



DropControl

 WiseConn



**Index**.....

**Welcome to DropControl**..... **4**

    How to work with this document..... **5**

    User Manual Glossary**6**

**How DropControl Works**..... **7**

    Client DropControl Software..... **7**

**Technical Specifications**..... **9**

    DropControl Software..... **9**

**DropControl Software Usage**..... **10**

    Logging into the system..... **10**

    Private Site Structure..... **11**

    Account Summary..... **15**

    Field..... **19**

    Alarms..... **30**

## *Welcome to DropControl*

*DropControl* is a wireless system for remote actuation of solenoid valves, hydraulic pumps and other ON/OFF devices, which additionally registers field sensor monitoring.

*DropControl* allows the user to remotely control field actuators by controlling signals from network nodes. These signals allow operating various hydraulic components in a field.

It also allows communication between the various network nodes and the different software that compose the system, so as to undertake device configuration, perform irrigation plus recording and deploying monitoring data from the sensors deployed in the field.

This document is geared to the private module, which provides the tools for scheduling irrigation, analyzing sensor data and the summary information both from the field as from the sectors.

## How to work with this document

In order to improve understanding of tasks and steps as explained in this current manual, the following conventions have been used.



This icon is used to indicate the user any additional information of the task being read.



All suggestions regarding the task being read are indicated with this type of icon.



This icon is used whenever the current task has an action that may lead to confusion or which may need a response that may require better understanding from the user.

## User Manual Glossary

- **Node:** Electronic device with wireless communication, data storage and connection to sensors and actuators through Expansion Boards.
- **Node-Gateway:** A special type of node, whose task is to communicate with the server. It has a specialized expansion card for connecting to a Mobile Modem (specifically XModem from the YX Wireless company).
- **Network:** It is a set of nodes which communicate wirelessly with each other. These devices are distributed throughout the field.
- **Expansion Cards:** Modules that allow connecting sensors or actuators to the *DropControl* nodes.
- **Terminal Strip:** Module that allows the manual control of hydraulic components, actuators and irrigation sectors.
- **Matrix:** Expansion Card that allows connecting different devices (relays, dry contact sensors and 4-20m A sensors) to the same hardware.
- **Hydraulic Components:** Components in a field, which constitute the irrigation logic in a field.

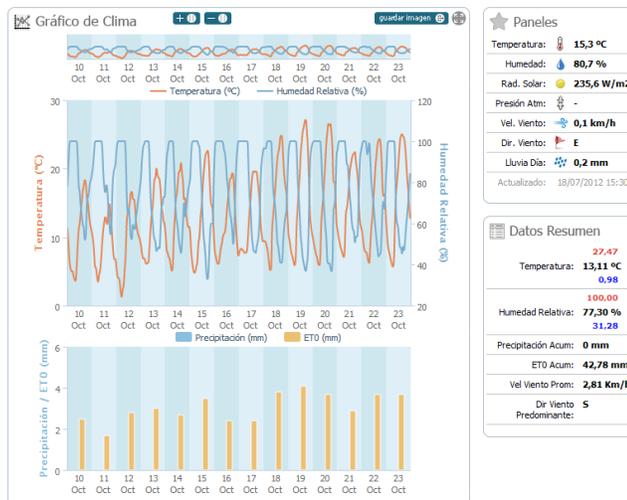
# How DropControl Works

## Client DropControl Software



Client DropControl software is a Web application aimed at irrigation scheduling and data monitoring for system sensors





Access to this application is via browser, typing-in the address <http://www.dropcontrol.cl>. Information about WiseConn and products will also be available in a public access area.

# Technical Specifications

## DropControl Software

The following technical specifications shall be considered so as to ensure the proper functioning of the *DropControl* configuration software.

- Operating System Microsoft Windows XP/ Windows 7, OSX 10.6 / 10.7 or Ubuntu 10
- Processor: Intel Celeron 1.8 GHZ or higher
- RAM Memory: 1 GB or higher
- Internet connection
- Internet Browser: Internet Explorer 7+, Chrome 4+, FireFox 5+, Safari 4+ and Opera 10+.
- Application for viewing Flash content
- Screen resolution: 1280x800 (Recommended) / 1024x768 (Minimum)

# DropControl Software Usage

## Logging into the system

<http://www.dropcontrol.cl>



### Step 1: Logging into the system



In order to log into the DropControl application, first type in the following address in your browser: <http://www.dropcontrol.cl>

Then enter your email and password, and click on the “**Enter**” icon.

## Private Site Structure

Once the login information has been entered, the user will be directed to the private site homepage: if you have more than one field, the user will be directed to the **Summary** page; otherwise they will be directed to the **Field** page. All private site pages have the following elements.

The screenshot shows the private site interface for 'Resumen Cuenta Soc. Agrícola Mapulhue LTDA'. The interface is annotated with red boxes and green arrows pointing to 'Side Menu', 'Header', 'Functionality Display', and 'Footer'.

**Side Menu:** A vertical navigation menu on the left side, containing the following items: Configuración, Alarmas, Resumen Cuenta, Campo Mapulhue, Riego, Análisis de Clima, Análisis de Suelo, and Análisis de Riego.

**Header:** The top section of the page, displaying the user's name 'Jacquie Fonseca Valdebenito', a 'SALIR' button, and the date 'Hoy: 18 de Julio de 2012'. Below this is a dropdown menu for 'Seleccione Cuenta: Soc. Agrícola Mapulhue LTDA'.

**Functionality Display:** The main content area, divided into two sections:
 

- Clima:** A weather summary for 'Campo Mapulhue, Del Maule, Curicó, Teno'. It includes a list of current weather data:
  - Temperatura: 15,8 °C
  - Humedad: 78,8 %
  - Rad. Solar: 297,9 W/m2
  - Presión Atm: No Disponible
  - Vel. Viento: 1,5 km/h
  - Dir. Viento: SE
  - Lluvia Día: 0,2 mm
 Below the data is a line graph showing 'Temperatura + Humedad' over a period from 12 Jul to 18 Jul. The graph has two lines: an orange line for 'Temperatura (°C)' and a blue line for 'Humedad (%)'. A legend at the bottom of the graph identifies these lines.
 

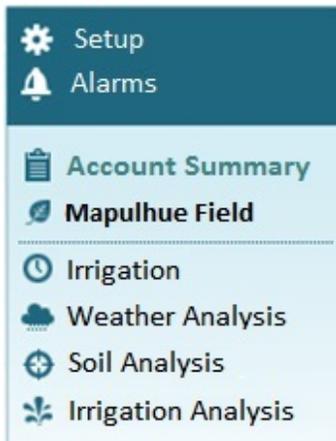
PRONÓSTICO		
	Min	Max
Hoy	9°	22°
Jue	9°	24°
Vie	5°	21°
Sáb	4°	9°
Dom	5°	17°

 The source is cited as 'Fuente: WorldWeatherOnline'.
- Estado del Campo:** A table showing the status of the field:
 

Campo	Estado	Sector/Componente
Mapulhue	Sin Problemas	

**Footer:** A horizontal bar at the bottom of the page containing three buttons: 'volver', 'Imprimir', and 'subir'.

## Side Menu



**Setup:** How to change the configuration will be indicated in this section.

**Alarms:** The list of all field alarms, sectors and hydraulic components can be viewed in this section.

**Account Summary:** In this section information related to user account can be seen, such as alarms, weather, and field status.

**Field:** Field information regarding the selected account is visible in this section, such as alarms, overall information, weather, sectors status and hydraulic components.

**Irrigation:** Field irrigation programming can be viewed and modified in this section. For further details, refer to the document: ***Irrigation Programming Guide***.

**Weather-Soil-Irrigation Analysis:** Graphs, irrigation data and sensors can be viewed in this section so as to perform an analysis of user Weather, Irrigation and Soil sectors. Sectors related to each type will be displayed in the side menu. For further details, refer to the documents: ***Analysis Tool set Guide (Weather, Soil and Irrigation)***



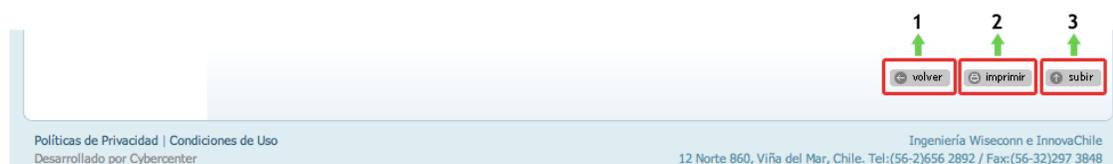
Depending on the menu selected, functionality will be displayed in the section “**Functionality Display**”

## Page Header



- 1: Page Titles
- 2: User Name
- 3: Log out and exit the private site
- 4: Today's date

## Page Footer



- 1: Return to previous page
- 2: Print current page
- 3: Go to the top of current page

## Account Summary

This page indicates information related to your user account, and to the fields associated to this account.

<http://www.dropcontrol.cl/site/dashboard/resumen.do>

The sections within this page are as detailed below.

**Resumen Cuenta Soc. Agrícola Mapulhue LTDA** Usuario Piloto Mapulhue SALIR x

Hoy: 18 de julio de 2012

Seleccione Cuenta: Soc. Agrícola Mapulhue LTDA x

**Alarmas**

Campo	Fecha	Hora	Alarma
Mapulhue	24/10/2011	17:49:45	26 Alarmas

**Clima**  
Campo Mapulhue  
Del Maule, Curicó, Teno

Temperatura: **14,9 °C**  
 Humedad: **83,0 %**  
 Rad. Solar: **25,0 W/m2**  
 Presión Atm: **No Disponible**  
 Vel. Viento: **0,0 km/h**  
 Dir. Viento: **No Disponible**  
 Lluvia Día: **0,2 mm**

Actualizado: 18/07/2012, 17:30

**Temperatura + Humedad** Lluvia + ET0

— Temperatura (°C) — Humedad (%)

**PRONÓSTICO**

	Min	Max	
Hoy	9°	22°	<span style="color: green;">☀</span>
Jue	9°	24°	<span style="color: green;">☀</span>
Vie	5°	21°	<span style="color: green;">☀</span>
Sáb	4°	9°	<span style="color: green;">☁</span>
Dom	5°	17°	<span style="color: green;">☀</span>

Fuente: WorldWeatherOnline

**Estado del Campo**

Campo	Estado	Sector/Componente
Mapulhue	<span style="color: green;">●</span> Sin Problemas	

➔ Account Selection  
➔ Alarms  
➔ Weather  
➔ Field Status

## Account Selection

### Resumen Soc. Agrícola Mapulhue LTDA

Hoy: 24 de octubre de 2011

Seleccione Cuenta: Soc. Agrícola Mapulhue LTDA  

If user has more than one associated account, s/he may be able to select the working account by simply choosing one of them in the combo. When selecting an account in the combo, the page will be reloaded.



The account selected in this page will be the account under which the information will be displayed (fields, sectors, alarms) in all the other pages of the private site.

## Alarms

Alarmas 			
Campo	Fecha	Hora	Alarma
Mapulhue	24/10/2011	17:49:45	26 Alarmas

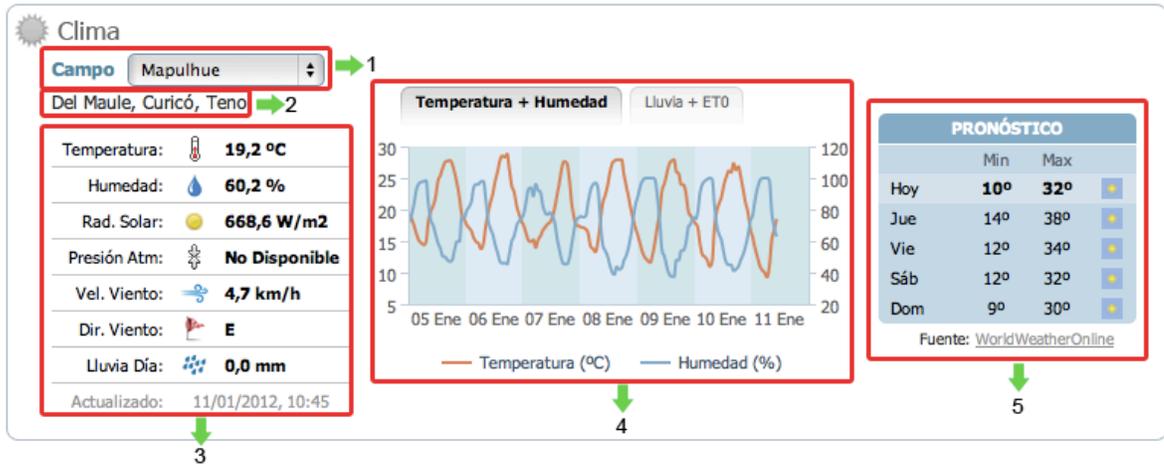
Field alarms and warnings regarding the selected account will be displayed in this section. They will be grouped by field; the date and time is that of the last alarm raised.



For further details regarding each field alarm, please access Field from the side menu.

You can hide the alarms box by clicking the  icon located on the right upper corner of the alarms box.

## Weather



Information related to field weather will be displayed in this section:

- 1:Field Selector**, in case the account has more than one field associated.
- 2:Location of Field**: Region, province, district.
- 3:Latest measurements within past 24 hours**: temperature, moisture, pressure, wind speed/direction. It also shows the sum of precipitations within the past 24 hours. Also, the date and time of the last previous measurements is displayed.
- 4:Temperature+Moisture and Rain+ET0 graphs** with measurements of the past 7 days.
- 5:Minimum/maximum temperature and weather forecast** as for today and the next 4 days.

## Fields Status

✓ Estado del Campo

Campo	Estado	Sector/Componente
Mapulhue	● Alarma	Sector 7, Bomba Kiwis, Bomba Canal, Sector 5, Sector 6
Río Cruces	● Sin Problemas	

Fields status is displayed in this section. Possible statuses are:

### ➤ Alarm

- Warning
- In irrigation execution
- Without problems

Sector names and/or hydraulic components in which the alarms and /or irrigations have taken place are also displayed.

## Field

This page indicates information related to a field associated to user account. In case the user has more than one field, they will be able to select it from the side menu, upon prior account selection. In case the account only has one associated field, it will be immediately displayed after log in.

<http://www.dropcontrol.cl/site/dashboard/campo.do>

The sections within this page are detailed below.

**Campo Mapulhue** Hoy: 11 de enero de 2012

**Alarmas**

Sector / Componente	Fecha	Hora	Alarma	Acciones
Bomba Kiwis	11/01/2012	07:16:00	6 Alarmas	<a href="#">cesar</a>
Bomba Kiwis	08/01/2012	22:27:12	Contacto Auxiliar	<a href="#">cesar</a>

→ Alarms

**Información General del Campo**

Administrador(es): **Usuario Piloto Mapulhue, Felipe Rivas Sabelle.**

Superficie: **39,75 ha**

Cultivos: **ciruelos, kiwis**

Año(s): **2006**



Tipo de Sector:

- Sectores de suelo
- Sectores de cultivo
- Sectores administrativos
- Sectores de riego

→ Field Overall Information

**Clima**

Del Maule, Curicó, Teno

Temperatura: **20,6 °C**

Humedad: **54,1 %**

Rad. Solar: **782,2 W/m2**

Presión Atm: **No Disponible**

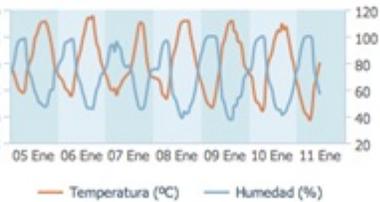
Vel. Viento: **3,8 km/h**

Dir. Viento: **SE**

Lluvia Día: **0,0 mm**

Actualizado: 11/01/2012, 11:15

Temperatura + Humedad



— Temperatura (°C) — Humedad (%)

Lluvia + ETO

**PRONÓSTICO**

	Min	Max
Hoy	10°	32°
Jue	14°	38°
Vie	12°	34°
Sáb	12°	32°
Dom	9°	30°

Fuente: WorldWeatherOnline

→ Weather

**Estado del Campo**

Sector	Estado	Detalle
<b>K-1</b>	<b>● En Ejecución de Riego</b>	En ejecución
Componente	Estado	Detalle

Todos los componentes de hidraulica se encuentran sin problemas

→ Field Status

## Alarms

Alarmas				
Sector / Componente	Fecha	Hora	Alarma	Acciones
Bomba Kivis	11/01/2012	07:16:00	6 Alarmas	 cerrar
Bomba Kivis	08/01/2012	22:27:12	Contacto Auxiliar	 cerrar

Field alarms, i.e. sector alarms and hydraulic alarms are displayed in this section.

Alarms are grouped by sector or hydraulic component. Date and time corresponds to the last alarm. If there is only one alarm by sector/component, description will be displayed and not the amount of alarms.

For each sector/component having an alarm, there is the possibility of shutting down the alarm(s) by clicking on the  icon of that line. On closing an alarm, it will not be displayed again in any

If there is more than one alarm, there is the possibility of choosing which one to close by selecting the alarms and then clicking the Confirm icon.

**Confirmar Acción** ✕

¿ Está seguro que desea cerrar las siguientes alarmas en el Componente **Bomba Kivis**?

<input checked="" type="checkbox"/>	Fecha / Hora	Alarma
<input checked="" type="checkbox"/>	08/01/2012 01:16:56	Contacto Auxiliar
<input checked="" type="checkbox"/>	09/01/2012 21:01:02	Contacto Auxiliar
<input checked="" type="checkbox"/>	11/01/2012 07:04:09	Caudal Bomba - Alarma Alta
<input checked="" type="checkbox"/>	11/01/2012 07:10:40	Caudal Bomba - Alarma Alta
<input checked="" type="checkbox"/>	11/01/2012 07:12:51	Caudal Bomba - Alarma Alta
<input checked="" type="checkbox"/>	11/01/2012 07:16:00	Caudal Bomba - Alarma Alta

 Confirmar

section of the private site.

## Field Overall Information

 Información General del Campo 

Administrador(es): **Usuario Piloto Mapulhue, Felipe Rivas Sabelle.**

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Superficie: **39,75 ha**

---

Cultivos: **ciruelos, kiwis**

---

Año(s): **2006**

**Tipo de Sector:**

- Sectores de suelo
- Sectores de cultivo
- Sectores administrativos
- Sectores de riego

This section displays overall field information such as managing users, surface, types and years cultivated.

It also displays the divisions of the different types of sectors:

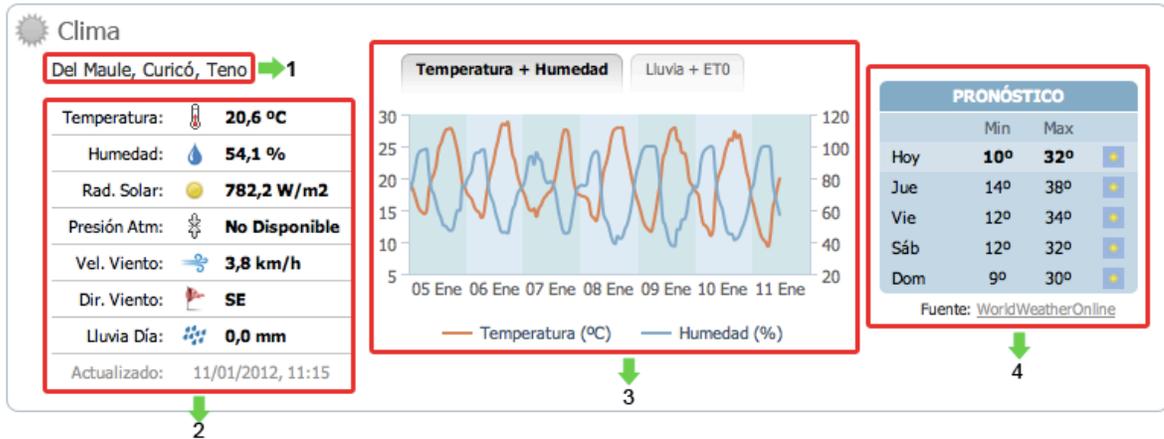
- Irrigation Sectors
- Soil Sectors
- Crop Sectors
- Administrative Sectors

**Tipo de Sector:**

- Sectores de suelo
- Sectores de cultivo
- Sectores administrativos
- Sectores de riego

In order to display the divisions by type of sector, first select sector type and then the associated image will be displayed:

## Weather



Information related to the weather of the selected field will be displayed in this section:

**1:Location of Field:** Region, province, district.

**2:Latest measurements within past 24 hours:** temperature, moisture, pressure, wind speed/direction. It also shows the sum of precipitations within the past 24 hours. The date and time of the last prior measurements are also displayed.

**3:Temperature+Moisture and Rain+ET0 graphs** with measurements of the past 7 days.

**4:Minimum/maximum temperature and weather forecast** as for today and the next 4 days.

## Field Status

✓ Estado del Campo

Sector	Estado	Detalle
<a href="#">K-1</a>	● En Ejecución de Riego	En ejecución
<a href="#">K-3</a>	● Alarma	Corte de Energía - Sin energía en caseta
Componente	Estado	Detalle
Todos los componentes de hidraulica se encuentran sin problemas		

This section displays sector status and field hydraulic components in case there are alarms, warnings or if they are currently under irrigation.

In case a sector or component has more than one alarm (or warning), the different descriptions of these alarms are displayed. Status and status detail is indicated. Possible statuses are:

- Alarm
- Warning
- In irrigation execution
- Without problems

Access may be gained to the sector information from the field status table by clicking on the sector name. This page indicates information related to an irrigation sector of your field. The sections within this page are as detailed below:

Campo Mapulhue  
Sector K-2

Hoy: 11 de enero de 2012

Fecha	Hora	Alarma	Acciones
11/01/2012	13:07:48	Nivel bajo - Alarma Baja	<a href="#">Cerrar</a>

Alarms

Información del Sector

Superficie: **4,86 ha**

Nº de Plantas: **3268**

Precipitación de Riego: **3,01 mm/hr**

Cultivos: **kiwis**

Año(s): **2006**

Bloques: **1**



Overall Sector Information

Estado Actual

Tipo de Riego: **Automático**

Estado: **En ejecución**

Inicio: **11/01/2012 13:42**

Fin: **-**

Volumen: **7,19 mm**

Caudal de riego: **141,29 m³/hr**

pH (actual/ref): **-**

CE (actual/ref): **-**

[Ver Riego](#)

[Detención de riego](#)

Current Irrigation Information

Programación de Riego

[Anterior](#) 11/01/2012 [Siguiente](#)

Riego 1 de 2 del día

Tipo de Riego: **Volumen**

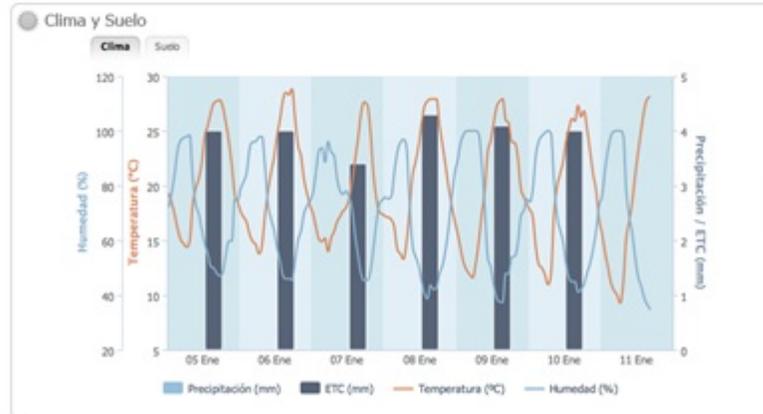
Inicio: **11/01/2012 07:00**

Fin: **11/01/2012 11:36**

Volumen: **12,00 mm**

[Ver programación](#)

Irrigation Scheduling Information



Weather and Soil Graph

## Alarms

Fecha	Hora	Alarma	Acciones
11/01/2012	13:07:48	Nivel bajo - Alarma Baja	<a href="#">Cerrar</a>

Sector alarms, with their description and date / time of generation, are displayed in this section.

Alarms can be shut down by clicking on the “Close” icon in the appropriate line. On closing an alarm, it will not be displayed again in any section of the private site.

## Sector Information

**Información del Sector**

Superficie:	<b>4,86 ha</b>
Nº de Plantas:	<b>3268</b>
Precipitación de Riego:	<b>3,01 mm/hr</b>
Cultivos:	<b>kiwis</b>
Año(s):	<b>2006</b>
Bloques:	<b>1</b>



The sector general data such as, surface, number of plants, theoretical flow, type and crop year, and finally the amount of blocks in this sector are displayed in this section.

It also displays the divisions of the irrigation sectors in the field:

## Current Irrigation Information

**Estado Actual**

Tipo de Riego:	<b>Automático</b>
Estado:	<b>En ejecución</b>
Inicio:	<b>11/01/2012 13:42</b>
Fin:	-
Volumen:	<b>7,19 mm</b>
Caudal de riego:	<b>141,29 m<sup>3</sup>/hr</b>
pH (actual/ref):	-
CE (actual/ref):	-

↔ ver riego  
⊘ detención de riego

Current status of the last irrigation in the sector, within the last 24 hours, is displayed in this section. It also displays data of this irrigation such as, status, start and end date, volume, flow and the pH values and CE as measured during irrigation.

You can view more Irrigation details may be viewable by clicking on the  icon. The irrigation may be stopped by clicking on the icon. For further information regarding the functionalities See Irrigation and Stop Irrigation, please refer to the document **Irrigation Scheduling Guide**.

## Irrigation Scheduling Information



Programación de Riego

 11/01/2012  

Riego 1 de 2 del día

Tipo de Riego: **Volumen**

Inicio: **11/01/2012 07:00**

Fin: **11/01/2012 11:36**

Volumen: **12,00 mm**



Sector irrigation scheduling under a specific date can be viewed in this section. This date can be modified by clicking on the calendar icon  located next to the date, or by modifying it directly.



Programación de Riego

 11/01/2012  

Tipo de Riego: Volumen

Inicio: 11/01/2012 07:00

Fin: 11/01/2012 11:36

Volumen: 12,00 mm



Ene 2012

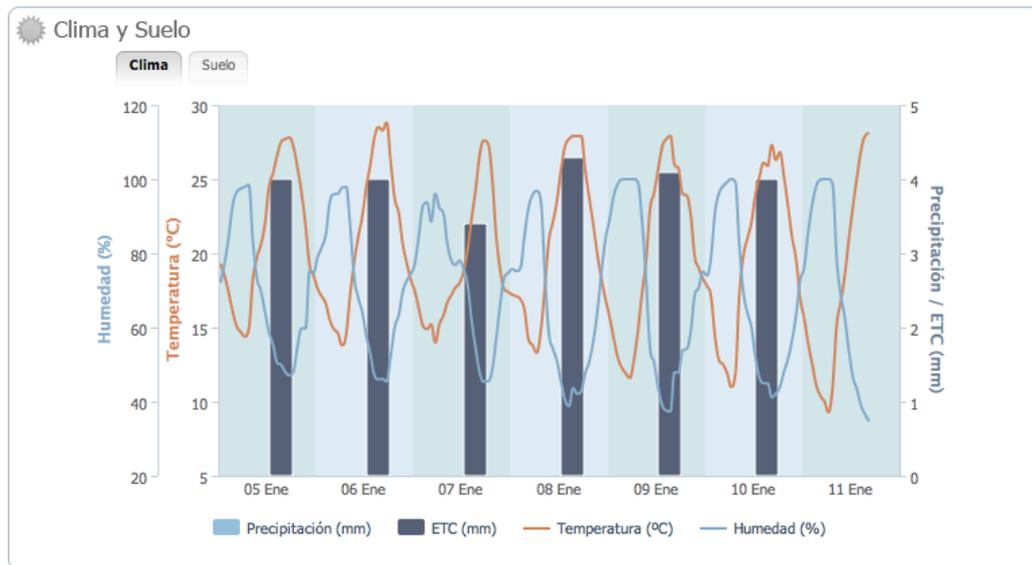
Lu	Ma	Mi	Ju	Vi	Sá	Do
						1
2	3	4	5	6	7	8
9	10	11	12	13	14	15
16	17	18	19	20	21	22
23	24	25	26	27	28	29
30	31					

The icons  and  allows you to browse among the consecutive irrigations, regardless of the day.

Type, start date, end date and volume are displayed for each scheduled irrigation viewed. Name and volume of each of the fertilizers added to the irrigation are also shown.

Lastly, the complete irrigation scheduling for this sector for the date selected can be seen by clicking on the  [ver programación](#) icon.

## Weather and Soil Graph



The data of the sensors located in the sector will be graphically displayed in this section. If there is no such sensor in the sector, the values to be used would be from the same type of sensor as those associated to the field. Data displayed corresponds to the last 7 days. Weather graph data are:

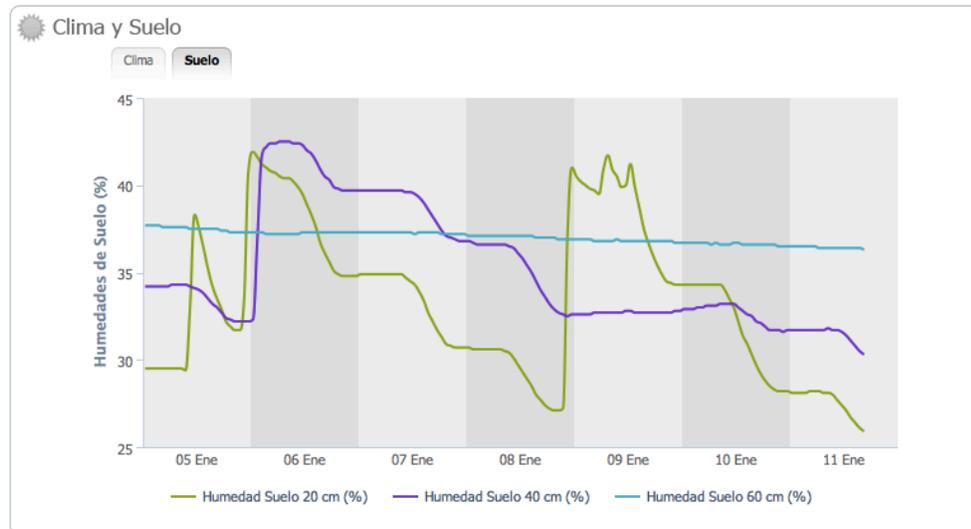
- Precipitations (mm)
- ETC (mm)
- Temperature (°C)
- Moisture (%)

You have to click on the “Soil” tab to view the data of the soil sectors.



Soil graph is displayed, soil graph data being:

- All soil moisture levels (%) that have a sector associated sensor (or by default, field associated)



## Alarms

This page provides a list of all the sector alarms and / or hydraulic components associated to the user account.

<http://www.dropcontrol.cl/site/alarma/catalogoAlarma.do>

**Cuenta Soc. Agrícola Mapulhue LTDA**  
Alarmas

Usuario Piloto Mapulhue ... SALIR ✕

Hoy: 26 de julio de 2012

🔍 Buscador de Alarma

Desde:  Hasta:  Tipo Alarma:

Campo:  Sector:  Acciones:

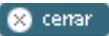
🔔 Alarmas 🔄 refrescar

Fecha Hora	Campo	Tipo - Sector / Componente	Detalle	Acciones
01/03/2012 22:30:33	Mapulhue	Alarma Hidráulica - Bomba Kiwis	Caudal Bomba - Alarma Baja	
01/03/2012 20:23:45	Mapulhue	Alarma Hidráulica - Fuente de Agua Piscina	Nivel bajo - Alarma Baja	
01/03/2012 17:43:55	Mapulhue	Alarma Hidráulica - Fuente de Agua Piscina	Nivel bajo - Alarma Baja	
01/03/2012 15:11:11	Mapulhue	Alarma Hidráulica - Fuente de Agua Piscina	Nivel bajo - Alarma Baja	

A search of alarms raised in user account or in a set field may be made, filtering by the following parameters:

- Date from - to
- Field
- Sector
- Alarm type
- Actions

Date/time of generation, field and sector in which it was generated, type of alarm or warning and its description is displayed for each alarm.

These alarms can also be closed by clicking on the  icon. On closing an alarm, it will not be displayed again in any section of the private site.



[soporte@wiseconn.cl](mailto:soporte@wiseconn.cl)

December 2011

Viña del Mar - Chile

The software interface, specifications and options are subject to change with no prior notice.