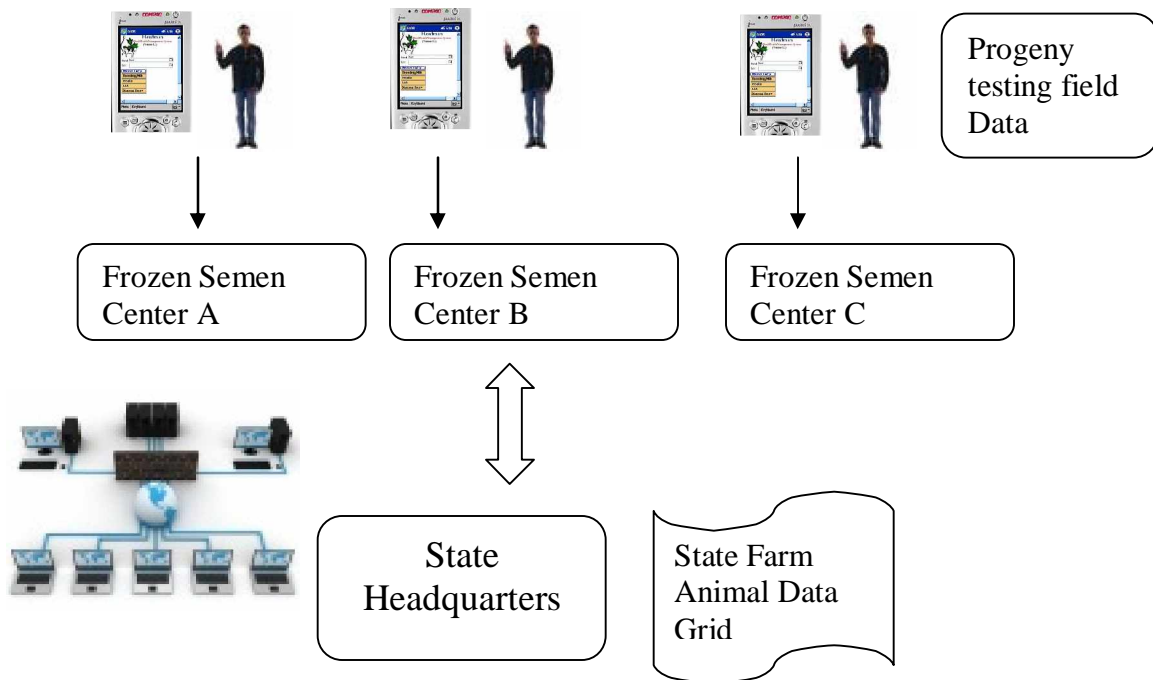


# Semen<sup>perfect</sup>: Frozen Semen Center Data Networking Software Application:

The software has four modules: (a) Bull health and productivity management module; (b) Semen Straw Inventory module, (c) A.I / PD / Calving and daughter data management module and (d) Server module.

The schematic representation of the information flow and data management is given below.



The salient details of the software are as under:

## Core Modules:

- Bull Health Management (Cow as well as Buffalo)
- Semen collection and Straw storage
- Semen and liquid nitrogen sale / distribution management

## Add-on Modules:

- A.I. data management and analysis
- Inventory and feed scheduling
- Server module for data warehousing with sync facilities

## Bull Management:

This is the basic module for bull management. Life-time data of all the bulls in the Center can be stored and analyzed. This module facilitate storing of following bull information:

- Species, breed, Genetic level, physical attributes, etc.
- Parent record, genetic record
- Life-time semen production record
- Health check up and treatment records

## Semen Collection and straw storage

This is also a basic module that facilitates storing of data of each bull on all the semen collections, yields, number of straws prepared. The entry format is extremely user-friendly and based on the defined parameters, the attributes such as sperm count, volume of dilutor needed to attain a defined sperm count per ml and the number of straws to be prepared are calculated instantly. So there are no hassles. Semen attributes of each collection is stored separately that can be accessed with a mouse click.

'Semen<sup>Perfect</sup>', also assists in creating storage-related information. With a click on the container model given in the software, the information, such as, batch numbers of individual bulls in different levels of goblets can be obtained. Thus there is no need to search for straws in the containers saving it from shock and saving the liquid nitrogen.

### Semen and ancillary sale management:

This basic module facilitates distribution of semen to other centers and clients. If the sale price of each bull for each category of client is predefined, 'Semen<sup>Perfect</sup>', prepares vouchers / bills and other documents. The inventory for each batch of semen from individual animals is updated with each sale. There is also provision of enabling or disabling particular bull's semen for use in a specific center. Through this module sale of other accessories, such as, liquid nitrogen, disposable sheaths, disinfectants, etc., can also be maintained.

S.No	Date	Bull No	Name	Buffalo Straw	Cow Straw	Liquid Nitrogen	Amount
1	01/01/2003	F2F-1562	Yash D D	15	2	123	28872
2	01/01/2003	F2F-1562	Yash P P	15	2	123	28872
3	02/01/2003	F2F-1562	Mase D S	300	-	-	2100
4	02/01/2003	F2F-1562	Paul S G	30	-	-	210
5	03/01/2003	F2F-1562	Mate B M	10	3	075	165
6	03/01/2003	F2F-1562	Chama C S	15	-	1	225
7	03/01/2003	F2F-1562	Shinde A P	15	-	1.5	165
8	04/01/2003	F2F-1562	Pawar J S	30	5	1	480
9	04/01/2003	F2F-1574	Anam M M	10	4	075	170
10	04/01/2003	F2F-1574	Padar M	15	5	1.5	292.5
11	04/01/2003	F2F-1574	Mase N S	30	2	5.5	550
12	04/01/2003	F2F-1574	Chougale D F	5	3	1	118
13	04/01/2003	F2F-1574	Bhansole S R	10	-	0.75	110
14	05/01/2003	F2F-1574	Chougale P A	15	-	1	225
15	05/01/2003	F2F-1574	Shinde R B	30	2	1	570

If the sale price of each bull for each category of client is predefined, 'Semen<sup>Perfect</sup>', prepares vouchers / bills and other documents. The inventory for each batch of semen from individual animals is updated with each sale. There is also provision of enabling or disabling particular bull's semen for use in a specific center. Through this module sale of other accessories, such as, liquid nitrogen, disposable sheaths, disinfectants, etc., can also be maintained.

### A.I. Data Management:

Depending upon the organizational set up, the A.I. data management can be structured.

Sr	Place (Sub Center)	B. Code	Name of Beneficiary	Animal Id	Breed	A.I. Date	Insinuator	Bull
49	593	0078	BHANUDAS VSURYAWANSHI	1	HF	25/12/2002	RYAWANSHI RA	Hibiscus Jr
50	NP588	9	VINOD BALSO CHOUGULE	1	JERSEY	25/12/2002	RYAWANSHI RA	Hibiscus Jr
51	593	0099	ASHOK VITHOBA PATIL	1	ND BUFFALOW	25/12/2002	RYAWANSHI RA	Harish
52	593	0195	PRASHANT SHIVAJIRAO PATIL	3	MEHSANA	25/12/2002	RYAWANSHI RA	Jacky
53	557	0283	MBHAI GANAPATI SURYAWANSHI	1	ND BUFFALOW	25/12/2002	RYAWANSHI RA	Bhuma
54	557	0052	'ANJAY HAMEIRAO SURYAWANSHI	1	ND BUFFALOW	26/12/2002	RYAWANSHI RA	Harish
55	557	0052	'ANJAY HAMEIRAO SURYAWANSHI	2	ND BUFFALOW	26/12/2002	RYAWANSHI RA	Bhuma
56	557	0047	'AJIRAO PANDU SURYAWANSHI	1	HF	26/12/2002	RYAWANSHI RA	Bhuma
57	557	0045	'DIKRAO RAMES SURYAWANSHI	2	ND BUFFALOW	26/12/2002	RYAWANSHI RA	Jacky
58	557	0305	ANIL BAPUSO PATIL	1	MURRHA	27/12/2002	RYAWANSHI RA	Harish
59	557	0013	'PATANGRAO HARI SURYAWANSHI	1	MEHSANA	27/12/2002	RYAWANSHI RA	Bhuma
60	557	0011	'RASHANT SHAM SURYAWANSHI	2	ND BUFFALOW	27/12/2002	RYAWANSHI RA	Harish
61	593	0107.1	'ANMANT SAHDEV SURYAWANSHI	1	ND BUFF H	28/12/2002	RYAWANSHI RA	Sunder
62	593	0122	PANDURANG BIRA GORE	1	ND BUFFALOW	30/12/2002	RYAWANSHI RA	Kapil
63	593	0023	SANJAY MOHAN PATIL	1	ND BUFFALOW	30/12/2002	RYAWANSHI RA	Harish
64	557	0082	SANDIP SHANKAR SURYAWANSHI	1	MEHSANA	30/12/2002	RYAWANSHI RA	Jacky

For example, if the regional center is only responsible for semen production and bulk sale to the district centers, the software can be custom-installed. The regional center thus, can have information flow about the straw utilization in a consolidated

format with block as the reporting level.

The information on use of semen in individual animals from the district A.I. Centers can be downloaded. We have distinct software (**AI-Man**) for the centers that are involved in distribution of straws and collection and collating of the A.I. end-use data. The data generated as reports from this software is compatible and integrable with 'Semen<sup>Perfect</sup>'.

With the help of this module the Center can maintain data on end use of each straw, i.e., name of the owner, ID number of animal, date of AI, etc. This also generates action list for PD check and calving report. Thus, the end-use information of each straw of the bull can be maintained. This enables generating reports of use of various bull straws in different centers, A.I. workers along with performance indices of bulls for various centers, technicians, etc.

**Inventory Management:** Semen<sup>Perfect</sup> provides for maintenance of inventory in respect

Stock and Sale Position From 01/01/2003 To 17/01/2003											
From :-		01/01/2003		To :-		17/01/2003		View			
Particulars	Opening	Received	Sale						Total	Discard	Closing
	Balance	-	Franchies		Others		Staff		-	-	Balance
	-	-	Quantity	Amount	Quantity	Amount	Quantity	Amount	-	-	-
Buffalow Straw	90	3965	1740	15600	2000	14000	635	6350	4375	6	1674
Cow Straw	142	600	210	3150	-	-	90	1350	300	6	436
Liquid Nitrogen	49	1000	121	2988	-	-	632	14541	753	75	221
Gun	6	-	-	-	-	-	-	-	-	-	6
Sheet Pack	62	-	18	900	-	-	23	1150	41	-	21
<b>Total</b>	-	-	-	22638	-	14000	-	23391	-	-	-

Cash :-	22638
Credit :-	21700
Non Return Amount :-	15691
<b>Total :-</b>	<b>60029</b>

of liquid nitrogen, feed, feed ingredient, forages, medicines, accessories, etc. In short, it also serves as data recorder for all the fixed assets and recurring items. Data regarding purchase of these items, disposal details

and balance stock can be maintained.

Semen<sup>Perfect</sup> also facilitates preparation of commercial feed from different ingredients, as per your own feeding norms. Based on input parameters in respect of allowances for each category of animal, Semen Perfect prepares daily feeding schedule. Thus, this software offers total solution to all your requirements.

**Progeny Testing:** This is also an optional module. Based on your requirements, you can select the required number of daughters of each bull from the main database of AI records. An additional data file of these daughters is created in progeny testing folder. Requisite information, such as, milk records, breeding records, disease records of different parities can be entered. Semen Perfect also facilitates calculations of different bull performance indices and assign the estimated values to these indices. Semen Perfect is therefore an important step forward in applying scientific breeding programs in dairy industry.

**IMPORTANT FEATURES:**

Daily Action and Alarm List: Based on the defined parameters ‘Semen<sup>Perfect</sup>’, prepares daily action and alarm list that depicts the ID / name of the bull that are due for a particular action or that has some problem. This enables proper scheduling of the day’s work as well as investigations into the problems. Each list includes:

ACTION LIST					
Bulls Due For collection	Check for Post Thaw Motility	Deworming	Vaccination	Disease Testing	Under Treatment
Apollo	Jashot Jr-1/16/02/2	Jupiter	Jupiter-FMD	Jupiter-Brucella	
Harish	Jashot Jr-1/23/02/2	Zorian Jr	Jupiter-H.S	Jupiter-T.B	
	Jashot Jr-2/23/02/2	Jashot Jr	Jupiter-B.Q	Jupiter-J.D	
	Jashot Jr-1/26/02/2	Hibiscus Jr	Jupiter-THALAIN	Jupiter-I.B.R.	
	Jashot Jr-2/26/02/2	Jr Zoraver	Jupiter-I.B.R.	Jupiter-Vibrosis	
	Jashot Jr-1/02/03/2	Jr Jashot_01	Zorian Jr-FMD	Zorian Jr-Vibrosis	
	Jashot Jr-2/02/03/2	Tyson	Zorian Jr-H.S	Jashot Jr-Brucella	
	Jashot Jr-1/05/03/2	vinod	Zorian Jr-B.Q	Jashot Jr-T.B	
	Jashot Jr-2/05/03/2	Surya	Zorian Jr-THALA	Jashot Jr-J.D	
	Jashot Jr-1/09/03/2	Bahadhr	Zorian Jr-I.B.R.	Jashot Jr-I.B.R.	

### Action List:

- Bulls for semen collection
- Bulls for Health Check
- Post-freeze testing
- Bulls for vaccination
- Bulls for deworming

### Alarm List:

- Bulls with low motility
- Bulls with low sperm count
- Bulls with abnormal sperm
- Bulls with low freezibility
- Bulls with low fertility

### REPORTS:

'Semen<sup>Perfect</sup>' generates a number of administrative as well as technical reports for any duration that can be defined. Following reports are generated. The format of the reports can also be changed to suit to a particular user. Following types of reports can be generated:

### Bull History:

Lifetime history of the bull can be generated with a click of mouse. This includes, all

**M/s B.G Chitale**  
 Bhiloadi, Sion, Tal, Taluk (Dist. Solapur)  
 Maharashtra, 413302 (India)  
 Phone: (0259)3311361 Fax: (0259)33111

**Animal History Sheet**

Bull Name: Jr Jashot\_01

**General Details**

Sex >	Bull	Body Score >	
Breed >	Danish Jersey	Legs Score >	
Owner Name >	M/S B G CHITALE DAIRY PVT	Udder Score >	
Species >	Cow		
Date of Birth >	08/02/2000	Age >	03 Yrs 08 Months

**2 Yrs**

Name >	Qank	Name >	614	
Breed >	JERSEY	Breed >	JERSEY	
Date of Birth >	28/11/1997	Date of Birth >	12/02/1998	
Site Index >	113	Site Index >	1990 Score	
SBY (Kg)	Milk 2500	Fat 68	Protein 101	Real -
Type Test	Body 101	Legs 102	Udder 101	Total -
SBY				
Production	Milk 3636	Fat 398	Protein 227	Protein 678
1st Test	3227	377	239	625
2nd Test				417

available parent records, purchase details, health records, disease testing records, semen records, semen usage records, bull performance record and progeny records. The reports can be printed as well as saved in a specific

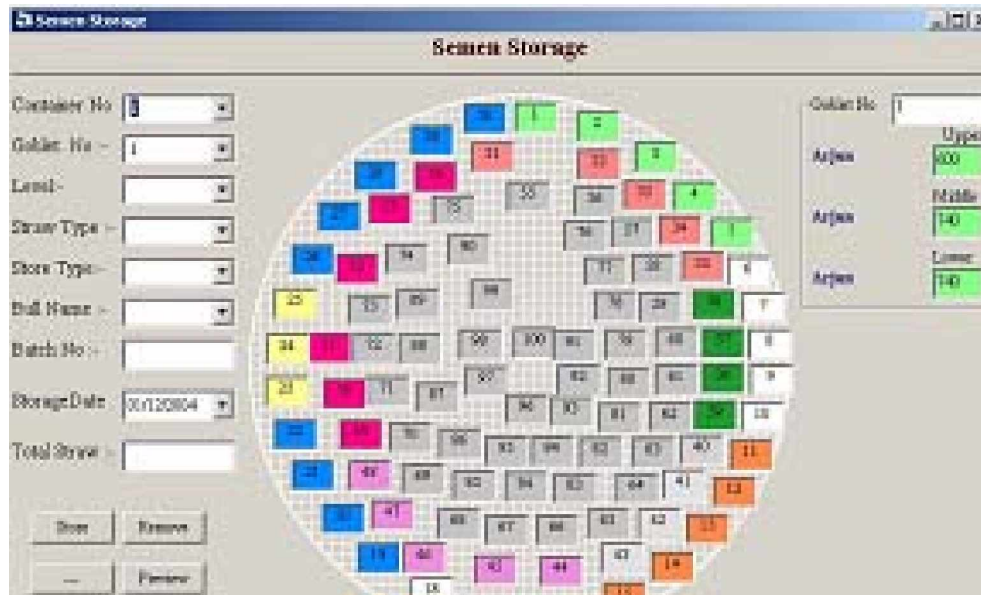
folder. In case a bull is being transferred from the center, it can be done along with all these records.

**Semen production:**

SEMEN PRODUCTION DURING THE YEAR 2003													
Select Year :- 2003 <input type="button" value="View"/> <input type="radio"/> All Bulls <input checked="" type="radio"/> Semen Collection													
Bull Name	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEP	OCT	NOV	DEC	TOTAL
Arjun	-	-	477	916	-	-	-	-	-	-	-	-	1393
Gopal	1088	800	1104	1112	988	1225	1103	104	-	-	-	-	7524
Harish	608	748	839	1308	884	780	777	287	-	-	-	-	6231
Hibiscus Jr	964	-	2264	2870	2504	2230	2484	1258	-	-	-	-	14574
Jacky	116	48	376	-	76	-	-	-	-	-	-	-	616
Jashot Jr	-	792	2736	-	-	-	-	-	-	-	-	-	3528
Jr Jashot_01	1180	808	760	3152	2688	2876	3148	1584	-	-	-	-	16196
Jr Zoraver	1768	1712	-	2568	2712	3026	2723	1860	-	-	-	-	16369
Kapil	-	-	308	-	-	-	-	-	-	-	-	-	308
Rahul	105	-	-	-	-	-	-	-	-	-	-	-	105
Rahul-1	565	1121	456	1016	64	612	571	108	-	-	-	-	4513
Raja	-	-	132	400	436	640	482	96	-	-	-	-	2186
Robin	-	-	-	-	524	336	403	298	-	-	-	-	1561
Tyson	236	480	496	848	716	592	796	412	-	-	-	-	4576
Total	6630	6509	9948	14190	11592	12317	12487	6007	-	-	-	-	79680

This report depicts the semen production of individual bull during the specified period, in terms of ejaculate volume, number of straws, etc.

**Semen supply report:** This report depicts the sale of semen in a specified period to a particular or all the clients. All the relevant details are included.



**Semen Storage:** The software enables can-wise and goblet-wise details of the semen straw stored in the Center. Thus locating a specific

bull and batch semen straw is easy.

The storage inventory is automatically updated with sale or storing of the semen straw.



## Report integration:

SEMEN PRODUCTION FROM THE YEAR :-2002 TO 2003												
<i>From :-</i>		2002		<i>Total</i>		2003		<input type="button" value="View"/>				
Year	Opening	Production				Total	Distribution				Total	Closing
	Balance	Buffalo Bull		Cow Bull			Buffalo Bull		Cow Bull			
		Mini	Medium	Mini	Medium	Mini	Medium	Mini	Medium			
2002	233808	-	-	-	-	-	-	-	-	-	-	233808
2003	233808	20208	4229	55243	-	79680	10505	15180	71700	2160	99545	213943
-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Total</b>	-	20208	4229	55243	-	79680	10505	15180	71700	2160	99545	-
<i>Total Production of Buffalo &amp; Cow Bull :- 313488</i> <i>Total Distribution of Buffalo &amp; Cow Bull :- 99545</i> <i>Total Storage of Buffalo &amp; Cow Bull :- 213943</i>												

Many organizations are multi-tier and it is necessary to submit periodic reports at each level. Semen Perfect generates all such reports in specified format for each level that can be printed and saved as soft copy. These reports cannot be edited or altered so that the integrity is ensured. This would save lot of time in preparing reports. The reports that are generated are not only passive data but analyzed data that has been converted into various indices. Thus, it is easier to assess and monitor performance.

**Multi-level uploading of reports:** Different level administrative officers can have specific integration software on their personal computer. This enables them to upload and update the data received from centers or administrative level. For example, the frozen semen reports can be transferred to the regional head on a floppy, who can just upload the report. The regional-level head can further generate a comparative report that can be passed on higher level, again on a floppy. Thus, '*Semen<sup>Perfect</sup>*' has facility to upward as well as downward data integration.

Thus, in many respects '*Semen<sup>Perfect</sup>*' is a total solution for the semen banking and related activities.

**Field Data Collection:** We offer several options for field data collection and transfer to the central server:

**Herdman –PDA:** This software that can be used for field data collection. Herdman-PDA also permits data processing for the village level AI worker / Technician who can generate action lists and schedules for the animals in the centers. The data can be transferred using GPRS sync facilities.



**Herdman-hand-held:** Herdman-hand held is a simple device for field data collection. AI, PD calving, milk record, drying off, calf weight records can be stored and the data transferred to the server.

**Herdman-WAN:** This is the unique software that enables the AI technician to access the village animal data using WAN-enabled mobile phone. Simple data input forms are provided that enable the AI technician to enter and transfer the data to the server.

**Herdman-SMS:** This module provides facilities for sending action and alarm alerts to the farmers. The sms messages are generated automatically based on the threshold levels defined as default. The farmers can also access animal data by sending template messages.

The above systems have been developed keeping in view the typical requirements of the dairy husbandry systems prevalent in India and other developing or under-developed countries.

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