

Go-1 Boomerang Manual



PROGRAMMING BOOMERANGS

FROM THE GO-1

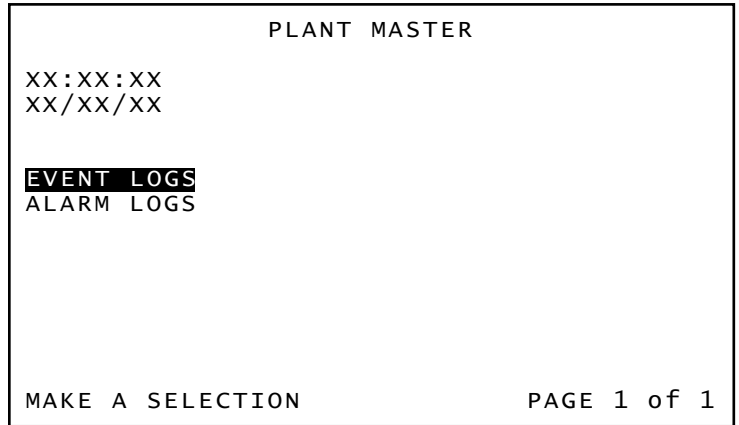
INTRODUCTION

This guide is more of a tutorial than a manual. It is designed to get you, the GO-1/ Boomerang user, comfortable using some of the basic features of your new system.

To work with Boomerangs on the GO-1, you first need to know how to get to the screen called
MAIN MENU – BOOMERANG NETWORK

**Getting to
MAIN MENU - BOOMERANG NETWORK**

Everything begins at the PLANT MASTER screen

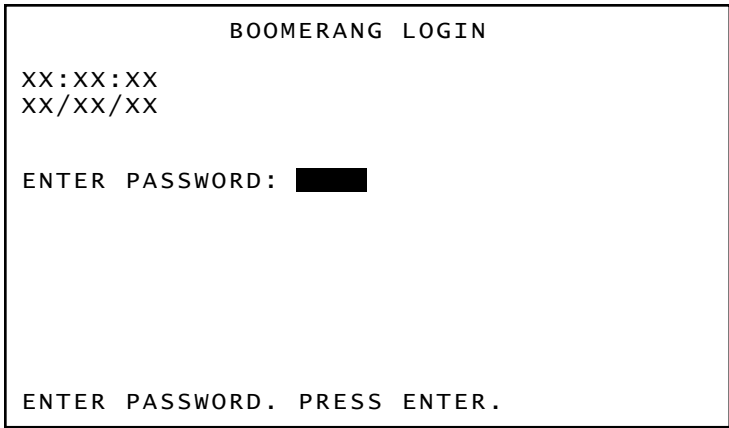


The Plant Master Screen



Press

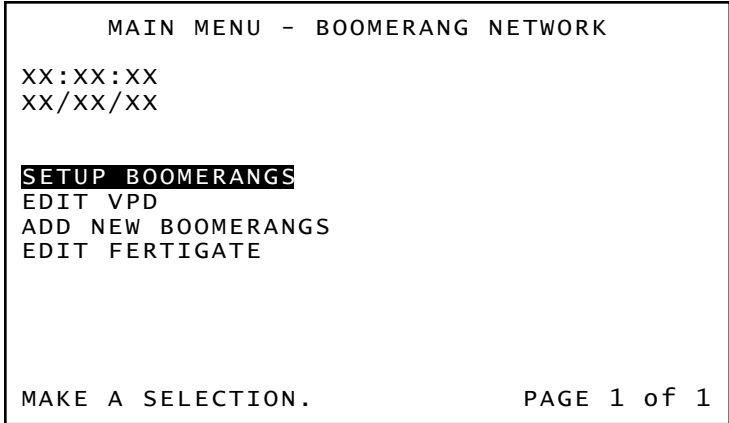
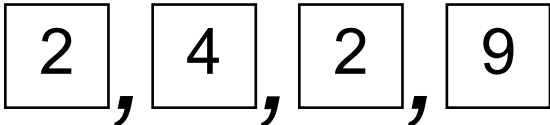




The Boomerang Login Screen



Type the default 4-digit password



Main Menu-Boomerang Network

WATERING

If we want to use the GO-1 to control boomerang watering, there are three things that we need to tell it. *Where* to water, *how much* to water, and *when* to water.

Where to Water

Here's the way things are set up:

- ▶ Each GO-1 has several boomerangs
- ▶ Each Boomerang has 1 or 2 crops
- ▶ Each crop has a specific location on its boomerang: top tier, bottom tier, or both

*The GO-1 doesn't think about individual baskets; it thinks about **crops**:*

*A **crop** is a group of baskets on one Boomerang that all get the same amount of water, at the same time.*

Baskets with similar water needs should be combined into one crop.

Working with the GO-1 is easier if you also mentally group baskets this way.



So to tell the GO-1 where to water, we must tell it:

- ▶ Which Boomerang to talk to
- ▶ Which crop to talk about
- ▶ Where this crop is

We will try to use an example to make things clearer.

```
MAIN MENU - BOOMERANG NETWORK
```

```
XX:XX:XX  
XX/XX/XX
```

```
SETUP BOOMERANGS  
EDIT VPD  
ADD NEW BOOMERANGS  
EDIT FERTIGATE
```

```
MAKE A SELECTION.
```

```
PAGE 1 of 1
```

Example

Joe Smith wants to program his first boomerang using his brand new GO-1. He wants Boomerang 1 to have two (2) crops, one on the top tier, and one on the bottom.

Joe Smith studiously follows the following steps

Telling the GO-1 WHERE TO WATER

Get to MAIN MENU – BOOMERANG NETWORK

STEP

1

Press

ENTER

```
MAIN MENU - BOOMERANG NETWORK
XX:XX:XX
XX/XX/XX

SETUP BOOMERANGS
EDIT VPD
ADD NEW BOOMERANGS
EDIT FERTIGATE

MAKE A SELECTION. PAGE 1 of 1
```

The 'Main Menu-Boomerang Network' Screen

```
CHOOSE A BOOMERANG
XX:XX:XX
XX/XX/XX

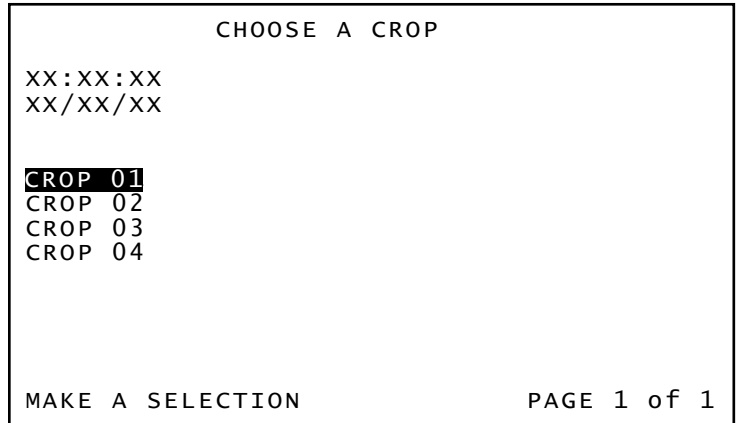
BOOMERANG 01
BOOMERANG 02
BOOMERANG 03

MAKE A SELECTION PAGE 1 of 1
```

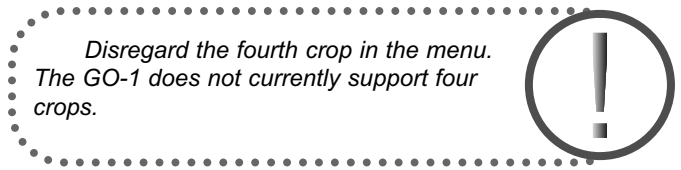
The 'Choose-a-Boomerang' Screen

STEP 2

Press

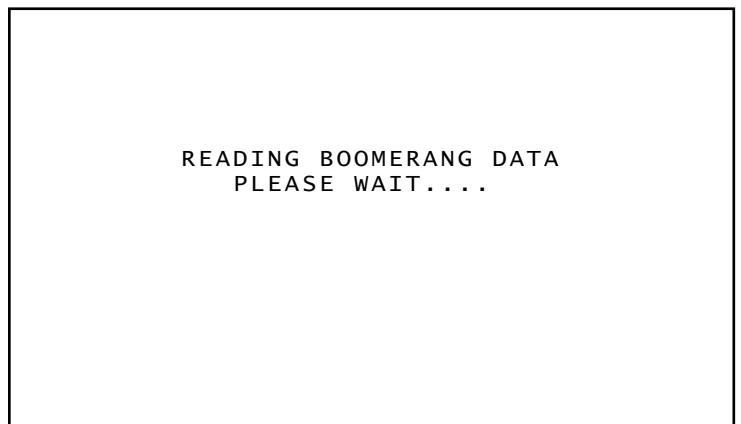


The 'Choose-a-Crop' Screen



STEP 3

Press



The 'Talking to Boomerang' Screen

STEP 4

Wait 5 seconds

```
BOOMERANG CROP INFO  
XX:XX:XX  
XX/XX/XX  
  
BOOM NAME: UNIT 01  
CROP NUMBER: 01  
CROP NAME: CROP 01  
VALVES: 12  
WATER TIME: XX SEC  
SPEED 12  
  
ENTER TEXT.
```

The 'Boomerang Crop Info' Screen

STEP 5

Press

NEXT

```
BOOMERANG CROP INFO  
XX:XX:XX  
XX/XX/XX  
  
BOOM NAME: UNIT 01  
CROP NUMBER: 01  
CROP NAME: CROP XX  
VALVES: ■  
WATER TIME: XX SEC  
SPEED 12  
  
ENTER TEXT.
```

The 'Boomerang Crop Info' Screen

STEP 6

Press

1

Joe should press [2] for the second crop, Crop 2, since it's on the bottom tier

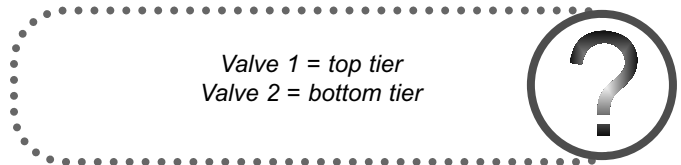



```
BOOMERANG CROP INFO
XX:XX:XX
XX/XX/XX

BOOM NAME: UNIT 01
CROP NUMBER: 01
CROP NAME: CROP XX
VALVES: 1
WATER TIME: XX SEC
SPEED 12

ENTER TEXT.
```

The 'Boomerang Crop Info' Screen



By following the instructions thus far, Joe has just finished telling the GO-1 *where to water* by telling it:

- ▶ *Which Boomerang to talk to*

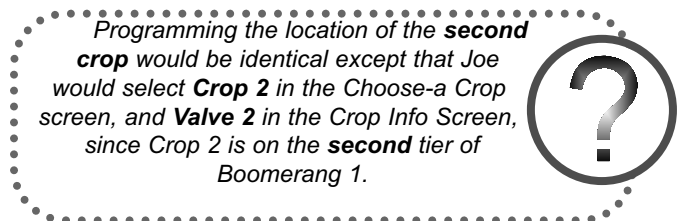
By selecting a Boomerang on the 'Select-a-Boomerang' screen

- ▶ *Which crop to talk about*

By selecting a Crop on the 'Select-a-Crop' screen

- ▶ *Where this crop is*

By selecting Valve 1 (= top tier) in the 'Boomerang Crop Info' screen.



So now the GO-1 knows that it needs to talk to Boomerang 1 about Crop 1, and that Crop 1 is located on Boomerang 1's first tier.

The Example will be continued...

We've dealt with *where* to water, now we have to tell the GO-1 *how much* to water:

Even though we talk about baskets here, keep in mind that the GO-1 thinks about crops, so any settings we enter apply to every basket in the crop



How Much to Water

How much water gets into a basket depends on two things:

- ▶ *How fast the basket is moving*
- ▶ *How long the water flow stays on*

So we have two parameters for you, the grower, to set:

- ▶ Speed
- ▶ Water Time

*fast basket + short water time =
not much water in the basket*

*slow basket + long watering time =
lots of water in the basket*

*fast basket + long water time =
not much water in the basket,
lots of water on the floor*



Example, part 2

Joe wants to tell it *how much* to water.

Once again, Joe scrupulously follows the directions:

**Telling the GO-1
HOW MUCH TO WATER**

You should still be at the 'Crop Info' Screen, but if you aren't, you know how to get there.

```
BOOMERANG CROP INFO  
  
XX:XX:XX  
XX/XX/XX  
  
BOOM NAME: UNIT 01  
CROP NUMBER: 01  
CROP NAME: CROP XX  
VALVES: 1  
WATER TIME: XX SEC  
SPEED 12  
  
ENTER TEXT.
```

The 'Boomerang Crop Info' Screen

STEP 1

Press

NEXT

STEP 2

Type

0, 3

STEP 3

Press

NEXT

```
BOOMERANG CROP INFO  
  
XX:XX:XX  
XX/XX/XX  
  
BOOM NAME: UNIT 01  
CROP NUMBER: 01  
CROP NAME: CROP XX  
VALVES: 1  
WATER TIME: 00 SEC  
SPEED 12  
  
ENTER TEXT.
```

```
BOOMERANG CROP INFO  
  
XX:XX:XX  
XX/XX/XX  
  
BOOM NAME: UNIT 01  
CROP NUMBER: 01  
CROP NAME: CROP XX  
VALVES: 1  
WATER TIME: 03 SEC  
SPEED 00  
  
ENTER TEXT.
```

The 'Boomerang Crop Info' Screen

STEP 4

Type

1, 2

STEP 5

Press

NEXT

```
BOOMERANG CROP INFO
XX:XX:XX
XX/XX/XX

BOOM NAME: UNIT 01
CROP NUMBER: 01
CROP NAME: CROP 01
VALVES: 12
WATER TIME: XX SEC
SPEED 12

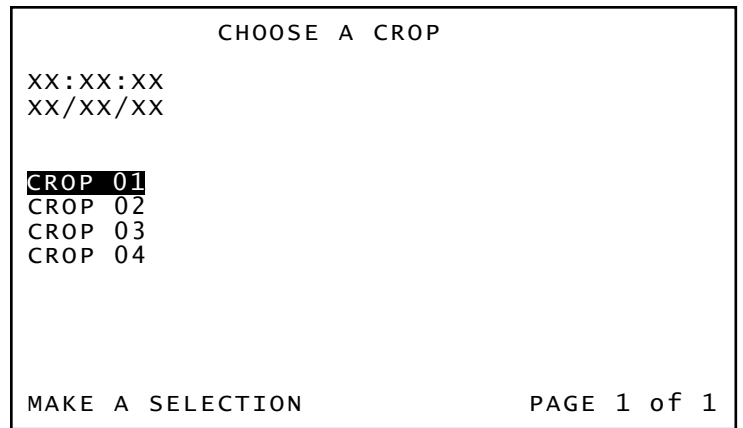
ENTER TEXT.
```

The 'Boomerang Crop Info' Screen

STEP 6

Press

ENTER

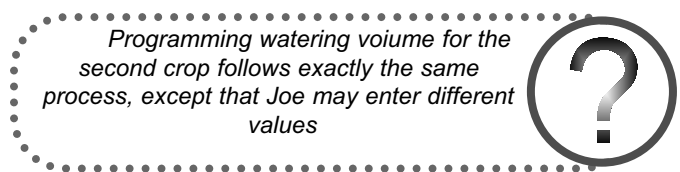


The 'Choose-a-Crop' Screen

Now the GO-1 knows how much to water, because Joe just specified:

- ▶ Speed (*= how fast the basket is moving*)
- ▶ Water Time (*= how long the water flow stays on*)

The GO-1 knows to move the baskets at speed 12, and keep the water running for 3 seconds as the basket moves under the nozzle



The Example will be continued...

We've dealt with *where* to water, and *how much* to water; finally, the last thing we need to tell the GO-1 is *when* to water.

When to Water

There are several ways to use the GO-1 to tell the Boomerang when to water. We deal here with just two of them– the most basic and essential:

- ▶ Using the GO-1 to tell the boom to water *right now*
- ▶ Using the GO-1 to *schedule* the boom to water *at some future time*

We have two settings corresponding to these two uses:

- ▶ Manual Watering
- ▶ Timed Normal Watering

But before we can work with ways of timing watering, we need to get to the right screen- the 'Boomerang Station Setup' screen.

If you want the Boomerang to water only when you personally tell it to (through the GO-1), use Manual Watering



Sometimes you want to schedule the Boomerang to water when you aren't in the greenhouse (or at the GO-1). That's what Timed Normal Watering is for




Example, part 3

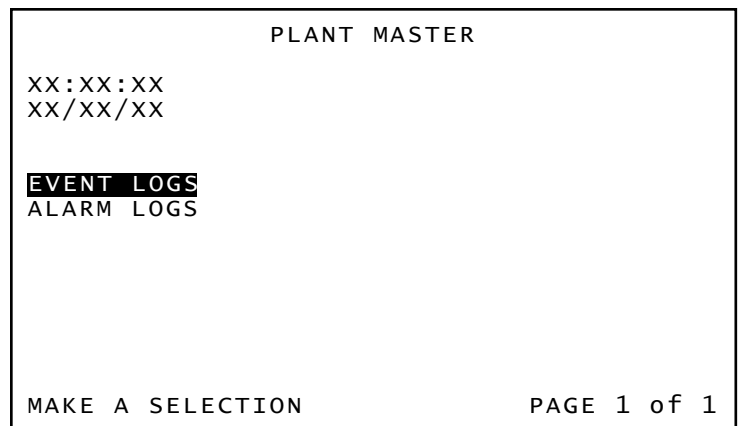
Joe wants to tell his GO-1 when to water Boomerang 1's Crop 1 (or rather, he wants to tell his GO-1 when to tell the Boomerang to water). But first he needs to get to the 'Boomerang Station Setup' screen for Crop 1:

Getting to BOOMERANG STATION SETUP



Press  as many times as it

takes to get back to the 'Plant Master' Screen.



STEP 2

Get to the 'Main Menu-Boomerang Network' screen (see the beginning of the manual for instructions).

```
MAIN MENU - BOOMERANG NETWORK
XX:XX:XX
XX/XX/XX

SETUP BOOMERANGS
EDIT VPD
ADD NEW BOOMERANGS
EDIT FERTIGATE

MAKE A SELECTION. PAGE 1 of 1
```

Main Menu-Boomerang Network

STEP 3

Press

NEXT

```
MAIN MENU - BOOMERANG NETWORK
XX:XX:XX
XX/XX/XX

SETUP BOOMERANGS
EDIT VPD
ADD NEW BOOMERANGS
EDIT FERTIGATE

MAKE A SELECTION. PAGE 1 of 1
```

Main Menu-Boomerang Network

STEP 4

Press

ENTER

```
CHOOSE A BOOMERANG  
  
XX:XX:XX  
XX/XX/XX  
  
BOOMERANG 01  
BOOMERANG 02  
BOOMERANG 03  
  
MAKE A SELECTION PAGE 1 of 1
```

The 'Choose-a-Boomerang' Screen

STEP 5

Press

ENTER

```
CHOOSE A CROP  
  
XX:XX:XX  
XX/XX/XX  
  
CROP 01  
CROP 02  
CROP 03  
CROP 04  
  
MAKE A SELECTION PAGE 1 of 1
```

The 'Choose-a-Crop' Screen

STEP 6

Press

ENTER

```
READING BOOMERANG DATA  
PLEASE WAIT....
```

The 'Talking to Boomerang' Screen

STEP 7

Wait 5 seconds

```
BOOMERANG STATION SETUP  
  
XX:XX:XX  
XX/XX/XX  
  
BOOM: UNIT XX          CROP: CROP XX  
WATER: NORM          TARGET MODE: FIXED  
WATER MAIN: MAIN XX  
WATER MODE: TIMED  
DISABLE: INACTIVE  
  
PAGE 1 OF 2  
  
USE ARROW KEYS TO SELECT
```

The 'Boomerang Station Setup' Screen, page 1

This is the screen you use to tell the GO-1 *when* to water.

DONE

Example, part 4

Joe wants to use Manual Watering on Boomerang 1's Crop 1

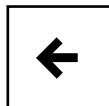
Telling the Boomerang to water *now*
FROM THE GO-1

a.k.a., *using the Manual Watering setting*

Get to the 'Boomerang Station Setup' screen.



Press



```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
WATER: NORM          TARGET MODE: FIXED
WATER MAIN: MAIN XX
WATER MODE: TIMED
DISABLE: INACTIVE

PAGE 1 OF 2

USE ARROW KEYS TO SELECT
```

The 'Boomerang Station Setup' Screen, page 1

```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
WATER: MANUAL WATER TARGET MODE: FIXED
WATER MAIN: MAIN XX
WATER MODE: TIMED
DISABLE: INACTIVE

PAGE 1 OF 2

USE ARROW KEYS TO SELECT
```

The 'Boomerang Station Setup' Screen, page 1

STEP 2

Press

ENTER

```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
TIMED WATERING: 00:00:00
CROP MODEL: NONE
TARGET: INACTIVE
DISABLE MODEL: NONE

PAGE 2 OF 2

ENTER TIME IN HRS:MIN:SEC FORMAT
```

The 'Boomerang Station Setup' Screen, page 2

STEP 3

Press

ENTER

```
CHOOSE A CROP

XX:XX:XX
XX/XX/XX

CROP 01
CROP 02
CROP 03
CROP 04

MAKE A SELECTION PAGE 1 of 1
```

The 'Choose-a-Crop' Screen

Boomerang 1 should be watering Crop 1 momentarily, if it hasn't started already.

DONE

Example, part 5

After using Manual Watering for a few days while he fine-tuned the volume of water dispensed at each watering, Joe wants to use the Timed Normal Watering setting. He wants to schedule a watering for 6:00 AM every Morning.

Scheduling Irrigation FROM THE GO-1

Start at page 1 of the 'Boomerang Station Setup' screen



Press  three times

NOTE: The highlighted field may say "VPD". If it does, press either of the arrow keys to change it to "TIMED"

```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
WATER: NORM          TARGET MODE: FIXED
WATER MAIN: MAIN XX
WATER MODE: TIMED
DISABLE: INACTIVE

PAGE 1 OF 2

USE ARROW KEYS TO SELECT
```

The 'Boomerang Station Setup' Screen, page 1

```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
WATER: NORM          TARGET MODE: FIXED
WATER MAIN: MAIN XX
WATER MODE: VPD
DISABLE: INACTIVE

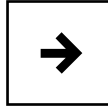
PAGE 1 OF 2

USE ARROW KEYS TO SELECT
```

The 'Boomerang Station Setup' Screen, page 1

STEP 2

Look at the highlighted field; if it doesn't say "TIMED" press



```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
WATER: NORM           TARGET MODE: FIXED
WATER MAIN: MAIN XX
WATER MODE: TIMED
DISABLE: INACTIVE

PAGE 1 OF 2

USE ARROW KEYS TO SELECT
```

The 'Boomerang Station Setup' Screen, page 1

STEP 3

Press



```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
TIMED WATERING: 00:00:00
CROP MODEL: NONE
TARGET: INACTIVE
DISABLE MODEL: NONE

PAGE 2 OF 2

ENTER TIME IN HRS:MIN:SEC FORMAT
```

The 'Boomerang Station Setup' Screen, page 2

STEP 4

Type 0, 6, 0,
0, 0, 0

STEP 6

Press ENTER

DONE

```
BOOMERANG STATION SETUP
XX:XX:XX
XX/XX/XX

BOOM: UNIT XX          CROP: CROP XX
TIMED WATERING: 06:00:00
CROP MODEL: NONE
TARGET: INACTIVE
DISABLE MODEL: NONE

PAGE 2 OF 2

ENTER TIME IN HRS:MIN:SEC FORMAT
```

The 'Boomerang Station Setup' Screen, page 2

```
CHOOSE A CROP
XX:XX:XX
XX/XX/XX

CROP 01
CROP 02
CROP 03
CROP 04

MAKE A SELECTION PAGE 1 of 1
```

The 'Choose-a-Crop' Screen

Telling the GO-1 when to water Crop 2 is identical. Also, each crop may have a different watering setting, i.e. one manual, one timed.

