



## INCORPORATING RADIO FREQUENCY IDENTIFICATION DEVICES (RFID) INTO YOUR BUSINESS

### Integrating RFID Requires A Plan

The first step is to outline your expectations and decide to what degree you would like to incorporate RFID into your operation. For example, automate paper based data collection during veterinarian checks or other paper based data entry. Another more ambitious goal would be to fully integrate RFID with parlor identification and automated milk recording and sort gates.

Items to consider in your plan:

- Amount you are willing to invest
- Number and type of RFID reader equipment to purchase
- Does it involve an upgrade to existing software or require the purchase of new software
- Integration with existing equipment and does it involve facility modifications
- Type of RFID tag to purchase
- Integrating with a third party service provider
- Training of staff

*“A business may begin with small steps and take individual incremental strides over a period of time until your ultimate goal has been reached.”*

This may appear more complicated than what one thought at first glance - yet it is important to consider the above issues before you begin purchasing equipment and other items. It is easy to purchase an individual piece - the challenge is integrating the items to work together efficiently.

A business may begin with small steps and take individual incremental strides over a period of time until your ultimate goal has been reached. There are companies that can help with outlining these individual steps to make a successful integration. In addition, some organizations can provide some of the services you were planning to implement yourself.



Please visit our website at [www.livestockvantage.com](http://www.livestockvantage.com) to access the agriculture operations individual case studies and an online Cost Benefit Calculator.

## Purchasing the Correct RFID Reader

Whether you are contemplating purchasing a stand alone RFID stick or a wand reader the price will vary from \$500 to \$1300 depending on the level of features you decide to buy.

Below are some items to consider:

### 1. Visual Display

An LED screen will display the RFID number for each animal ID tag. Therefore, one decision to make is whether an LED screen will work for your operation. Generally, an LED screen with display will increase the cost of your RFID equipment.

### 2. Tag Storage Capability

Readers are available which simply read an animal ID tag number and transmit the number wirelessly via cable (i.e. Bluetooth©) or via cable to your PC. Due to the type of reader, it may have capabilities whereby animal ID tag numbers are stored directly to the reader and can be downloaded to your PC at a later date.

### 3. Size and Shape

The size and shape of RFID readers vary widely. A stick reader reads the ID tag number optimally from the tip of the reader. The wand reader detects the animal ID tag number optimally from the side of the wand. Therefore, a preference for the correct reader will be determined based on your position relative to where you will be reading the animals ID tag numbers.

### 4. Communications

Readers with a cable connection require you to connect to another device, for example a scale head, in order to transmit the RFID number. Some readers provide both wireless and wired communications, while some readers only provide wireless Bluetooth© communications. Therefore, considering your communication needs between your RFID reader and other devices first before buying a reader.



### 5. Battery

Depending on the size of your operation and the number of reads made in one day, the size of your battery will be fundamental. Some readers have the batteries built in which can be recharged and there are readers available which allow for replacing the battery while working the herd (assuming you are carrying a spare). If the battery is not replaceable, consider the number of reads on a full battery charge and the time it will take to re-charge.

### 6. RFID Read Notification

Depending on your operation, the method by which the user is notified that an animal ID tag has been read is very important. Some RFID readers have a visual indicator (i.e. blinking light), some have a sound notification, and others have vibrating handles. Many readers have a combination of indicators. However, in a noisy barn, a vibrating handle may prove to be a valuable asset! The majority of readers require a PC or handheld PC integrated for data entry, storage, and to data retrieval. However, there are readers available which can store data on a specific animal and then be used as a sorting tool which will display information on that animal as you work on reading your animal ID tags.

## Computers and Software: What To Buy?

Before considering purchasing software, here are a few items to consider:

### 1. What data is to be collected?

Before you choose a herd management software program, make a list of all the information you wish to collect on your animals. Next, decide what type of management reports you wish to create using this information. Different programs have numerous capabilities, therefore, compare the software package features with your list of information and the data you wish to collect.



### 2. How familiar are you with a computer?

Depending on how familiar you are with computers and if the data you wish to collect are small, you may be able to utilize simple tools downloaded from the internet and use with Microsoft Excel, for example. However, if computers are a challenge and your information needs are large, you may consider purchasing a herd management software program specifically designed for your live-stock species and type of operation.



### 3. Scalability

If you envision your usage and information will remain approximately the same over time - you may select a basic program. However, if you plan to collect additional information over time, be sure the software purchased has the capability to expand by adding data fields, creating reports, graphs, etc. Also, there may be different versions of a software program which will allow upgrades with additional features to be done at a later date.

### 4. Will the software program work with my tags?

This may be a question you never envisioned, however it pays to verify that the software program you want to purchase will work with the numbering system on your RFID tags.

### 5. What computer hardware and readers will it work with?

It is important to check with the vendor of the software the minimal requirements needed to operate the program. For example, the amount of memory or the version of Windows the software requires to run. If you plan to use a handheld data collection device, these same questions should be answered. In addition, ask if the handheld software will only work with certain RFID readers and handhelds. Certain programs may only work with specific RFID readers and handheld operating systems.

### 6. Do I need internet access?

You can obtain most software by purchasing a CD disk and installing it on your computer, however some software programs can download updates and fixes via the internet. Check to see if these features are available for the software you are considering purchasing.



## Computers and Software: What To Buy? (continued from page 3)

### 7. Check the price

Before purchasing, ask the vendor the following questions:

- What is the purchase price of the software?
- If I wish to install it on multiple computers on the farm, is there an additional cost for adding users ?
- Is there an annual maintenance fee? Is there a “per animal” fee?
- Can I pay for upgrading the software at a later date or do I need to buy a whole new program?

### 8. Software and Hardware Support

What level of support do you receive from the software company with your purchase? It is important to determine the level of support and the length of time the support will be available. Also, determine if the support is provided by telephone only or can a trained professional be arranged to visit your business. Lastly, if onsite support is available, be sure you know ahead of time what costs will be involved if any.

### RFID tag: What Type to Purchase

With many types of RFID tags available on the market, one needs to make sure you have checked a couple things first.

#### 1. Tag Frequency

There are low frequency and high frequency RFID tags available. The most predominant type of RFID tag currently used in livestock is the Low Frequency tag. (134.2Khz) There are several companies that manufacture these tags and sell these through distributors. As a producer you have many choices as far as price, shape and size of RFID tags, however make sure you purchase a tag that uses a frequency that will be compatible with your reader.



#### 2. ID Numbering system

Two numbering systems exist; a manufacturer numbering system or AIN (or 840) numbering system. They are both 15 digit numbers, however the AIN (840) RFID tags qualify for official ID in disease programs and in many cases can be used in industry programs without requiring any additional ID numbers for your animal. Before you decide to buy an RFID tag, make sure to check with the software or RFID reader company which numbering system is preferred to avoid compatibility issues with the management software or reader.

#### 3. Tag size and shape

If you are experiencing a higher than acceptable panel tag loss rate, the recommendation is to select a small button sized RFID tag, This will lessen the chance that the tag will get caught and ripped out of the ear. If you wish to use a visible management number together with an RFID, you can order a secondary panel tag in combination with the RFID. If tag loss is small then you can consider ordering a single RFID/Panel tag with either write -on space or custom ordered with a management number.

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