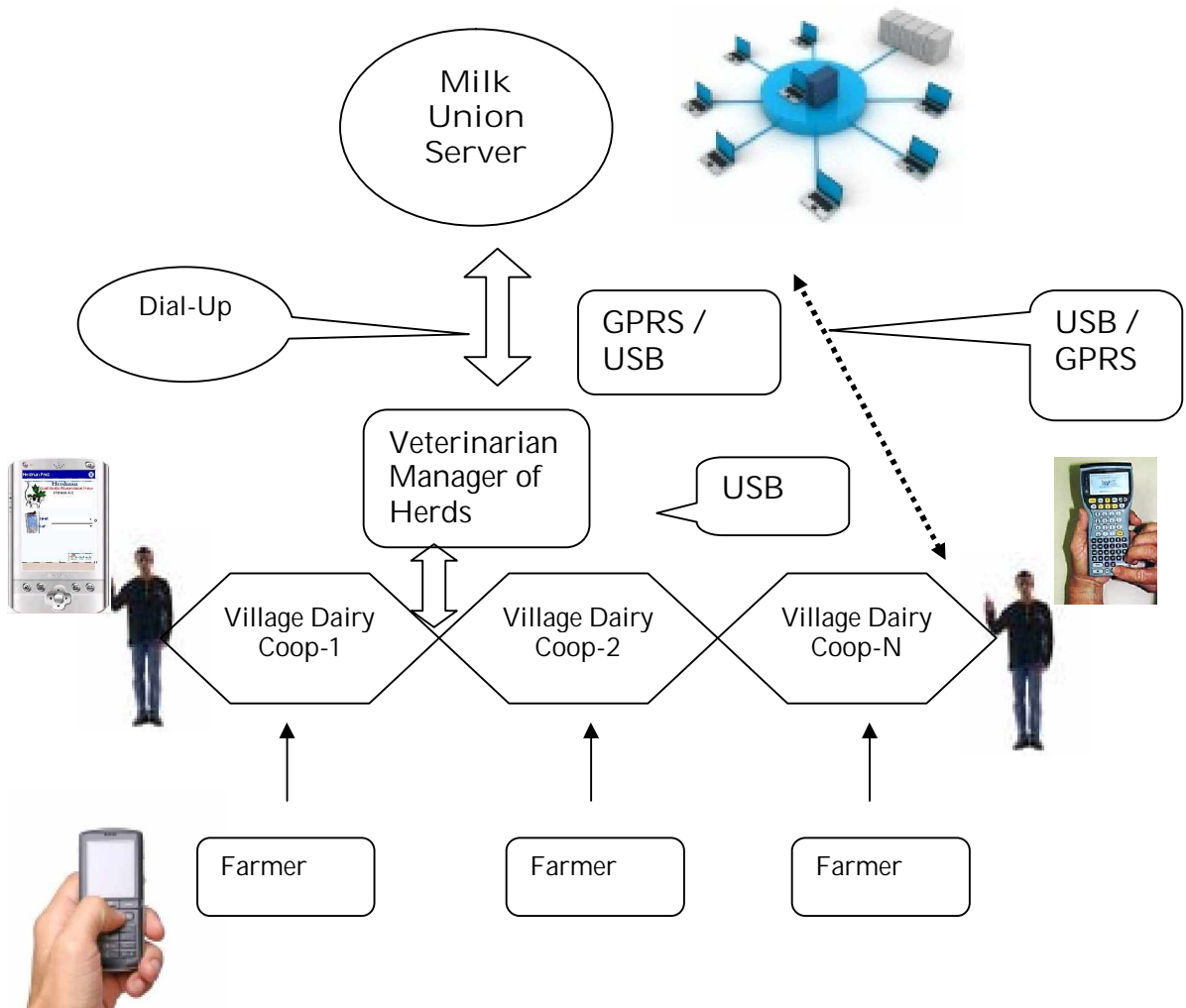
Server Module: Herdman-Server is meant to be deployed at the headquarters wherein data from all the village dairy cooperatives can be maintained / warehoused and mined. Herdman has several unique features:

It is developed in VB.NET and AQL-Server to enable greater force for data networking and problem-free warehousing of large amount of data.

The program has following features:

Server Data Sync Module: Herdman provides facility of auto-data sync in that the data from field (veterinarian desktop or the PDA) can be synced with the server. There is facility of data verification so that data corruption is avoided. From the desktop the data can be uploaded or downloaded with the help of dial up connection or the LAN / WAN connectivity. This makes animal data recording very convenient as data is entered in the field only once and then can be exported to server and other units.

Auto sms module: especially for farmers / veterinarians: There is facility for auto-generation of text messages (in regional language if desired) for daily action and alarm lists. This enables the farmer's access to animal information and management decisions.

Auto update version: Since the network is to be deployed in the stations spread throughout the country hence the program should have auto-update facility and the supplier should be able to bring about problem-solving and help using this facility through the server.

Auto backup and data security facility: Since valuable data will be stored hence the Research Station as well as Server Program should have auto-back up facility Platform based for custom-designing: The program should have sufficient flexibility for defining parameters based on local conditions. The parameters should also be editable, without affecting already-entered data.

Data Export to other software programs: Herdman provides facility to export data to other programs of the Infovet such as, AI-CEN, Semen-perfect and pashubazar. Using these softwares animal data grid would be possible   Interfacing with semen station program for auto-export of AI data

Herdman for Veterinarian (Desktop version):

The animal data management program deployed with the veterinarians has following facilities:

1. *Individual Animal Folder:* The program should maintain lifetime records of all the events of the animal in individual folders. The file storing structure should be such that data sorting based on cattle shed (lots) and the farm (herd) should be possible. The program should have facility of recording parent, progeny and specific animal details. The program should maintain life-time records of all the events related to breeding, production, health, movement of animal, etc. in easily reprievable format.

2. *Animal Data Entry:* The program should have provision of data entry from multi-levels, such as, individual animal, activity-based and auto-generated.

3. *Farm action and alert lists:* The program should generate daily action and alert lists to enable farm operations, such as animals due in heat, pregnancy check, drying-off, calving, milk recording, vaccinations, health checks, etc. The Station should be able to generate these lists based on sheds, herds.

4. ***Reports:*** The program should have capability of generating daily, monthly and periodic reports, administrative as well as technical. A list of screen shots of all the reports the program can generate must be included for verification. These reports should be as per the accepted formats. The reports should include the progeny, sire, AI reports, herd composition and monthly technical reports.

5. ***custom-design reports***: The program should have capability to generate custom design reports based on all possible variables associated with general animal and farm details, breeding, production and health. There should be facility of data sorting based on predefined cut-off levels for the parameters selected. A copy of the screen shots must be provided.

6. ***Data Analysis:*** The program should have capability of data analysis specially for calculation of herd indices based on international norms. The herd indices should be for breeding, production and health. There should also be facility for calculation of these indices for different lots, herds and parity / lactations. A copy of the herd performance reports generated by the program should be included.

7. ***Archive facility:*** The data of all the animals entered into the farm should be maintained, whereas those not currently in the farm should be transferred to the archive file.

2. **Core Module** including Master entries, Breeding, production, health lifetime records, reports and herd performance analysis

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- It is icon / menu driven hence even a moderately literate farmer can operate the software without any difficulty.
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- The records of culled, sold or died animals maintained in archive files that can be retrieved easily to analyze the data

What Data can be maintained? Following categories of data can be maintained:

- All estrus and AI events with details such as insemination / skip / natural service, sire details for all the parities and the AI technician details. Details of treatment given at the time of AI
- Based on heat synchronization protocols , the program predicts estrus due
- The results of the pregnancy tests / abortion, etc
- Drying off, udder examination report and treatment records at the time of drying-off
- Calving and relevant details.
- Milk records with composition reports
- All sickness events and treatment records
- Feeding details in respect of each animal
- Animal movement records, sold, culled, died, etc.
- Medicine, semen straw, feed and fodder inventory
- Metabolic profiling records

Multi-level Data Entry: The animal data can be entered through various levels. It could be external as described in option 1, 2 and 3 or internal. In internal bulk data entry forms for AI, Milk, Calving, Pregnancy tests results have been provided. The software therefore is very easy to handle.

The program can be custom-designed: The program has been provided with facility of fixing the economic and management default values so that the program can installed as per the need of the dairy set up. Thus the program has flexibility of deployment in diverse dairy management set up.

Core Animal Data Entry, Lifetime Production, Breeding and Health Records Management Module

The animals can be registered after creating herds and lots. This makes the animal data access easy and the animals can also be maintained in groups of interest.

The 'Master Parameter' menu p[provides creation of master entries which can be accessed each time an animal is registered. The animal, parent, other details, such as, previous and current parity breeding, production and health records can be entered without any hassle. The missing parity or lactation data does not hamper analysis of the data.

Custom designing of Herdman:
The software can be custom designed for use in the farm. The Farm manager can define the breeding, production, health targets and action parameters suitable and applicable to the farm.
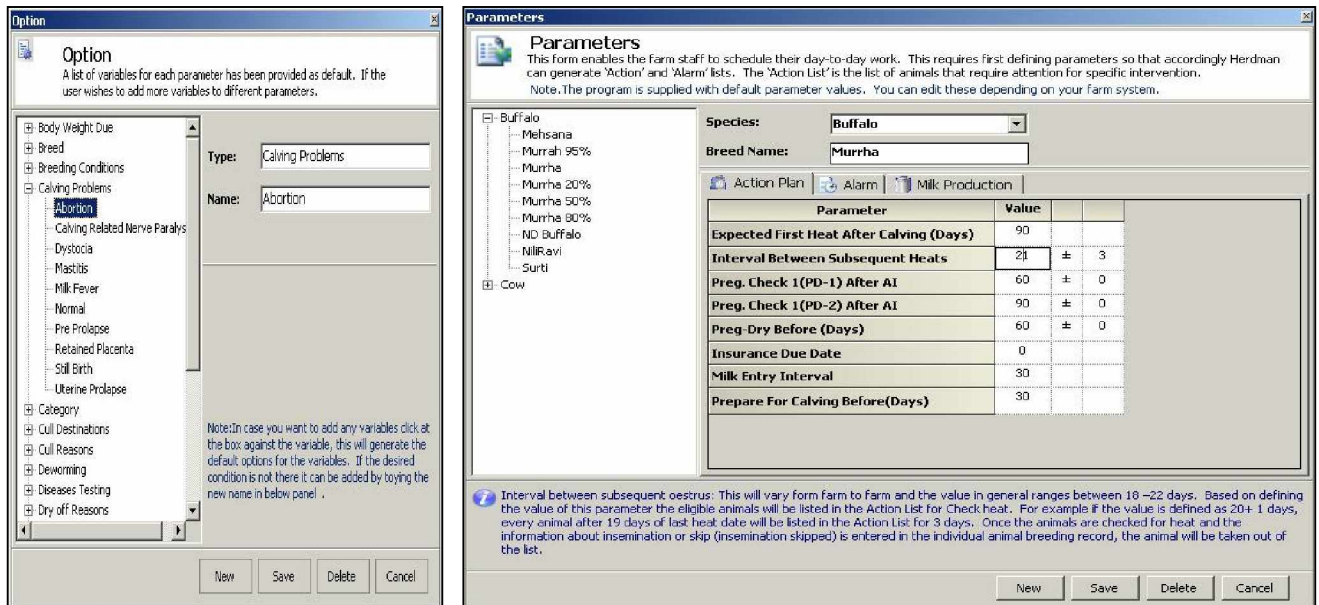
The parameters can be defined for different breeds of animals. Such a facility is available only in Herdman.

Data entry at multi-level: Multi-level data entry is possible. For example in case there are distinct staff carrying out a particular activity, the data entry is possible from a single form. The animal form can be accessed from many levels.

Action and Alarm Lists:
Once the animal database is created, daily action and alarm lists can be generated which enables the veterinarian to undertake the management tasks effectively.
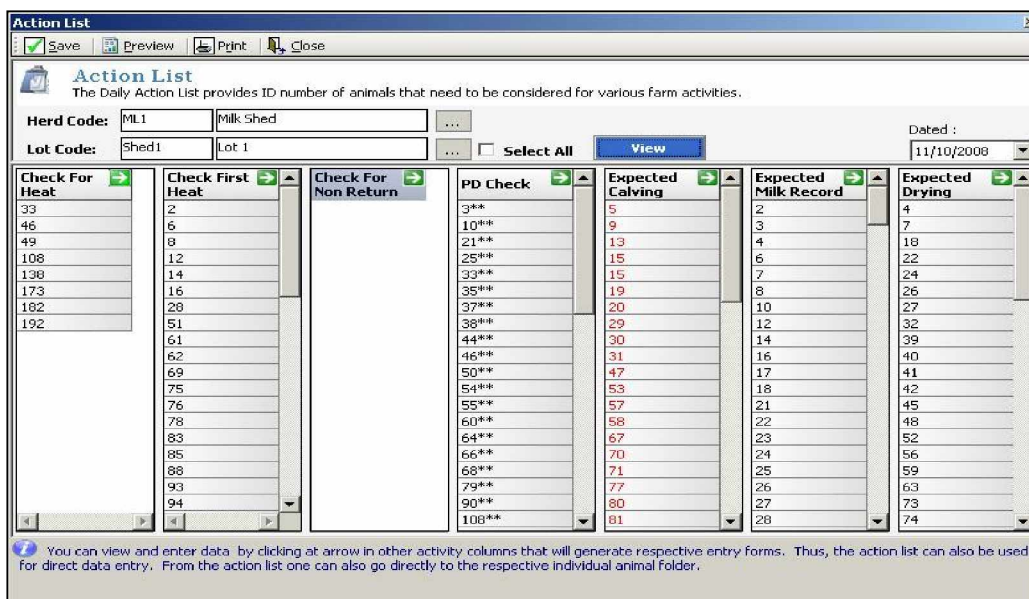
Registers: Dairy farm operations require maintenance of several registers that would provide information about the animal inventory of the farm and lifetime performance of the animals that entered the farm. Herdman facilitates maintenance of several registers that can provide overall information about the farm animals.

Adult List Report

Date :-03/11/2007

Herd Name:-Milking

Idno	Birth Date	Parity	Status	Sire No	Dam	Dam B.L.Y	Dam B.L.Y(305)	D.F.C	Last A.I
36	25/01/1997	7	Pregnant Dry	-	-	2569	2366	-	17/10/2006
91	10/03/1993	9	Milking	-	-	2505	2056	01/10/2007	05/02/2007
422	25/08/1998	7	Pregnant Milking	-	-	1823	1823		14/03/2007
428	25/07/1999	6	Milking	-	-	2181	2128	07/10/2007	14/07/2007
701	02/03/1996	8	Pregnant Milking	-	-	2372	2372		27/03/2007
703	03/04/1996	6	Dry	-	-	2510	2493	09/10/2007	17/05/2006
706	06/03/1996	7	Pregnant Dry	-	-	3090	2941	-	24/12/2006
713	15/07/1996	7	Pregnant Milking	-	-	3091	2451	-	12/07/2007
718	18/03/1996	7	Pregnant Dry	-	-	2026	2026	-	06/01/2007
732	20/01/1997	7	Milking	-	-	2800	2262	25/09/2007	18/07/2007
737	02/07/1996	7	Pregnant Dry	-	-	2226	2107	-	20/11/2006
814	18/04/1999	4	Pregnant Dry	-	-	1676	1676	-	01/10/2006
815	20/07/1999	4	Milking	-	-	1925	1925	-	27/09/2007

No of Animals : 13

Bullwise Progeny

Date :-03/11/2007

0699 I

Idno	Dam	Birth Date	Age	Ist Lactation Yield
204	603	14/Feb/2000	7Yr.9 Mth	2274

No of Animals : 1

AHF-10

Idno	Dam	Birth Date	Age	Ist Lactation Yield
253	631	30/Oct/2005	2Yr.1 Mth	-

No of Animals : 1

Apollo

Idno	Dam	Birth Date	Age	Ist Lactation Yield
755	514	28/Mar/2004	3Yr.8 Mth	-
436BF	436	09/Aug/2004	3Yr.3 Mth	-
7BF	7	08/Aug/2004	3Yr.3 Mth	-
766	7	08/Aug/2004	3Yr.3 Mth	-
751	65	24/Apr/2004	3Yr.7 Mth	-
746	120	16/Dec/2003	3Yr.11 Mth	-
745	81	15/Feb/2004	3Yr.9 Mth	1095
744	93	26/Nov/2003	4Yrs	-
742	141	26/Oct/2004	3Yr.1 Mth	-
741	163	19/Oct/2004	3Yr.1 Mth	-
770	436	09/Aug/2004	3Yr.3 Mth	-

No of Animals : 11

Damwise Daughter Register

Date :-03/11/2007

102

Idno	Sire	Birth Date	Age	Ist Lactation Yield
193	SUNDER	01/May/1999	8Yr.6 Mth	1214.21

No of Animals : 1

108

Idno	Sire	Birth Date	Age	Ist Lactation Yield
148	JUPITER	07/Mar/2001	6Yr.8 Mth	1162

No of Animals : 1

110

Reports: All types of 'Reports' can be generated, which include administrative as well as technical. There is also facility for custom-designing of the reports as per your need.

'Herdman' is capable of generating several reports that are either for the current date or for the desired period. Reports such as, administrative, milk production, breeding, due for calving, semen utilization, heifer, calves, etc., can be generated with a click. Every report also provides a summary report of the herd or lot for various attributes. You can comply the reports to your administrator with just a click of mouse.

A number of technical reports can also be generated. For example, you can generate a report for animals that are to be pregnancy examined.

Details of reproductive problems during the period Jan-2006 to Nov-2007

Date :-03/11/2007

June-2006

Idno	Calving Date	Reproductive Problem	Abort Days	Abortion Type
783	10/06/2006	PREG.	276	Late Abortion

Count : 1

July-2006

Idno	Calving Date	Reproductive Problem	Abort Days	Abortion Type
319	28/07/2006	PREG.	237	Late Abortion

Count : 1

Monthly Expected For Calving

Date :-03/11/2007

May-2008

Idno	Heat Date	Expected Date	Days Due	Species
768	30/06/2007	05/05/2008	184	Buffalo
429	12/07/2007	17/05/2008	196	Buffalo
422	22/07/2007	27/05/2008	206	Buffalo

Count : 3

June-2008

Idno	Heat Date	Expected Date	Days Due	Species
163	28/07/2007	02/06/2008	212	Buffalo
333	21/08/2007	26/06/2008	236	Buffalo

Count : 2

Purchase of Animal during the Period Jan-2006 to Nov-2007

Date :-03/11/2007

February-2006

Idno	Purchase Date	Cost	Source
799	07/02/2006	0.0000	SHRI. MAHADEO JOSHI, PUNE

Count : 1

October-2006

| Idno	Purchase Date	Cost	Source
814	12/10/2006	0.0000	BALUBHAI
815	12/10/2006	0.0000	BALUBHAI
816	12/10/2006	0.0000	BALUBHAI

Count : 3

ANALYSIS:Herdman is a unique software application in that it not only enables data recording and storage but also provide tools to analyze data to understand the herd performance in the context of health and productivity. In fact it produces a number of analytical reports that will allow the Farm Manager to assess if the management intervention introduced have resulted in positive or negative effects. In this chapter only the details of generating the report is provided. The interpretation of the results is out of scope of this manual and would be provided separately in the technical bulleting. The interpretation information can also be obtained by referring any standard textbook on 'Herd Health and Productivity Management' or 'Herd Medicine' or 'Preventive Medicine'.
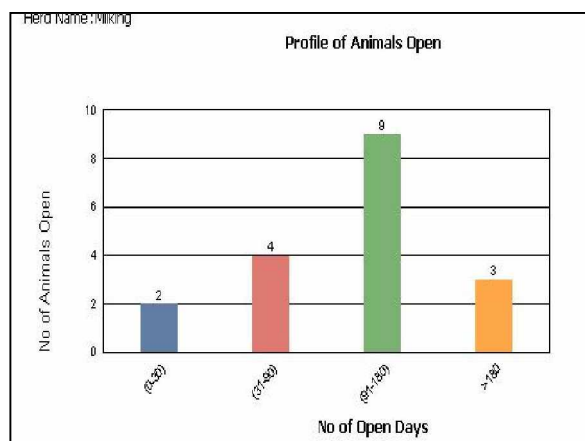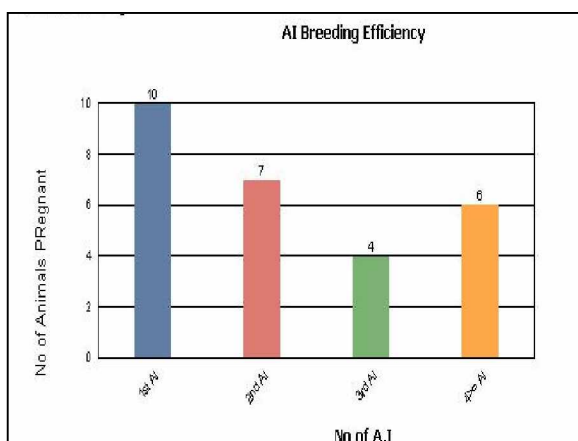
Semen Straw Inventory Management: Herdman' also automatically maintains the semen straw or bull records. Very time a straw from a bull is used, the records for straw and the bulls are updated and once the animal is confirmed pregnant, the pregnancy is added in the record of the bull. Herdman also produces the bull performance report for the farm. Consolidation of such report from all the farms / village enables calculation of bull indices.

Thus, the Farm Manager can analyze fertility data and take decision on use of different bulls in the farm.
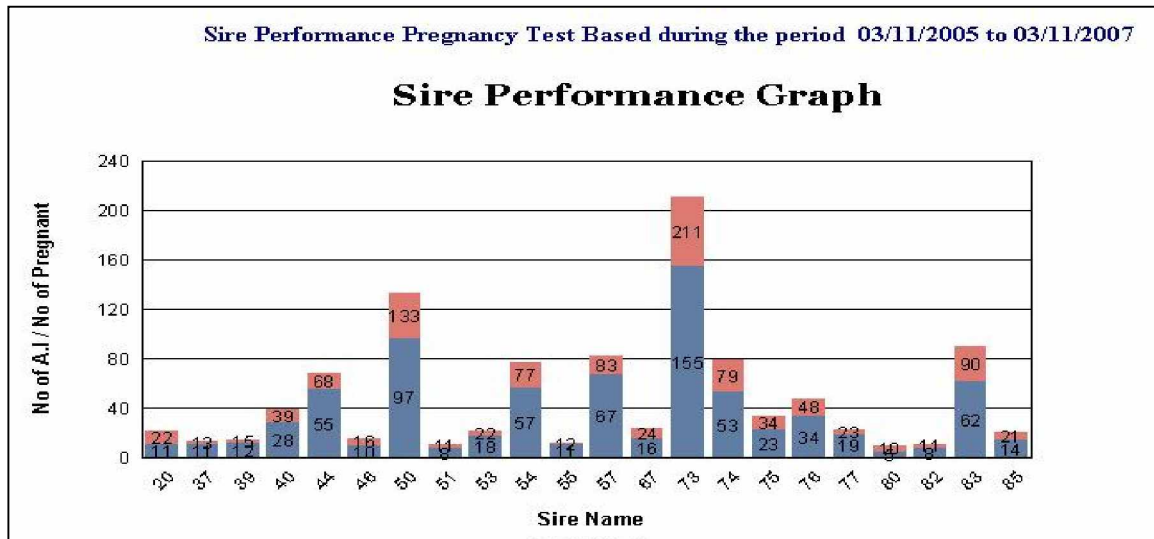
Lactation Curve: the program can generate lactation curve from the milk production data. The curve also depicts other events related to lactation curve such as heat, pregnancy, disease treatment, etc.
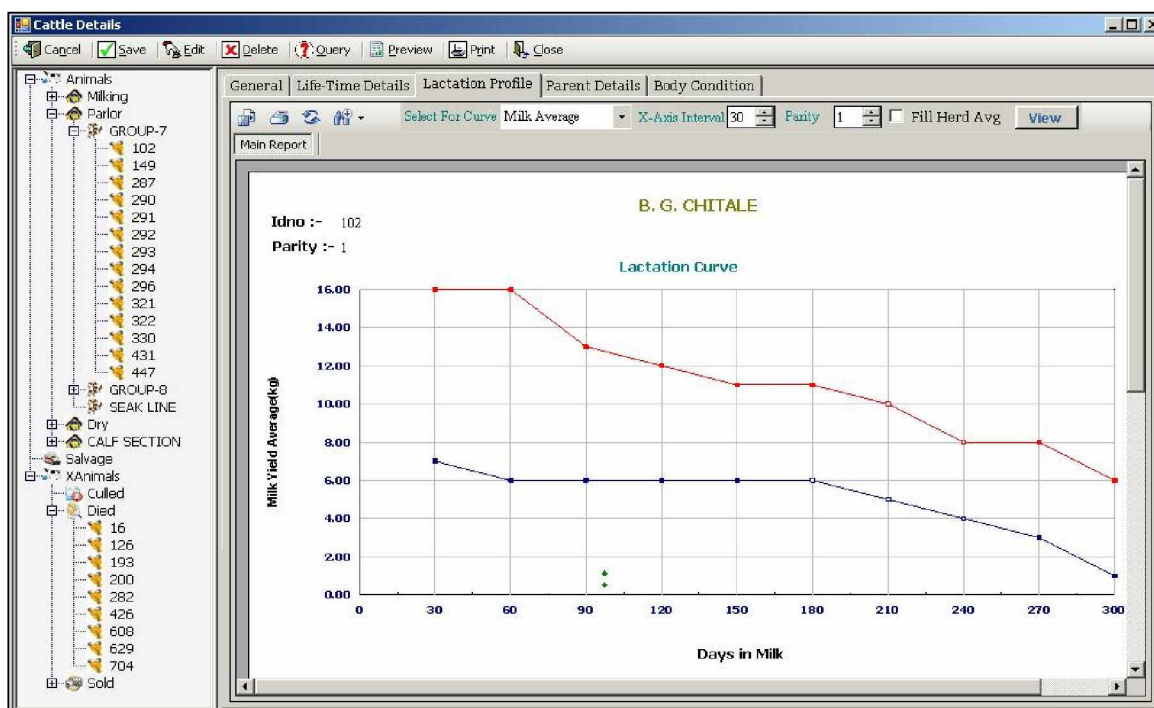
Custom-Designed Report: provides facility for custom-designing of reports. From amongst more than 180 parameters the veterinarian or manager can select any number of parameters and generate report of his choice. There is also facility to sort data for various

parameters.   The unique feature of Herdman is sorting of animals' performance based on its outcome such as economic efficiency of the animal. This enables the manager take decisions based on economic performance of the animal. This also allows selection of animals for breeding purposes.


Reliable Dairy Farm Ltd.
Report milk yield

Date :-11/10/2008

Status :- Milking

Id No.	Breeding Status	Open Period(Days)	Days in Milk	Peak Yield	Avg. Milk Yield
2	Open Unbred	406	406	9	7.67
3	Open Bred	339	339	9.4	8.36
6	Open Unbred	322	322	11.1	10.45
8	Open Unbred	305	305	13.5	11.92
10	Open Bred	368	368	11.2	9.65
12	Open Unbred	322	322	9.9	9.53
14	Open Unbred	299	299	9.8	6.48
16	Open Unbred	289	289	13.3	9.72
17	Open Unbred	262	506	10.7	7.46
21	Open Bred	515	515	12	7.51
23	Open Bred	515	515	12.5	9.68
25	Open Bred	447	447	3.7	2.36

Vaccination and Deworming Records:
The records of all vaccination and deworming can be entered as village herds and maintained. The data of production, fertility can be correlated with these parameters.
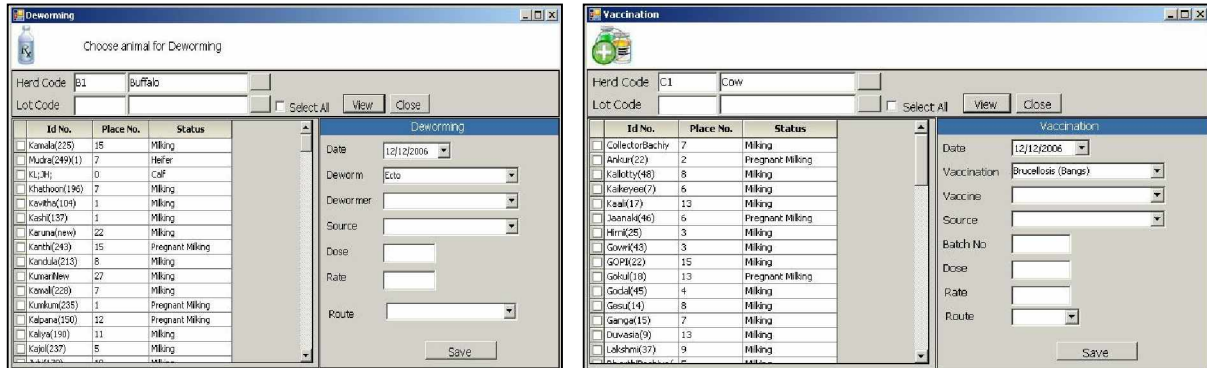
De-worming and Vaccination entry forms for the village cooperative herds

Sick Animal Case papers and treatment records:
'Herdman' maintains lifetime records of all the treatment carried out in individual animal. The database for different symptoms, systems, and the diseases are in-built so the user has to just select from the combo box. The program also indicates the dose rates for different drugs and the milk withdrawal alarm is also given. The old treatment records can be retrieved with a click. This also enables calculation of true disease rates in the farm. When antibiotics are used, the software also warns the farmers about the residues within the withdrawal period. Many software currently available do not have this facility.
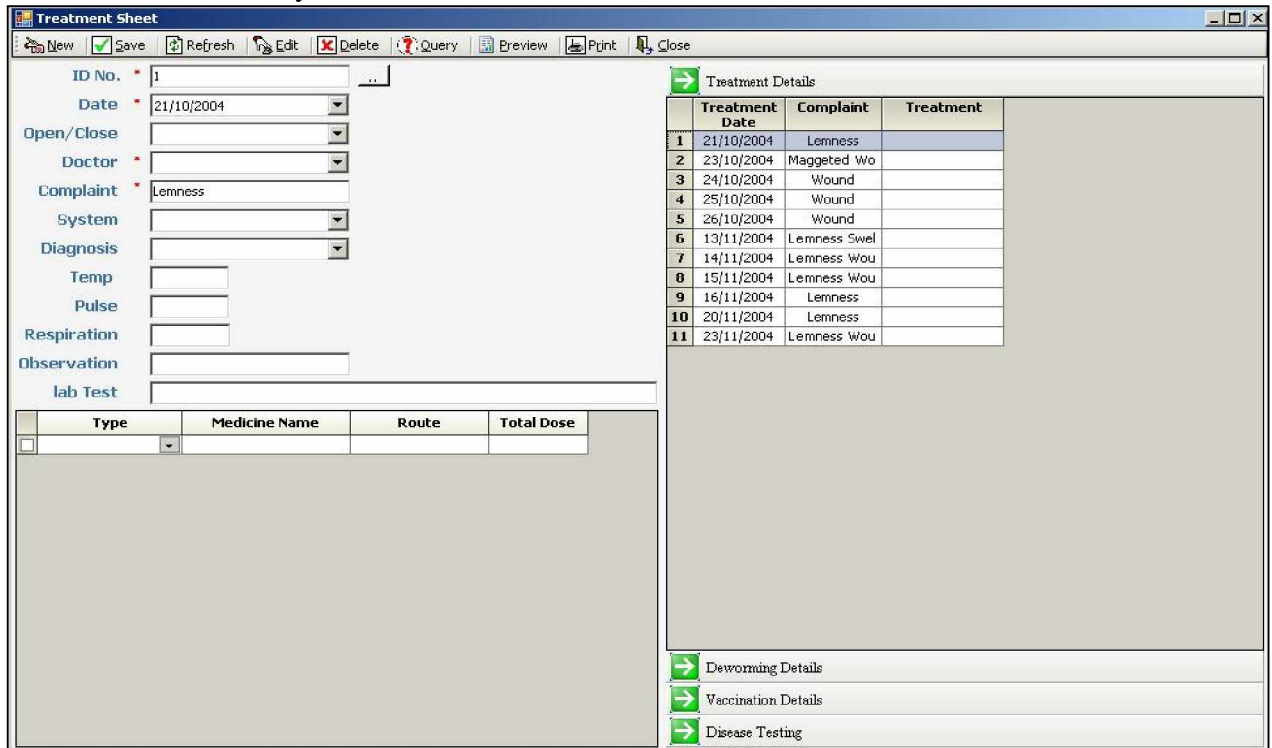
Herd performance indices: The ultimate objective of the animal data management is to analyze the data to calculate production, breeding and herd indices to indicate how the herd is performing. Herdman calculates production and reproduction-based herd indices   (as mean $\pm$ *Standard deviation) for* each lot or herd. This is the unique feature of this software. Herd indices, such as, average milk yield per lactation day, average yield per lactating animal, peak yield, days to peak   yield, average lactation length, etc., can be calculated.

Reproduction

	Parity(No of Observation) Id No.	Avg. age at Calving (Years)	Avg. Service Period (Days)	Avg. Dry Period (Days)	Avg. Calving Interval (Days)	Avg. Gestation (Days)	Avg. Calving to Conception	Avg. No of A.I/Conception
+	1(20)	2.95±0.25	57.75±3.52	-	-	294.65±5.52	74.6±4.21	1.35±0.18
+	2(14)	3.93±0.36	62.38±5.18	55.54±17.28	462.79±41.98	287.79±6.38	179.5±19.46	3.36±0.68
+	3(17)	5.12±0.19	56±4.66	67.76±12.92	428.82±21.8	295.41±4.17	121±22.57	2.59±0.31
+	4(6)	7±0.63	52.5±9.7	137.67±72.55	457±101.08	301.5±6.57	106±8.08	2.5±0.76
+	5(10)	8.1±0.23	60.88±4.15	106.5±5.55	399.4±10.25	308.3±1.54	95.67±15.22	2.3±0.26
+	6(16)	9.19±0.52	49.8±1.41	94.47±14.17	411.25±13.84	300.75±4.08	85.29±10.95	2.75±0.57
+	7(12)	10.58±0.73	53.33±4.22	102.92±22.47	399.58±30.46	296.33±5.66	62.5±1.84	2.67±0.82
+	8(4)	12.25±1.11	55.5±7.42	71.75±24.5	428.25±39.81	316±7.6	-	2.75±1.18
+	9(2)	13±2	50±5	129.5±7.5	436.5±64.5	299.5±0.5	65	4.5±2.5
	Avg±StdDev(101)	6.24±0.31	55.81±1.51	85.44±7.26	426.09±11.48	296.83±1.97	97.48±5.42	2.46±0.19
	Avg±StdErr(101)	6.24±3.11	55.81±15.18	85.44±72.99	426.09±115.41	296.83±19.78	97.48±54.47	2.46±1.94

Production

	Lactation(No of Observation) Id No.	Avg. Lactation Length	Avg. Lactation Yield(kgs)	305-days Milk Yield(kgs)	100-days Milk Yield (kgs)	Avg. Peak Yield(kgs)	Avg. Peak (Days)	Avg. Yield (kgs)
+	1(13)	341.38±19.2	2119.63±239.93	2011.93±233.92	870.18±110.48	11±1.33	50.38±6.99	6.34±0.75
+	2(15)	388.87±45.88	1859.28±171.74	1770.09±158.3	798.35±70.47	10.79±0.86	38±8.57	5.15±0.51
+	3(12)	326.08±27.24	2038.24±175.68	1946.45±131.91	970.01±39.88	15.84±3.89	33.83±6.49	6.34±0.39
+	4(12)	360.42±96.95	1171.17±149.69	1169.06±148.85	614.48±54.17	9.32±0.61	29.58±5.91	4.01±0.46
+	5(17)	318.41±21.43	1829.88±184.96	1719.6±145.48	822.26±48.64	13.46±1.76	54.47±12.58	5.79±0.31
+	6(25)	306.84±22.01	1781.88±160.37	1669.1±139.39	832.22±56.54	62.28±49.54	50.67±10.29	5.59±0.3
+	7(2)	360±103	2355.93±997.62	1998.72±640.43	1015	686.35±671.95	156±94	6.26±0.98
+	8(1)	235	1207.1±0	1207.1±0	689.3±0	10.8±0	24	5.14±0
	Avg±StdDev(97)	339.86±16.09	1814.12±75.83	1721.9±66.71	823.31±27.25	25.64±13.07	44.24±4.02	5.55±0.19
	Avg±StdErr(97)	339.86±158.44	1814.12±746.8	1721.9±656.98	823.31±268.43	25.64±128.76	44.24±39.61	5.55±1.86

The reproduction-related indices that can be calculated are: mean age for first heat in heifers, mean age of calving in heifers, mean days after calving to first heat, mean conception rate, mean A.I. per conception, etc.

The village / block or district level data can also be analyzed for other economic parameters.

The analysis as indices facilitate diagnosis of problems in the herds so that feeding or management or therapeutic intervention decisions can be taken.

Apart from conventional performance indices, the data can also be analyzed for economic indices which are important to plan for cost reduction to help farmers maximize profits.

Well Managed Dairy Farm
Herd Performance Indices from 01-01-2007 To 30-06-2007

Reproduction Indices (Adults)

Avg. Duration Of First Heat After Calving	54±2.11
Avg. Inter Calving Period	431±1054
Avg. Calving to Conception Interval	115±13.44
Avg. Services Interval	26±1.49
Avg. No Services Per Conception Rate (%)	2.69(37.14%)
% Animal Negative on PD	25%
Dystocia %	100%
I.O.P (% Calving)	100%
Abortion %	100%

Animal with Open Period(% Open Animals)

Unbred		Bred	
0-70	>70	1-120	>120
0(0)	9(100)	0(0)	41(100)

Animal Pregnant (% Pregnant Animals)

0-70	1-120	>120
22(51.16)	15(34.88)	6(13.95)

Conception Rate(%)

1	2	3	>=4	Overall	Conception
10(38.48)	6(23.08)	4(15.38)	6(23.08)	26	37.14

Production Indices (Adults)

Avg. Milk Yield (kg)	1186±117.97
Avg. Milk Yield (kg)-305 Days	1096±9874
Avg. Milk Yield (kg)-100 Days	611±3507
Avg. Lactation Days	448±34.1
Avg. Peak Milk Yield	10±0.32
Avg. Peak Days	59±9.71
Avg. Milk Yield Per Day	6±0.31
Avg. Dry Period	117±883

Sire wise conception rate in adult

	1	2	3	4	>4	Overall	Conception Rate

Inseminator wise conception rate in adult

	1	2	3	4	>4	Overall	Conception Rate
MR PV KUMBHAR	6/7	5/6	4/4	1/1	1/5	17/23	73.91%

Economic Parameter-based herd performance indices

International Compliance: Herdman has been developed keeping in mind international requirements prescribed by International Committee on Animal Records, Italy.
For further details please contact:

Manager Development
Infovet
infovet_india@yahoo.com
09819087985