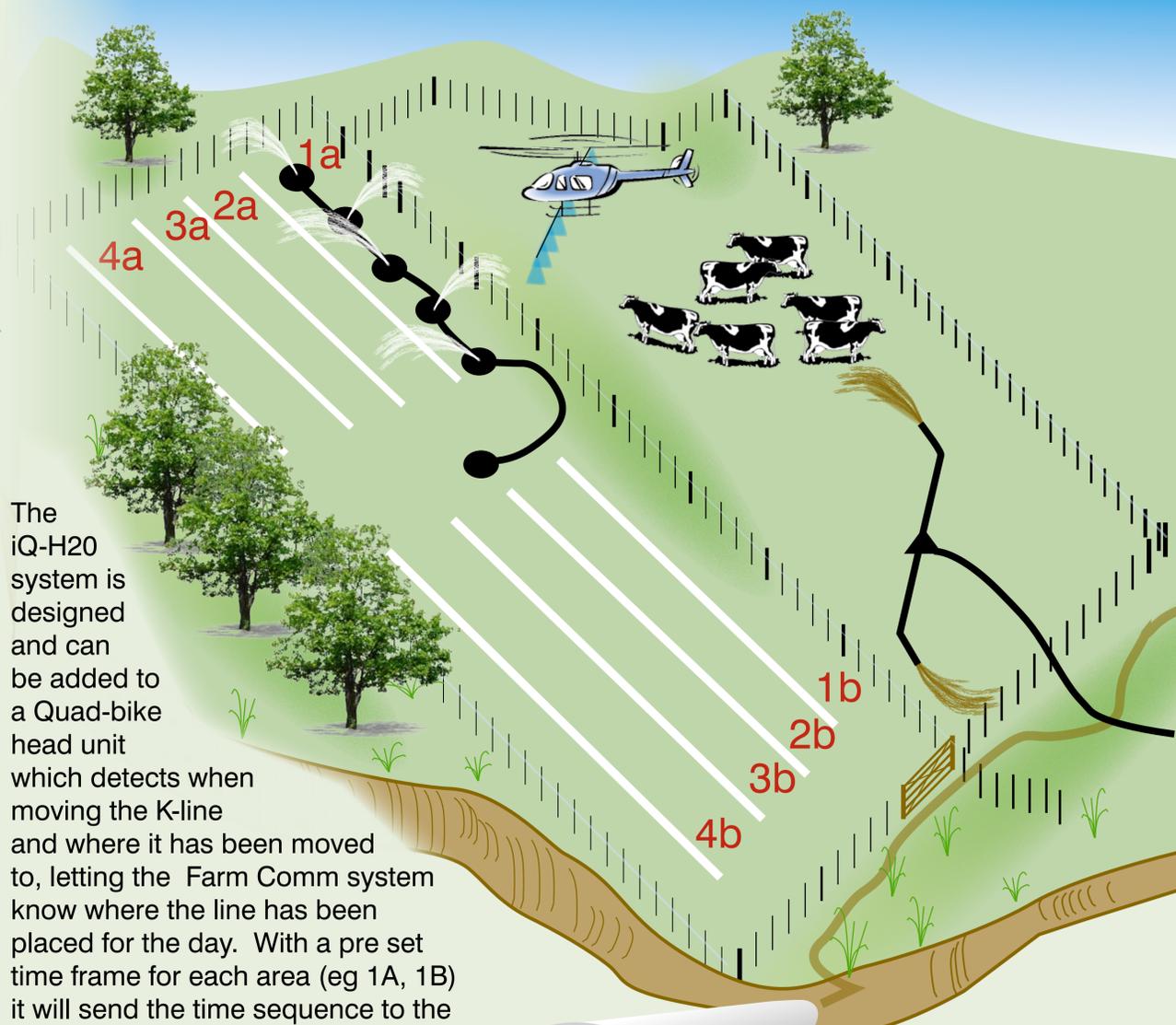
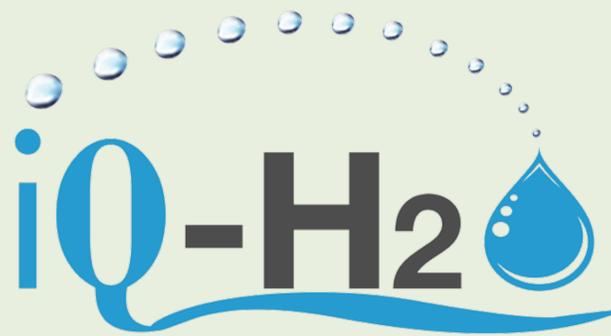
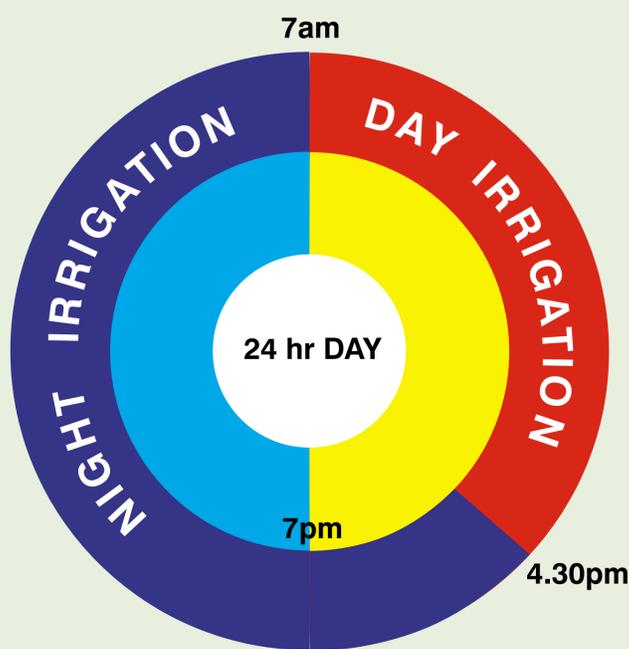
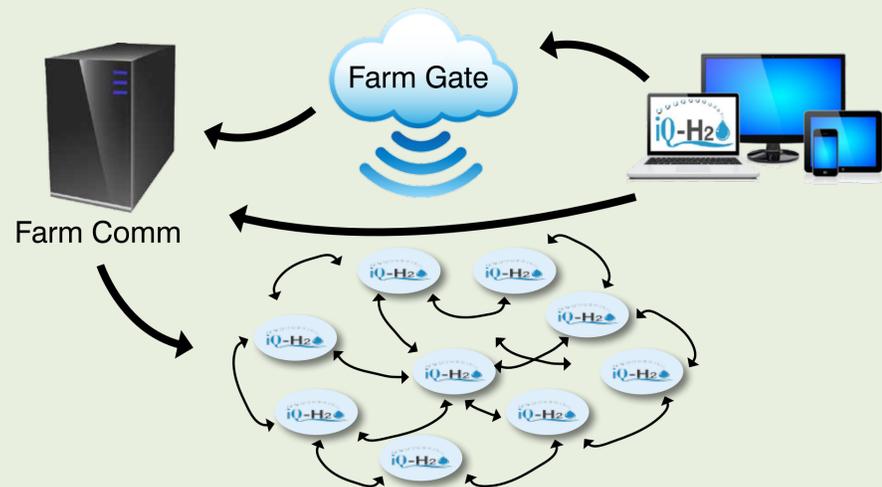


Pod irrigation is widely used by New Zealand farmers as an effective means of applying water, this method of application is becoming more common on rolling hill country. The basic principle of irrigation is to keep soil moisture at a point above which plant growth is impaired, the stress point and below/near the point at which the soil is full and can't hold any more water, the field capacity. If soil moisture drops below the stress point, drop of production may occur. If soil moisture exceeds field capacity, surface run-off or deep drainage will occur. Local council resource consent requires farmers to take all feasible steps to ensure run-off from irrigation does not occur. Excessive run-off from farms flowing into waterways and neighbouring farms may lead to the farm owner being prosecuted. Run-off not only causes environmental issues but also costs the farmer money in under utilisation of a valuable resource, being water and fertilizer. Run-off is caused by a number of factors these being, poor system design, uneven time schedules, (refer to pie chart), human factors, topography, but the primary cause of run-off is simply applying too much water. As more farms are beginning to utilise rolling hill country, an effective way of minimising runoff needs to be installed. The best way to reduce excessive runoff and reducing costs is to implement a system of control.



The iQ-H2O system is designed and can be added to a Quad-bike head unit which detects when moving the K-line and where it has been moved to, letting the Farm Comm system know where the line has been placed for the day. With a pre set time frame for each area (eg 1A, 1B) it will send the time sequence to the iQ H2O hydrant for the days irrigation giving you more control of water over topography zones and giving you a map where the k-lines are on the farm at any time.



pie chart

On a 24 hr system being moved twice a day the avg times are 7am and 4:30pm which give the night time a 35% more water than the day time with a possible runoff the iQ-H2O can set time for each paddock or place right amount of water for the set zones. Or with a little work and maybe some extra lines you can make it once a day shift as most twice a day are 4-5 day turn around.

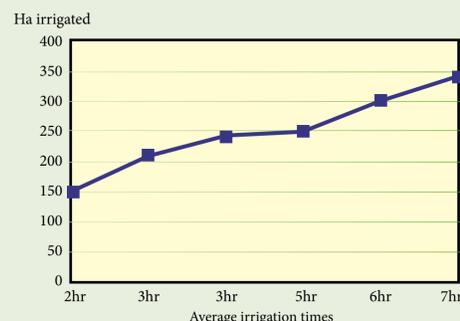


Diagram shows a hourly scale of movement of irrigation on farms. With the iQ-H2O system you could save time by not moving Pod irrigation twice a day.

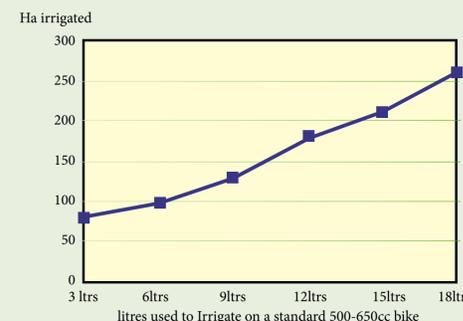


Diagram shows how the amount of the fuel that gets used on small to median farms this can be saved with not moving the irrigation.

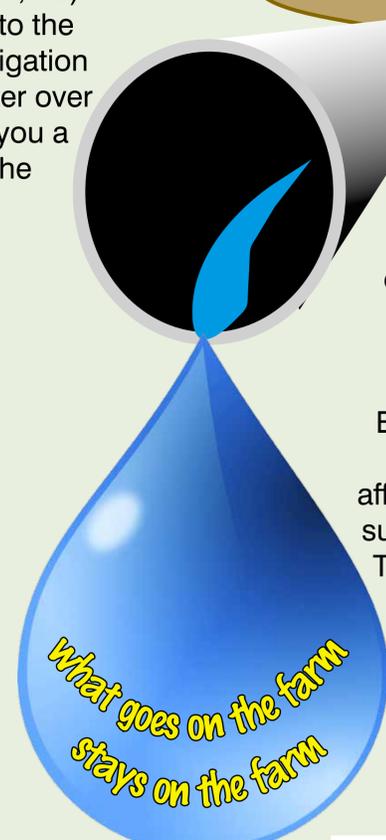
The IQ-H2O system is designed to apply the correct amount of water to the right areas on paddocks without runoff. The system takes into account the soil moisture, evapotranspiration rates, topography, and environmental factors.

- **Farm Comm** is the smarts behind the iQ-H2O system collecting the data from on/off farm sensors on a daily system and when needed it sends it out to the mesh network. Each hydrant has a unique code, for each hydrant.
- **Farm Gate** is a cloud server where the system backup is on a daily sequence and where you can view any data or make necessary change to the irrigation and send it to the Farm Comm system on farm from any internet able device.
- **iQ-h2o** is the unit at the hydrant or sprinkler with multiple inputs, you can add xtra sensors like temp, moisture, rain gauge, uv, so any hydrant can be a weather station to help improve the management of irrigation.



With 30 hydrant install and many more on books in the near future we are looking at adding this system to fixed grid post and underground pop up sprinklers for farmer.

Hydrant install on a Trial farm ISA Holdings in Oamaru



A study by Niwa found waterways flowing through farmland have higher levels of nitrogen and phosphorous than those that flow through unfarmed land.

Excess nutrients can increase plant and algal growth and affect recreational use of rivers, such as fishing and swimming. They can also harm lakes and coastal environments.

So what goes on the farm stays on the farm