National Farm Animal Identification & Records

National FAIR Status Report — Summer 2007

Five years since its inception, National FAIR continues to demonstrate and educate on how a national animal ID system can work in the U.S. Thanks to Congressional Appropriations, and the support of USDA/APHIS/VS, our research of electronic ID and animal tracking has made important strides in helping protect the health of our valuable U.S. animal agriculture industry.

This report details the progress made and the viability of the methods used, to track animals in the National FAIR program. Recent milestones have been reached with the enrollment of more than 4.5 million animals from over 19,000 farms in the National FAIR system from across the country.

We are proud to have been working with the development of the US Animal Identification Plan (USAIP) and what has become known as National Animal Identification System (NAIS) today. Our experience with RFID, particularly in the state of Michigan, has been an excellent testing ground for many of the standards set in the USAIP. From our standpoint, we are proud to say we have proven it works and we are excited for the future of national animal ID.

Finally, National FAIR has continued as a leader to help educate all interested on the importance of national identification. We are encouraging all farmers to tag their bovines at birth to prepare them for the future.

FAIR
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Inside the numbers

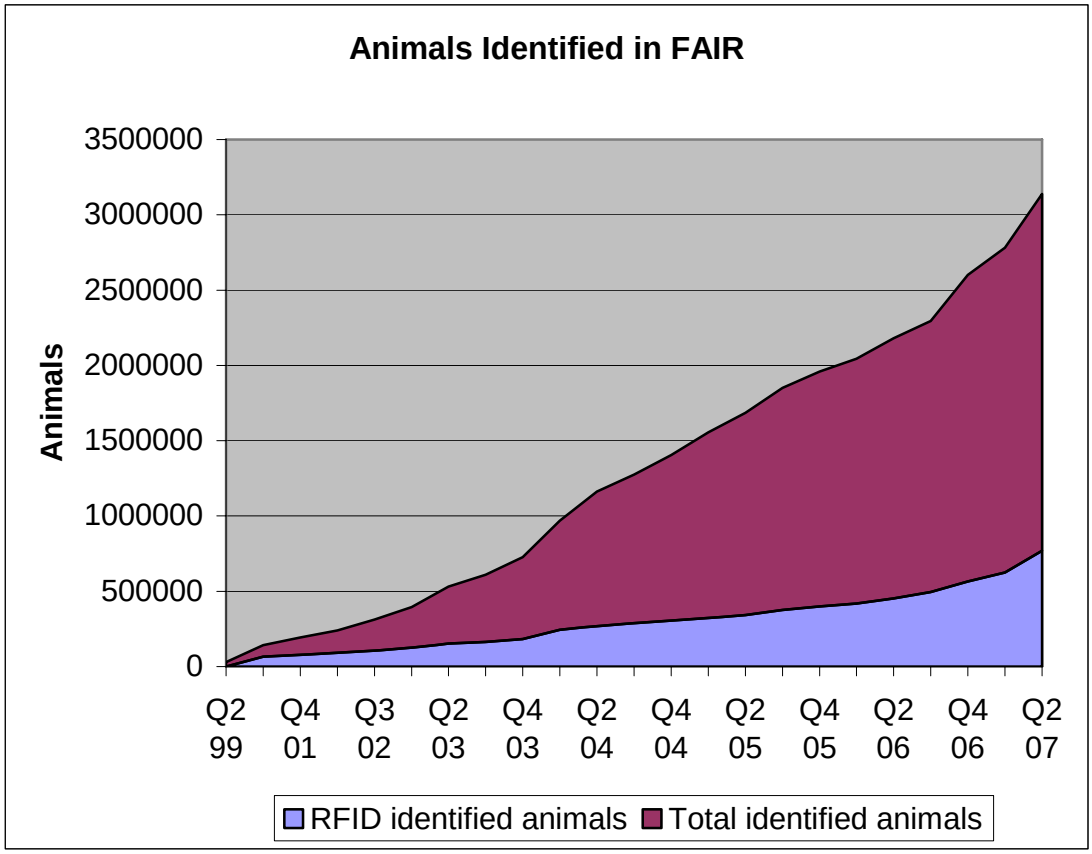
Herd enrollment

Table 1 shows the number of active premises enrolled in National FAIR by state. A total of 49 states now have herds that have been issued FAIR tags.

State	# Premises w/ Visible tags	# Premises w/ Visible & RFID tags	# Premises Market	# Premises Slaughter
Alabama	4	1		
Arkansas	12	2		
Arizona	4	1		
California	274	147	3	1
Colorado	11	2		
Connecticut	20			
Delaware	18			
Florida	9	2		
Georgia	26			
Hawaii	1	1		
Iowa	219	14		
Idaho	47	6		
Illinois	160	30		1
Indiana	105	11		
Kansas	58	8		
Kentucky	46	2		
Louisiana	6			
Massachusetts	22	2		
Maryland	108	5		
Maine	31	5		
Michigan	14,699	10,461	13	34
Minnesota	308	40		
Missouri	80	12		
Mississippi	7			
Montana	6			
North Carolina	33			
North Dakota	20	1		
Nebraska	32	2		
New Hampshire	26	1		
New Jersey	18			1
New Mexico	22	3		
Nevada	5	1		
New York	527	60	2	
Ohio	274	22		
Oklahoma	36	4		
Oregon	46	5		
Pennsylvania	823	53	1	4
Rhode Island	2			
South Carolina	15			
South Dakota	59	6		
Tennessee	35	2		
Texas	75	13		
Utah	34	4		
Virginia	77	4		
Vermont	119	8		
Washington	79	5		
Wisconsin	1059	108	3	6
West Virginia	15			
Wyoming	1			
Total	**19,713**	**11,054**	**22**	**47**

Animal enrollment

The number of animals identified in the National FAIR database continues to increase substantially. So far in 2007, FAIR identified* 335,238 animals. Total number of animals identified since the start of the FAIR program is up to 2,371,086, of which 768,283 have an RFID tag. There are dairy and beef animals identified in FAIR.



Number of animals identified in the four pilot states

State	# Animals ID'd	# Animals ID'd w/ RFID
California	350,870	111,943
New York	184,030	62,470
Pennsylvania	182,148	24,353
Wisconsin	282,271	83,906
Total	999,319	282,672

* Any animal identification information beyond the FAIR tag numbers will constitute an animal as identified.

Market and Slaughter Plant Update

Existing RFID readers: The readers at all the markets and slaughter plants are fully operational, and files are being transmitted on a regular basis. With every RFID reader set-up being unique, National FAIR has been continually trying to improve upon the file transmission process.

RFIDs read at markets

Quarter	Dryden (NY)	Pavilion (NY)	Northern MI Lvstk (MI)	St. Louis (MI)	Clare (MI)	Cass City (MI)	Farmers (MI)	Napoleon (MI)	Bonduel (WI)	Manchester (MI)	Martella (CA)	Lake Odessa (MI)	Wayland (MI)	Marlette (MI)	Ravenna (MI)	**Total**
Q2 '99	15															**15**
Q3 '99	146															**146**
Q4 '99	99															**99**
Q2 '00	40	28														**68**
Q3 '00	47	91														**138**
Q4 '00	93	43														**136**
Q1 '01	70	22														**92**
Q2 '01	53	86														**139**
Q3 '01	34	57														**91**
Q4 '01	29	100														**129**
Q1 '02	49	140														**189**
Q2 '02	76	169														**245**
Q3 '02	63	176	174	39												**452**
Q4 '02	103	0	1327	162	49	49										**1690**
Q1 '03	65	94	983	295	150	5										**1592**
Q2 '03	56	27	1727	442	28	80	1	22								**2383**
Q3 '03	11	0	1154	419	68	54	15	10	3							**1734**
Q4 '03	0	0	3242	548	131	0	24	48	6	13						**4012**
Q1 '04	9	0	1244	323	144	1	11	38	122	22	7					**1921**
Q2 '04	0	48	2134	380	181	83	53	54	109	6	14					**3062**
Q3 '04	0	143	2046	238	294	75	71	85	138	6	18					**3114**
Q4 '04	0	0	4254	281	239	0	75	37	69	9	24					**4988**
Q1 '05	0	163	1867	233	0	26	0	77	31	0	15					**2412**
Q2 '05	53	63	4159	243	167	104	0	35	16	0	42					**4882**
Q3 '05	90	0	2569	250	275	60	34	91	0	5	2					**3376**
Q4 '05	144	76	5870	266	467	250	78	8	0	10	77					**7246**
Q1 '06	156	174	2621	175	172	88	20	3	60	14	59					**3542**
Q2 '06	123	77	4080	50	69	192	115	80	45	53	387					**5271**
Q3 '06	144	107	3118	490	333	78	163	187	223	15	312					**5170**
Q4 '06	165	33	6322	302	282	305	0	204	83	98	0					**7794**
Q1 '07	194	43	2998	2461	1356	0	971	1117	123	728	0	2123	2354			**14468**
Q2 '07	176	343	7203	7051	5805	7963	4213	3189	96	2335	261	7043	6894	2928	2223	**57723**
Total	**2303**	**2303**	**59092**	**14648**	**10210**	**9413**	**5844**	**5285**	**1124**	**3314**	**1218**	**2123**	**2354**	**2928**	**2223**	

RFIDs read at slaughter plants

Quarter	Taylor (PA)	Cargill (WI)	Packerland (MI)	Packerland (WI)	Moyers (PA)	Tyson/IBP (IL)	Dress Beef (WI)	Beef Packers (CA)	Western Michigan (MI)	**Total**
Q2 '99	2									**2**
Q3 '99	193									**193**
Q4 '99	206									**206**
Q1 '00	167									**167**
Q2 '00	176	194								**370**
Q3 '00	281	250								**531**
Q4 '00	265	21								**286**
Q1 '01	352	99								**451**
Q2 '01	452	170								**622**
Q3 '01	1072	179								**1251**
Q4 '01	602	290								**892**
Q1 '02	690	362								**1052**
Q2 '02	3458	317	237							**4012**
Q3 '02	4399	431	563	157						**5550**
Q4 '02	6910	556	633	136	857					**9092**
Q1 '03	6571	614	872	573	1664	930	1083			**12307**
Q2 '03	4	596	1168	321	2227	1437	1156			**6909**
Q3 '03	1316	654	502	153	993	103	495			**4216**
Q4 '03	960	328	194	603	519	255	661	73		**3593**
Q1 '04	990	31	208	184	792	300	945	198		**3648**
Q2 '04	935	0	388	374	15	444	1036	126		**3318**
Q3 '04	1390	449	628	540	9	988	1378	133		**5515**
Q4 '04	1401	779	705	286	0	840	1151	80		**5242**
Q1 '05	1103	348	580	153	3	932	1341	1443		**5903**
Q2 '05	1258	493	1166	304	6	696	890	1839		**6652**
Q3 '05	942	629	1191	564	86	616	50	2468		**6546**
Q4 '05	3306	154	1271	585	233	1466	1021	2596		**10632**
Q1 '06	2701	139	1259	465	100	1364	1352	2939		**10319**
Q2 '06	2666	195	63	2164	266	1345	1218	4297		**12214**
Q3 '06	3061	1213	1322	1479	483	475	1644	5086		**14763**
Q4 '06	3752	1679	4134	2629	301	534	2303	7952		**23284**
Q1 '07	5550	4320	12550	3823	441	22	2889	6910		**36505**
Q2 '07	5891	7780	25196	4579	855	8	8139	9923	2131	**64502**
Total	**63022**	**23270**	**54830**	**20072**	**8995**	**12755**	**28752**	**46063**	**2131**	

RFID Tracking

Beyond the RFID information collected directly from processing plants, RFID tags have been returned to the FAIR office from animals that moved through other processing plants, and various small processing plants in Michigan. FAIR has been collecting RFID reads at all the packing plants from cattle originally tagged in Canada and shipped to the US.

Animals tracked from state of origin to slaughter

Plant	VT	MI	NY	CA	WI	PA
Taylor	1,081	11,776	11,852	5	7	27,746
Cargill (WI)	3	9,815	126	5	16,333	15
Packerland (WI)		463	1		2,252	2
Packerland (MI)	2	33,526	290		69	38
Moyers	106	2,121	808			3,234
Dress Beef		17,844	15	3	22,263	5
Tyson/IBP		3,173	11		6	
Nickels			228			832
BPI	27	3		13,589	5	4
West Michigan		2,060	1			
Total	1,219	80,781	13,332	13,602	40,935	31,876

(NOTE: Excludes all Canadian and animals that were not identified by FAIR)

Validation

The FAIR pilot program checks animals for proper tag location and tag retention and codes each animal accordingly:

1) Animal has an RFID in the ear; verify the RFID can be read
2) Animal has an RFID in the ear; measure the location in the ear
3) Animal does not have an RFID; however it could not be established that the animal was ever tagged with an RFID
4) Animal does not have an RFID in the ear, however a hole in the ear is visible from tagging with an RFID that appears to have been lost

Results:

Herd reviews on FAIR pilot herds include checks on 9686 animals with RFID eartags to date. From these, 5145 have data on the tag's location in the ear. As shown in the table below, 69 (0.7%) RFID's could not be read, 156 (1.6%) animals lost the RFID, and 231 (2.4%) animals did not have an RFID with no evidence of having been tagged initially. The tag location data shows that from the 5145 animals that have location data, 4675 (90.9%) are properly tagged close to the head, while 414 (8.0%) animals had a location that was more central in the ear, and 56 (1.1%) animals had the RFID tag placed on the outside of the ear which could be the major cause for tag loss at a later date. When comparing these numbers to the initial numbers reported in previous newsletters, the percent showing proper tag placement is up.

RFID tags observed/read on the farm

	# Animals	%
RFID read correctly	9230	95.3%
RFID does not read	69	0.7%
RFID lost	156	1.6%
Animals with no RFID	231	2.4%
Total:	9686	
Tagged properly	4675	90.9%
Tagged in the middle	414	8.0%
Tagged on the outside	56	1.1%
Total:	5145	

Processing Plant Stationary Readers

National FAIR is receiving tags back from a few slaughter plants in order to validate the accuracy of the stationary RFID reader. All RFID readers have been collecting data for the most of this year. The accuracy of the RFID readers will continue to be monitored throughout the year.

Processing Plant RFID Reader Accuracy

Quarter	Plant	Read	Returned w/o Read	% RFID tags Read
Q4 '01	Taylor	602	59	91%
Q1 '02	Taylor	637	53	92%
Q1 '02	Embers	358	4	99%
Q2 '02	Taylor	3100	193*	94%
Q2 '02	Embers	194	123**	--
Q3 '02	Taylor	2907	1492*	--
Q3 '02	Embers	395	36	92%
Q4 '02	Taylor	5285	1784*	--
Q4 '02	Embers	551	5	99%
Q1 '03	Taylor	5742	829*	--
Q1 '03	Embers	517	97*	--
Q2 '03	Taylor	3570	452	89%
Q2 '03	Embers	596	11	92%
Q2 '03	Packerland	333	6	98%
Q2 '03	Dress Beef	1124	33	97%
Q 3 '03	Taylor	1331	129	90%
Q 4 '03	Taylor	960	90	91%
Q1 '04	Taylor	990	87	92%
Q2 '04	Taylor	935	93	91%
Q3 '04	Taylor	1390	60	96%
Q4 '04	Taylor	1401	29	98%
Q1 '05	Taylor	1103	125	90%
Q2 '05	Taylor	1258	67	95%
Q3 '05	Taylor	922	223*	81%*
Q4 '05	Taylor	3306	1777	94%
Q1 '06	Taylor	2701	377	88%
Q2 '06	Taylor	2666	232	89%
Q3 '06	Taylor	3061	227	93%
Q4 '06	Taylor	3752	604	86%
Q1 '07	Taylor	5550	508	92%
Q2 '07	Taylor	5891	577	91%

* Includes RFIDs that were sent back for days no RFID's files were available or sent

** Includes all RFIDs returned for the quarter, including the 8 weeks the reader was not operational

NEW with FAIR

RFID Readers and Support

National FAIR has dedicated resources to provide pro-active monitoring of RFID reader installation, performance and accuracy. This role, coupled with enhancements to the automated flow of data, will provide additional controls and efficiencies ensuring the integrity and timeliness of information. Following is several of the recent advancements made:

- Three new RFID readers were installed and a total of eight RFID reader sites were upgraded to the latest technology.
- Process map, documentation and FAIR documents created to improve on new site creation, installation, testing and data collection.
- Worked with Allflex to identify and correct communication and methodology gaps between Allflex and Holstein.
- Identified and corrected problems at existing sites that were preventing a regular daily capture of data due to hardware, software or site problems.
- Implemented new site creation procedure, which reduced or completely eliminated communication, documentation, timeline and installation issues.
- New procedure included creation of Site Data Sheet that is supplied to Allflex to be used while on-site to prevent hardware setting errors and better insight to contacts and worked required.
- New testing procedure being used to confirm two-way communication between Holstein and site, so if issues arise, they may be identified while Allflex technician is still on-site.
- Created techniques to monitor daily collection of data, along with monitoring the reader and data logger status through reports created nightly to allow for a proactive approach to problem identification.
- Upgrade of data collection techniques at three sites were implemented to begin creating a standardized method of data logging and collection techniques that will be used in the field at sites utilizing panel readers.
- Upgrade of data loggers were put into place to provide a more robust devise that is more user friendly thus providing the ability of the site contact to be used more effectively in troubleshooting problems; provides more information while dialed into the data logger to aid in problem identification; provides the site with a visual display that allows them to see the counts, time and date being recorded in the data logger.
- Upgrade of antennas required because of End-of-Life issues on old antennas and for upgrade to new data loggers.
- Communication issues were addressed by dedicated phone lines being installed at a couple of sites, problems with fax machines being used at site or plan worked out with site so that fax machine is turned off before leaving at night.

IDairy

- IDairy has been approved for a cooperative project encouraging premises registration with USDA.
- National FAIR continues to serve at the IDairy animal tracking database, and serves to converge animal ID and movement files from the six major dairy organizations involved.