

Embracing Handheld Computers and RFID Technology to Enhance Herd Management



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Integration of RFID Tools Since 2001



Pocket DHI-Plus and RFID



Introduced in 2006

Pocket DHI-Plus

- Convenient access to cow and heifer records
- Record events at cow side as they occur
- Used with or without RFID



Typical RFID System

- RFID Ear Tags
- RFID Reader
- Pocket PC in a protective case
- Pocket DHI-Plus Software
- Ear Phone



Herd Exam Using RFID and Pocket DHI-Plus

- Preloaded the list of cows to examine
- Scans the cow
- Hears the reason for examination and relays it to the person examining the cows:
 - **Open**
 - **P1** (1st Preg Check) and **Days Since Bred**
 - **P2** (2nd Preg Check) and **Days Since Bred**
 - **Skip** (Not on List)



(The users select which audio prompts are played.)

Herd Exam Using RFID and Pocket DHI-Plus

- Cow record is displayed on the Pocket-PC
- User can move ahead and find the next cow to examine while the last cow is being examined.



Herd Exam Using RFID and Pocket DHI-Plus

- Record the results of examination of the last cow



Feedback from Dairy Producers using RFID

1,049 Cow Dairy in California

- Benefits on Vet Day:
 - Labor Savings (3 man hours per week):
 - Eliminated pre-marking the cows (2 men for 1 hour)
 - Eliminated data entry after the Vet Check (1hour)
 - Miss fewer cows:
 - Identifies the cows even when they are in the wrong pen
 - In the past they would miss 6 or 7 cows
 - Now they only miss about 1 cow

1,049 Cow Dairy in California

- Benefits on Vet Day:
 - Make better decisions by having the complete animal history available on the Pocket PC
 - More accurate records

3,434 Cow Dairy in Arizona

- Benefits on Herd Examination Day:
 - Eliminate transposition errors when:
 - Recording examination results on paper
 - Typing the data on the office computer
 - Labor savings:
 - Use two people rather than three

3,434 Cow Dairy in Arizona

- Benefits in a Systematic Breeding Program:
 - Cows are not locked up as long
 - Personnel scan the animals about as fast as they walk
 - Changed to a daily injection and breeding schedule:
 - Breed 8 cows daily rather than 56 on one day a week
 - Personnel are not as worn out
 - Improved Reproduction Performance
 - Inventory verification happens at the same time

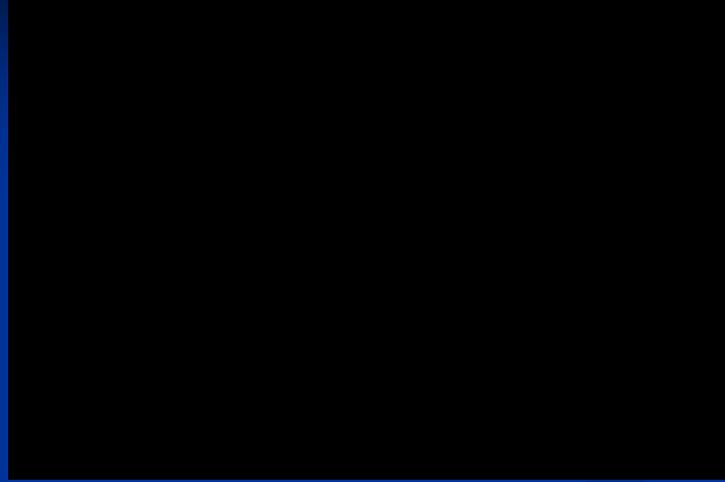
Systematic Breeding Program Using RFID and Pocket DHI-Plus

Herdsman hears:

- LUT
- GnRH
- Skip (Not on List)



Events are recorded automatically



Scanned 57 cows and gave two injections in two minutes.

Compliance Verification

- Date and time of RFID scans / injections
- List the animals missed

Additional Benefits at the 3,434 Cow Dairy in Arizona

- Eliminated one full-time labor position
- Unexpected benefits:
 - Able to work the cows in the dark (cooler)
 - Cows spend less time locked-up in the heat
- Easier to work in the rain:
 - Ink runs on the printed reports
 - Paper reports turn to mush
 - All you need is a weather-proof vet

4290 Cow Dairy in California

- PreSynch shots list
- Uses 2 people for accountability
- Use of RFID and handheld more accurate than with a reloaded list

4290 Cow Dairy in California

- Conception on OvaSynch breedings higher than on regular breedings
- Easier for the workers to use the handheld versus working off a printed list
- Cow not on list, audio to skip cow

6,073 Cow Dairy in Idaho

- Some of their Labor Savings

	<u>Weekly</u>
■ Synchronization Shots	3 hours
■ Dry Off Cows	1 hour
■ Vet Check on Wednesdays	2.5 hours
■ Vet Check on Fridays	2.5 hours
■ Inventory	2 hours
- Eliminated a full-time labor position

12,218 Cow Dairy in Idaho

- 9 Pocket PCs and 6 RFID Scanners
- Cows are scanned 1 to 2 times every week
- Approximately 80,000 RFID scans per month
- Used by 13 employees on the dairy
- Used by 4 employees of the AI company that breeds the cows (Pocket PCs only)
- Saves the work crews two hours per day
- Eliminated the part-time data entry position

12,218 Cow Dairy in Idaho

Improved accuracy	Cows Missed
■ BST Injections:	
■ Before RFID	15
■ With RFID	2
(Results in more milk production.)	
Systematic Breeding Injections:	
■ Before RFID	6 - 7
■ With RFID	Almost Zero
(Results in improved reproduction.)	

RFID technology and Pocket DHI-Plus software

“It has paid for itself on our operation.”

John Beukers
Golden Valley Dairy



RFID technology and Pocket DHI-Plus software

“This is one of the few technologies that we have brought onto the dairy that our employees like more than we do. And, I love this thing!”

Tom Thompson
Stotz Dairy



RFID Improves Productivity



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