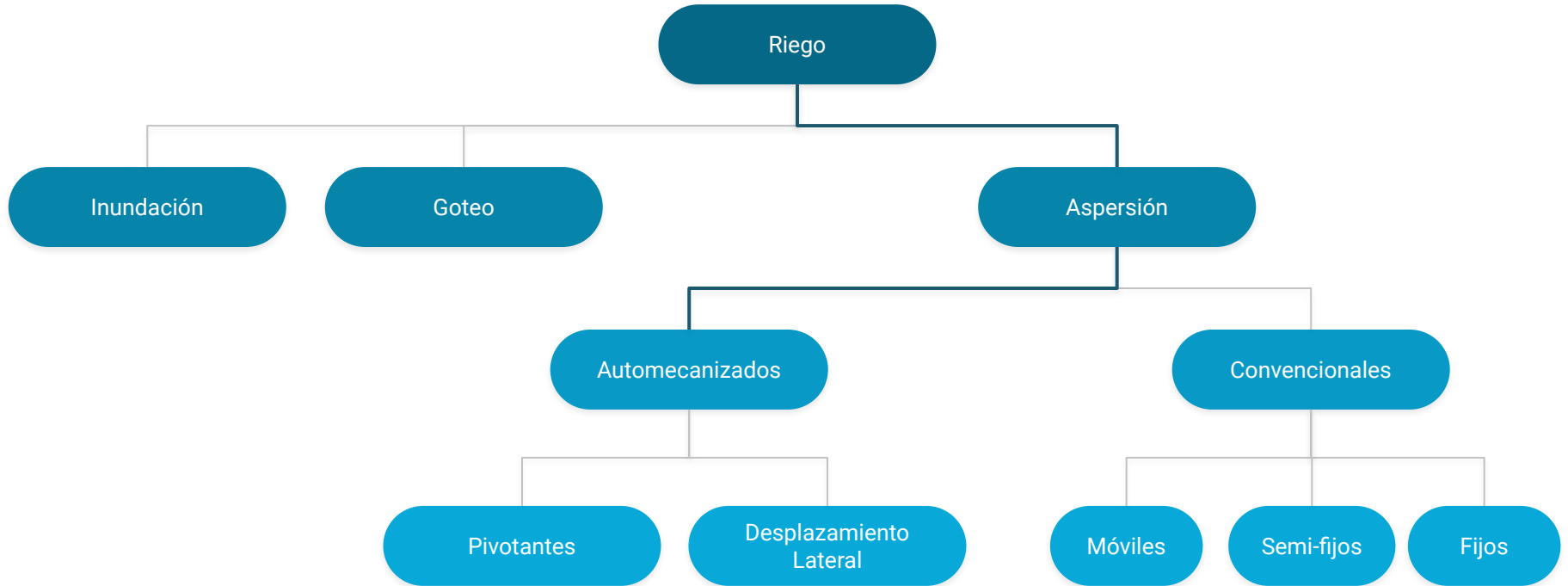


# MANEJO DE SISTEMAS DE RIEGO POR PIVOTE



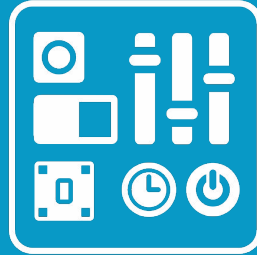
# RIEGO, CLASIFICACIÓN



# TIPO DE MANEJOS EN UN PIVOT



CALIBRACIÓN



OPERATIVO



MANTENIMIENTO





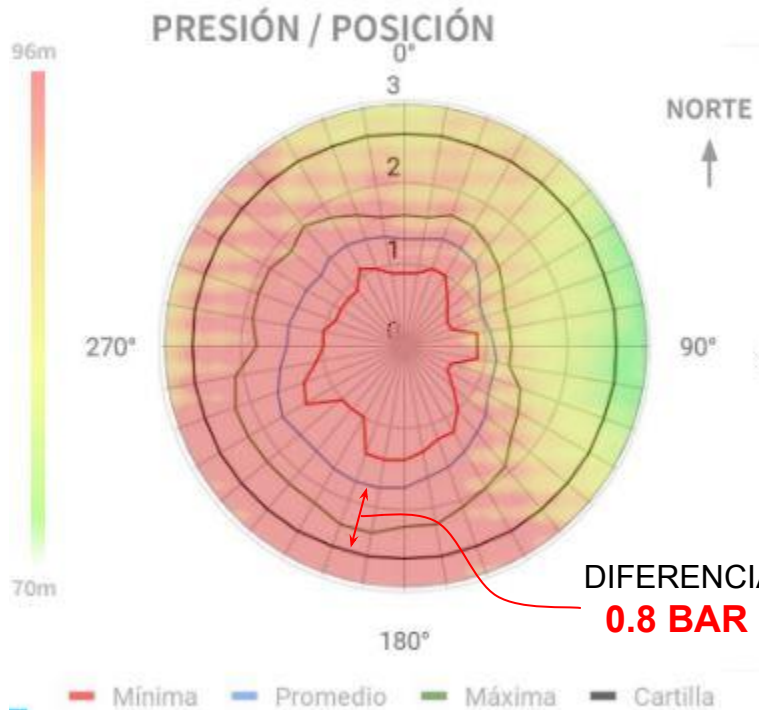
## PLUVIOMETRÍA

- CAUDAL BOMBA
- PÉRDIDA DE CARGA
- CONFIGURACIÓN DEL PIVOT
- BAJANTES
  - MANGUERA
  - REGULADOR
  - ASPERSOR
  - BOQUILLA
  - DIFUSOR



**CARTA DE  
ASPERSIÓN**





DIFERENCIA CARTILLA:  
0.8 BAR (11.6 PSI)

Span and Overhang

Model	Qty	Length (m)	Pipe O.D. (in)	Coupler Spacing (in)	D. U.		
					Qty	Profile	Tire
Gen 2	8	54.56	6 5/8	90	25	Standard	14.9 x 24 High Float
Gen 2	1	26.82	5 9/16	90	12		

Field Area	Flow
<b>74.87 (HA) Total</b>	<b>139.9 (Cu. m per hr)</b>
67.66 (HA) Pivot 360°	0.519 (LPS per HA)
7.2 (HA) EG on 100%	4.6 (mm per day) App Rate
464.09 (m) Machine Length	3.23 (mm) App Depth @ 100%
24.05 (m) End Gun Radius	14.51 (Cu. m End Gun per hr)

Pressure	LRDU Drive Train
<b>37 (PSI) Pivot Pressure</b>	<b>43 RPM Center Drive @ 50 Hz freq.</b>
27 (PSI) = End Pressure	14.9 x 24 High Float Tire
0.0 (m) Highest Elevation	52:1 Wheel GB Ratio, LRDU Dist 437.27 (m)
0.0 (m) Lowest Elevation	17.3 Hrs/360° @ 100%      2.649 (M per Min)

Sprinkler Configuration	Range (m)
Valley U-Pipe 6(in) Galvanized 3/4 M NPT x 3/4 F NPT	<b>Outlets</b>
Black Hose Drop Variable Length 60(in) Ground Clr	7,25
Valley Regulator PSR-2 15(PSI) 3/4 F NPT	27,50
Nelson D3000 Integrated Weight 1.00	52,75
Nelson D3000 Flat 24 - Gray 3/4 M NPT	77,100
	102,125
	127,150
	152,175
	177,200
	202,212



437.27		Tower Number : 8		Span Length(m) : 54.56		SPK		REGULADOR		LINE	SPK	RQD	ACT
										PSI	PSI	m <sup>3</sup> /h	m <sup>3</sup> /h
201	438.61	<b>Plug</b>											
202	440.89	<b>188</b>	5.09	<b>35</b>	<b>Dk Green/Purple</b>	D3000	Gray	96	PSR-2 15A	29.6	15.9	1.88	1.93
203	443.12	<b>189</b>	2.23	<b>27</b>	<b>White/Blue</b>	D3000	Gray	99	PSR-2 15A	29.4	16.3	1.16	1.16
204	445.34	<b>190</b>	2.23	<b>27</b>	<b>White/Blue</b>	D3000	Gray	103	PSR-2 15A	29.3	16.3	1.16	1.16
205	447.6	<b>191</b>	2.23	<b>27</b>	<b>White/Blue</b>	D3000	Gray	106	PSR-2 15A	29.2	16.3	1.18	1.16
206	449.88	<b>192</b>	2.29	<b>27</b>	<b>White/Blue</b>	D3000	Gray	110	PSR-2 15A	29.0	16.3	1.18	1.16
207	452.05	<b>193</b>	2.19	<b>27</b>	<b>White/Blue</b>	D3000	Gray	113	PSR-2 15A	28.9	16.3	1.16	1.16
208	454.3	<b>194</b>	2.23	<b>27</b>	<b>White/Blue</b>	D3000	Gray	117	PSR-2 15A	28.8	16.3	1.18	1.16
209	456.53	<b>195</b>	2.23	<b>28</b>	<b>Blue</b>	D3000	Gray	120	PSR-2 15A	28.6	16.3	1.18	1.25
210	458.75	<b>196</b>	2.23	<b>27</b>	<b>White/Blue</b>	D3000	Gray	124	PSR-2 15A	28.5	16.3	1.2	1.16
211	461.01	<b>197</b>	2.23	<b>28</b>	<b>Blue</b>	D3000	Gray	127	PSR-2 15A	28.4	16.3	1.2	1.25
212	463.24	<b>198</b>	2.23	<b>28</b>	<b>Blue</b>	D3000	Gray	131	PSR-2 15A	28.3	16.2	1.23	1.25
464.09		Overhang		Span Length(m) : 26.82									

## > 3000 Series 3TN Nozzle System > Metric Units (LPM)

- Quick-Change
- Color-Coded
- Precision Accuracy
- High Wear Resistance



The nozzle sizing system is based on 128th inch increments, i.e. 3TN Nozzle #22 has an orifice diameter of 22/128th inches while 3TN Nozzle #23 has an orifice diameter of 23/128th inches. Odd numbered nozzles have a color box around the number marking. This color box denotes the color of next larger nozzle size.

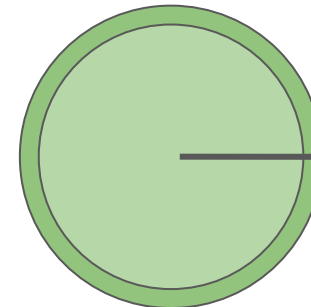
#	#20	#21	#22	#23	#24	#25	#26	#27	#28	#29	#30
Color	Turquoise	Turquoise	Yellow	Yellow	Red	Red	White	White	Blue	Blue	Dark Brown
Stripe		Yellow		Red		White		Blue		Dark Brown	
BAR	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM	LPM
0.4	6.43	6.96	7.72	8.40	9.23	9.99	10.86	<u>11.61</u>	<u>12.68</u>	13.55	14.49
0.7	8.28	9.00	9.99	10.82	11.96	12.90	14.00	15.00	16.35	17.48	18.69
1.0	10.18	11.01	12.22	13.24	14.61	15.78	17.14	<u>18.39</u>	<u>20.02</u>	21.42	22.93
1.4	11.73	12.71	14.11	15.32	16.88	18.24	19.79	<u>21.23</u>	<u>23.12</u>	24.71	26.45
1.7	13.13	14.23	15.78	17.10	18.88	20.36	22.14	23.73	25.85	27.63	29.59
2.1	14.38	15.59	17.25	18.77	20.70	22.33	24.26	26.00	28.31	30.28	32.39
2.8	16.61	18.01	19.94	21.65	23.88	25.77	28.00	30.65	32.70	34.97	37.43
3.4	18.54	20.13	22.29	24.22	26.72	28.80	31.33	33.57	36.56	39.13	41.86

**37% MENOR CAUDAL EN TRAMO 8**

200 mm



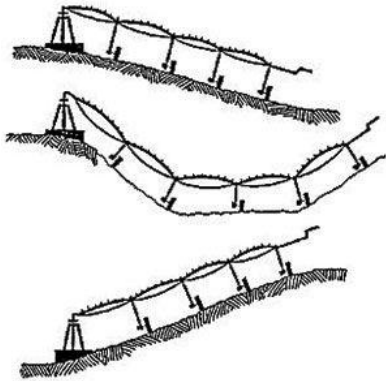
126 mm



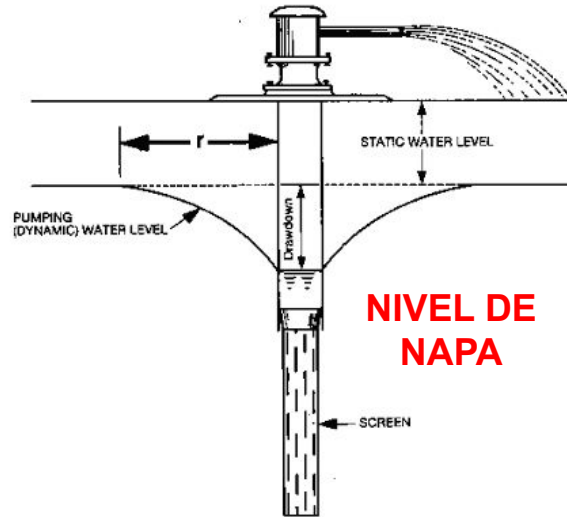
**23.4% DE LA SUPERFICIE DEL LOTE**



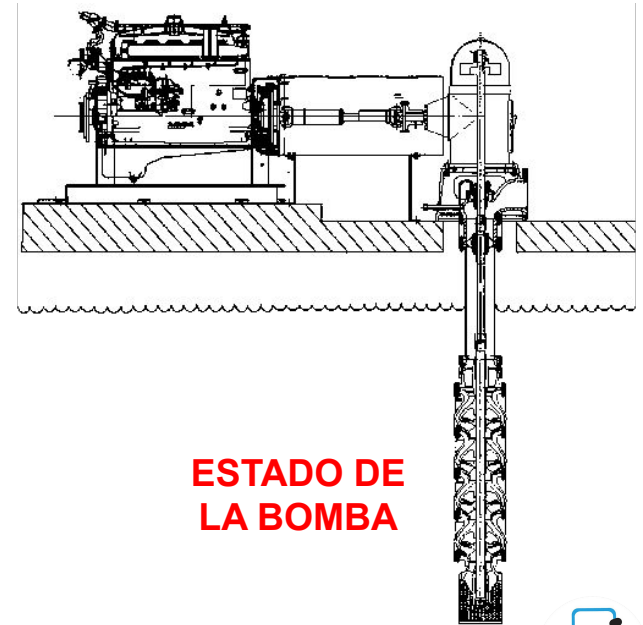
# QUÉ AFECTA LA PRESIÓN DE MI PIVOT?



**ALTURA DEL LOTE**



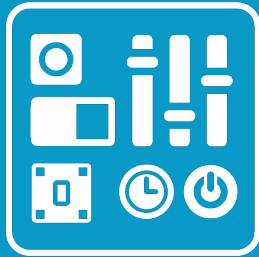
**SETEO DEL MOTOR**



## OTROS

- CAMBIOS DE PLUVIOMETRÍA
- PÉRDIDAS





OPERATIVO

### ESTADO

- RIEGO
- MOVIMIENTO
- APAGADO

### SENTIDO DE GIRO

### VELOCIDAD DE GIRO

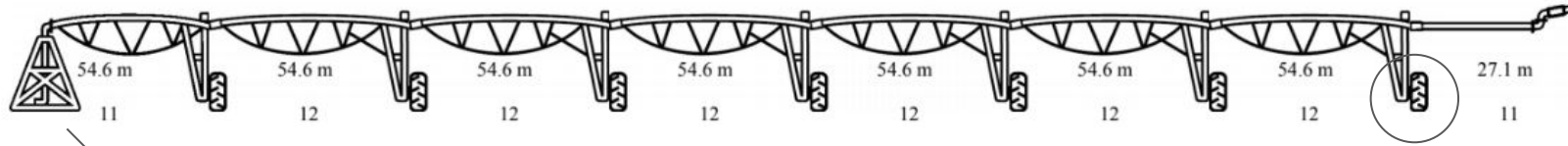
- DISTANCIA A ÚLTIMA TORRE
- VELOCIDAD MOTORREDUCTOR
- DIÁMETRO CUBIERTAS



REGADOR  
OPERADOR







Área 52.8 ha  
Caudal 145.19 m<sup>3</sup>/h

### Circle Degree 360

<u>Depth</u>	<u>Timer</u>	<u>Rotation</u>
4.25 mm	100.00%	15.5hrs
5.08 mm	83.74%	18.5hrs
7.62 mm	55.83%	27.7hrs
10.16 mm	41.87%	36.9hrs
12.70 mm	33.50%	46.2hrs
15.24 mm	27.91%	55.4hrs
17.78 mm	23.93%	64.7hrs
20.32 mm	20.94%	73.9hrs
22.86 mm	18.61%	83.1hrs
25.40 mm	16.75%	92.4hrs
31.75 mm	13.40%	115.5hrs
38.10 mm	11.17%	138.6hrs
50.80 mm	8.37%	184.7hrs
63.50 mm	6.70%	230.9hrs

Distancia a última torre 382.73 m  
Tamaño de neumático 14.9 x 24  
Velocidad de motor cargado (RPM) 1440  
Reducción de motorreductor 40:1  
Reducción de rueda 50:1



SYSTEM MANUFACTURER: LINDSAY END GUN RADIUS: --  
 TOTAL PIPE LENGTH: 409.8 M IRRIGATED AREA: 53.0 ha  
 TOTAL SYSTEM FLOW: 145.0 m<sup>3</sup>/hr

Motor Speed: (not entered) Center Drive Speed: 43 RPM  
 Center Gear Ratio: (not entered) Wheel Gear Ratio: 50:1  
 Nominal Tire Size: 14.9 x 24 Loaded Tire Radius: 57.1 cm

Last Tower Ground Speed at 100% Timer Setting: 3.09 m/min

WATER APPLICATION DEPTH PER REVOLUTION

Water Application (mm)	Timer Setting (%)	Last Tower Ground Speed (m/min)	Time Per Revolution (hrs)
3.55	100.0	3.09	12.99
3.95	90.0	2.78	14.43
4.44	80.0	2.47	16.24
5.08	70.0	2.16	18.56
5.47	65.0	2.01	19.98
5.92	60.0	1.85	21.65
6.46	55.0	1.70	23.62
7.11	50.0	1.54	25.98
7.90	45.0	1.39	28.87
8.89	40.0	1.23	32.47
10.16	35.0	1.08	37.11
11.85	30.0	0.93	43.30
14.22	25.0	0.77	51.96
17.77	20.0	0.62	64.95
23.70	15.0	0.46	86.60
29.62	12.0	0.37	108.25
39.50	9.0	0.28	144.33
59.25	6.0	0.19	216.50
118.49	3.0	0.09	433.00

The relationships between water application, timer setting and pivot speed provided above are theoretical. Actual application rates may vary due to the following: tire slippage, tire inflation and tread wear; variations in terrain and soils; wind drift; evaporation; and drive train efficiency. For this reason the above data are intended only as a guide and should be used with due caution.

La relación entre agua aplicada, seteo del timer y velocidad de pivot provista arriba es teórica. La aplicación real puede variar debido a:

- Deslizamiento de neumáticos
- Inflado de neumáticos y desgaste
- Variaciones en el terreno y suelos
- Deriva del viento
- Evaporación
- Eficiencia del tren de impulso

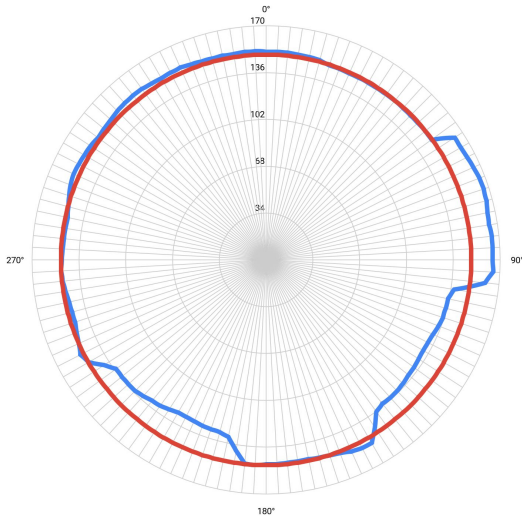
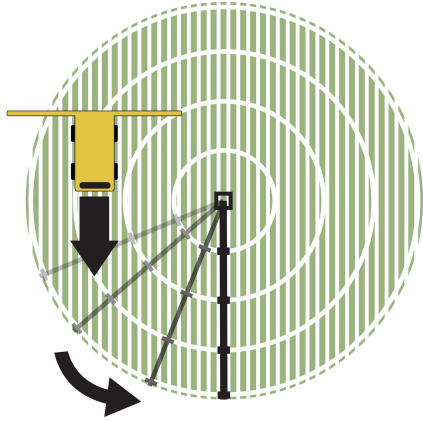
Por esta razón, los valores de arriba deben tomarse sólo como guía y deben ser utilizados con la debida precaución.

## ACLARACIÓN EN LAS CARTAS DE ASPERSIÓN

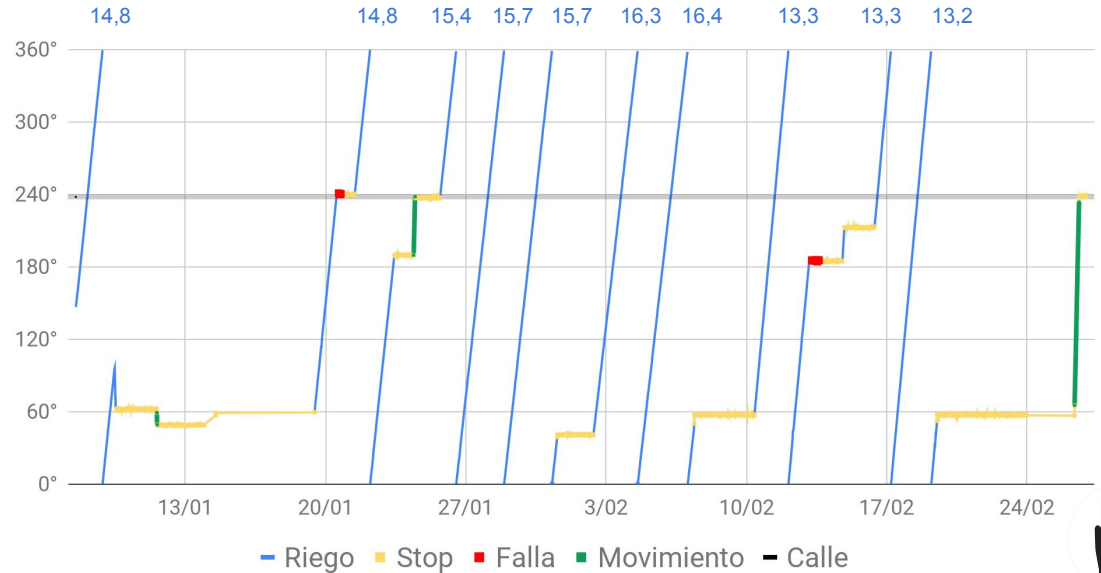


# HOMOGENEIDAD EN LA OPERACIÓN

## CAMBIOS DE VELOCIDAD Y MOVIMIENTOS SIN AGUA



- Lámina real - Intención de Lámina



# CUÁNTO AFECTA ESTO A MI INTENCIÓN DE RIEGO?

Pasada	1	2	3	4	5	6	7	8	9	10	11	12	TOTAL
Seteo [mm]	15	12	12	12	12	17	17	16	16	18	17	17	181
Real [mm]	16.5	13.2	13.2	13.2	13.2	18.7	18.7	17.6	17.6	19.8	18.7	18.7	199.1

**LA DIFERENCIA PROMEDIO ENTRE LA INTENCIÓN DE APLICACIÓN Y LA REAL ES DEL **10%****





## MANTENIMIENTO

### PREVENTIVO

- Puesta a punto del equipo
  - Máxima eficiencia / evitar tiempos muertos
  - Uso confiable / Condiciones seguras
  - Simplicidad de la operación

### EN CAMPAÑA

- Mantenimiento correctivo (imprevistos)
  - Reparaciones
  - Ajustes
- Mantenimiento rutinario (programados)
  - Reemplazo



# Parámetros generales sobre fallas

**3,21**

**FALLAS**  
CADA 100hs DE RIEGO

**9,7** hs.

**DURACIÓN DE FALLAS**



**¡MUCHAS GRACIAS!**

