CACHUMA RESOURCE CONSERVATION DISTRICT

920 E. Stowell Rd. Santa Maria, CA 93534

IRRIGATION SYSTEM EVALUATION

Grower:	Grower Name		
Crop:	Strawberries		
Locations:	Field 1 , Field 2 , Field 3		
Evaluators:	Evaluator Name	**Job No.:**	IWM-XXX
Contact	Contact Name	**Date:**	7/30/2014
Location:	Location	**County:**	County

Co-sponsors:

Department of Water Resources
State of California

Santa Barbara County
Flood Control and Water Conservation District

USDA Natural Resources Conservation Service

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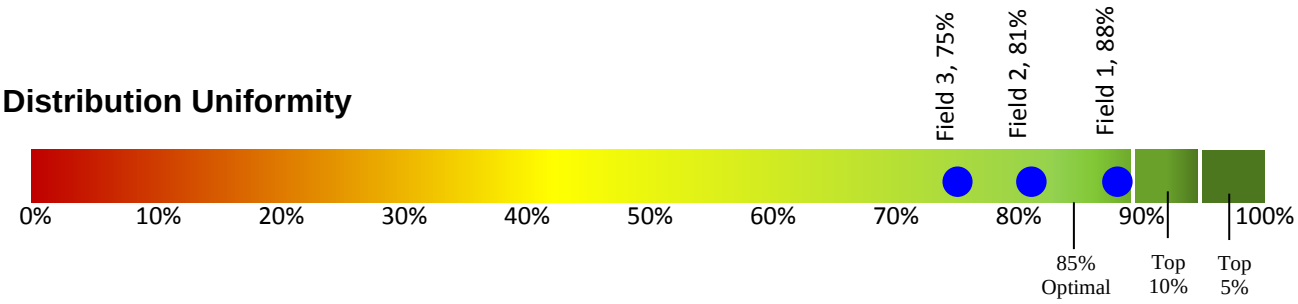
IRRIGATION SYSTEM EVALUATION SUMMARY

Landowner: **Grower Name**
Sites Tested: **Field 1 , Field 2 , Field 3**
Crop: **Strawberries**

Evaluation Description

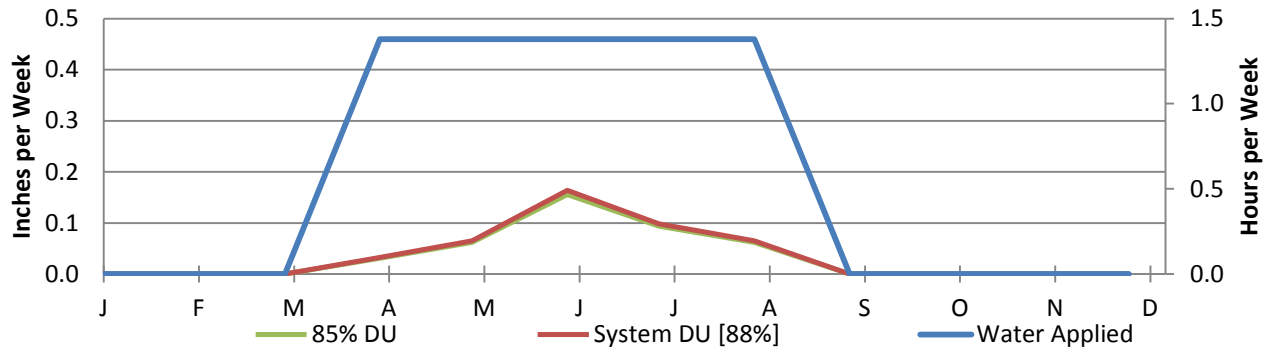
This Irrigation System Evaluation is intended to evaluate the irrigation system for uniform water application and provide suggestions for improving irrigation efficiency.

Distribution Uniformity



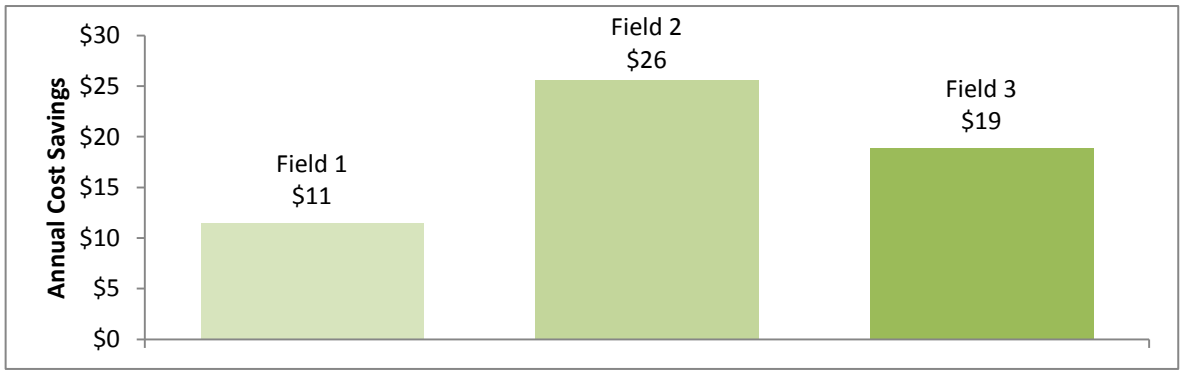
Distribution uniformity is a percentage that is used to evaluate the efficiency of an irrigation system and compare to other systems. Industry standard for drip irrigation systems is 85%. The DU for all of the sites tested are shown on the chart.

Annual Water Demand



Annual water demand is based off of specific recommendations for your site. The graph above compares recommended water application for an industry standard 85% DU system, the average recommended water application for the existing systems, and the average water application rates based on the current scheduling.

Potential Cost Savings



Potential cost savings are based on the annual amount of money that can be saved by upgrading the system to improve water use efficiency or adjusting scheduling to meet demands with less water. The savings is shown for each site tested and is based on the cost of the potential water saved.

SUMMARY OF IRRIGATION SYSTEM EVALUATION

TABLE 1: SUMMARY OF POTENTIAL ANNUAL COST SAVINGS

Test Location	Test Number	Distribution Uniformity for Tested Area	Estimated Impacted Acres	Estimated potential Cost Savings / year
Field 1	IWM-XXX	88	2.00	$10
Field 2	IWM-XXX	81	2.00	$30
Field 3	IWM-XXX	75	2.00	$20
Totals			6.00	$60

POTENTIAL COST SAVINGS

The table above represents potential cost saving if the irrigation system and scheduling are improved per site

POTENTIAL IMPROVEMENTS

Potential improvements that could be implemented on the system are listed below. Site specific recomendations

SYSTEM OBSERVATIONS

Field 1
Strawberries
IWM-XXX

The measured distribution uniformity (DU) of the sprinkler irrigation systems for the above area was 88 percent, compared to a standard of 75 percent which has been accepted as a reasonable level of performance by the irrigation industry and the American Society of

SYSTEM OBSERVATIONS

Field 2
Strawberries
IWM-XXX

The measured distribution uniformity (DU) of the sprinkler irrigation systems for the above area was 88 percent, compared to a standard of 75 percent which has been accepted as a reasonable level of performance by the irrigation industry and the American Society of

SYSTEM OBSERVATIONS

Field 3
Strawberries
IWM-XXX

The measured distribution uniformity (DU) of the sprinkler irrigation systems for the above area was 88 percent, compared to a standard of 75 percent which has been accepted as a reasonable level of performance by the irrigation industry and the American Society of

Sprinkler Irrigation Flow Catch Worksheet

Owner:	Grower Name	IWM File Number:	IWM-XXX
Area:	2.0 acres	Date:	1/1/1901
Location:	Field 1	Irrigation System:	Sprinkler

Catch (ml)	NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NO 10
NO 1	7	10	12							
NO 2										
NO 3										
NO 4										
NO 5										
NO 6										

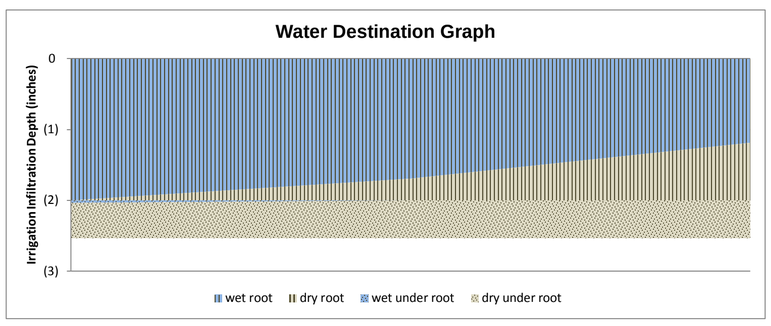
Pressure (psi)	NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NO 10
STA 1	10	8								
STA 2										
STA 3										

Inputs

Catch Duration (min)	1.00	Plant Rows per Bed	1.00
Row Spacing (ft)	1.00	Drip Lines per Bed	1.00
Emitter Spacing (in)	1.00	Bed Width (ft)	1.00

Outputs

Mean Catch	10	ml
Mean Pressure	9	psi
Net Application Rate	0.25	in/hr
Max. Application Rate	0.31	in/hr
Min. Application Rate	0.18	in/hr
Distribution Uniformity (DU)	**88**	**%**
Application Efficiency (AE)	**82**	**%**



NOTES:

CATCH WORKSHEET

The intent of the flow catch worksheet is to record and analyze flow catch testing . The flow catch method requires catch cans to be placed at random locations throughout the field to catch irrigation water. The volume of water is measured in each catch can and then the volumes are analyzed to determine important characteristics about how the system is working including irrigation application rate and distribution uniformity .

CATCHES

The catches section of the worksheet is used to record up to 60 catch can measurements from field testing. Your test for this site used 3 catch cans. The smallest volume collected was 7 ml and the largest volume collected was 12 ml.

PRESSURES

The pressure section of the worksheet contains pressures recorded during the catch test. While pressures are not directly related to the irrigation application of distribution uniformity calculations they do provide good information for system analysis that can help to identify problems and deveklop solutions. Your test for this site included 2 pressure readings. The smallest pressure reading was 8 psi and the largest pressure reading was 10 psi.

INPUTS

Inputs include information about test that are necessary for the calculation of application rate and distribution uniformity.

APPLICATION RATE

Application rate is the amount of irrigation water applied over a period of time calculated from the results of the catch can test. The catch values are converted from ml to inches per hour so that they can be more easily compared to precipitation rates and recommended irrigation rates. See the scheduling sheet for this site for more information on recommended irrigation rates. Variances in the low and high application rates are an indication of the uniformity of the system. Turf in areas of low application rate require more irrigation time than the average area in this site in order to stay healthy. These spots may be yellow or brown if scheduling is set for the average application rate. Turf in areas of high application rate require less irrigation time than the average area in this site in order to have time to properly drain. These spots may be constantly wet if scheduling is set for the average application rate. Minimizing the difference between high and low application rates will result in a healthier turf and more efficient water use.

DISTRIBUTION UNIFORMITY

Distribution uniformity is a single percentage that is used to evaluate the efficency of an irrigation system. It is found by dividing the average of the lowest quarter of catch volumes by the average of all catch volumes. The distribution uniformity value allows for uniform comparison between all set efficencies. In assition, it can be used to estimate scheduling requirements by adjusting irrigation duration to meet the requirements of the areas with lower irrigation aaplicatio rates. The DU for this set was calculated at Plant Rows per Bed%. Industry standard for turf sprinkler irrigastion systemes is 75%.

APPLICATION EFFICIENCY

Application efficency is a single percentage that is used to evaluate the efficency of an irrigation system's scheduling and uniformity. It is found by dividing the average dept of irrigation by the average crop root depth. The application efficency value allows for uniform comparison between all set efficencies. In addition, it can be used to quickly evaluate the uniformity and scheduling of a system with respect to crop demand. The AE for this set was calculated at 82%.

WATER DESTINATION GRAPH

The water destination graph offers a graphical representation of where irrigation water is going on this site. Wet root areas are the goal of an irrigation system. Dry roots may indicate under watering. Wetness under roots is water that is not being used by the turf and is considered wasted by the irrigation system. Good irrigation systems minimize dry root areas and wet areas under the roots.

Sprinkler Irrigation Flow Catch Worksheet

Owner:	Grower Name	IWM File Number:	IWM-XXX
Area:	2.0 acres	Date:	1/1/1901
Location:	Field 2	Irrigation System:	Sprinkler

Catch (ml)	NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NO 10
NO 1	7	7	12							
NO 2										
NO 3										
NO 4										
NO 5										
NO 6										

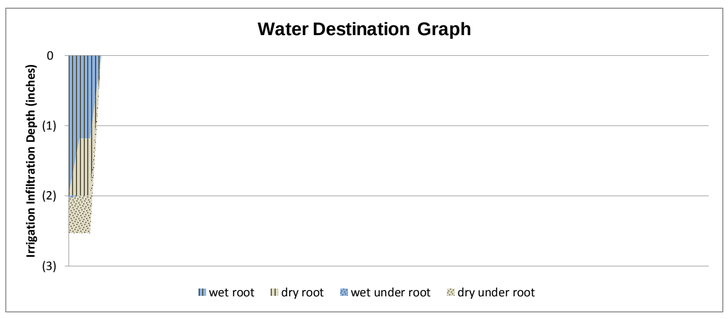
Pressure (psi)	NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NO 10
STA 1	10	10								
STA 2										
STA 3										

Inputs

Catch Duration (min)	1.00	Plant Rows per Bed	1.00
Row Spacing (ft)	1.00	Drip Lines per Bed	1.00
Emitter Spacing (in)	1.00	Bed Width (ft)	1.00

Outputs

Mean Catch.....	=	9	ml
Mean Pressure.....	=	10	psi
Net Application Rate.....	=	0.22	in/hr
Max. Application Rate.....	=	0.31	in/hr
Min. Application Rate.....	=	0.18	in/hr
Distribution Uniformity (DU) =		**81**	**%**
Application Efficiency (AE)		**73**	**%**



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CATCH WORKSHEET

The intent of the flow catch worksheet is to record and analyze flow catch testing . The flow catch method requires catch cans to be placed at random locations throughout the field to catch irrigation water. The volume of water is measured in each catch can and then the volumes are analyzed to determine important characteristics about how the system is working including irrigation application rate and distribution uniformity .

CATCHES

The catches section of the worksheet is used to record up to 60 catch can measurements from field testing. Your test for this site used 3 catch cans. The smallest volume collected was 7 ml and the largest volume collected was 12 ml.

PRESSURES

The pressure section of the worksheet contains pressures recorded during the catch test. While pressures are not directly related to the irrigation application of distribution uniformity calculations they do provide good information for system analysis that can help to identify problems and deveklop solutions. Your test for this site included 2 pressure readings. The smallest pressure reading was 10 psi and the largest pressure reading was 10 psi.

INPUTS

Inputs include information about test that are necessary for the calculation of application rate and distribution uniformity.

APPLICATION RATE

Application rate is the amount of irrigation water applied over a period of time calculated from the results of the catch can test. The catch values are converted from ml to inches per hour so that they can be more easily compared to precipitation rates and recommended irrigation rates. See the scheduling sheet for this site for more information on recommended irrigation rates. Variances in the low and high application rates are an indication of the uniformity of the system. Turf in areas of low application rate require more irrigation time than the average area in this site in order to stay healthy. These spots may be yellow or brown if scheduling is set for the average application rate. Turf in areas of high application rate require less irrigation time than the average area in this site in order to have time to properly drain. These spots may be constantly wet if scheduling is set for the average application rate. Minimizing the difference between high and low application rates will result in a healthier turf and more efficient water use.

DISTRIBUTION UNIFORMITY

Distribution uniformity is a single percentage that is used to evaluate the efficency of an irrigation system. It is found by dividing the average of the lowest quarter of catch volumes by the average of all catch volumes. The distribution uniformity value allows for uniform comparison between all set efficencies. In assition, it can be used to estimate scheduling requirements by adjusting irrigation duration to meet the requirements of the areas with lower irrigation aaplicatio rates. The DU for this set was calculated at Bed Width (ft)%. Industry standard for turf sprinkler irrigastion systemes is 75%.

APPLICATION EFFICIENCY

Application efficency is a single percentage that is used to evaluate the efficency of an irrigation system's scheduling and uniformity. It is found by dividing the average dept of irrigation by the average crop root depth. The application efficency value allows for uniform comparison between all set efficencies. In addition, it can be used to quickly evaluate the uniformity and scheduling of a system with respect to crop demand. The AE for this set was calculated at 73%.

WATER DESTINATION GRAPH

The water destination graph offers a graphical representation of where irrigation water is going on this site. Wet root areas are the goal of an irrigation system. Dry roots may indicate under watering. Wetness under roots is water that is not being used by the turf and is considered wasted by the irrigation system. Good irrigation systems minimize dry root areas and wet areas under the roots.

Sprinkler Irrigation Flow Catch Worksheet

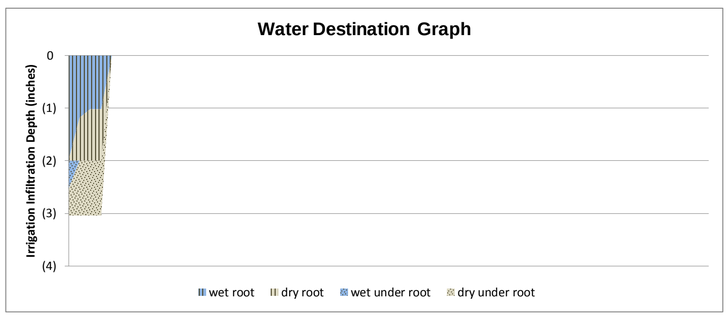
Owner:	Grower Name	IWM File Number:	IWM-XXX
Area:	2.0 acres	Date:	1/1/1901
Location:	Field 3	Irrigation System:	Sprinkler

Catch (ml)	NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NO 10
NO 1	6	7	15	6						
NO 2										
NO 3										
NO 4										
NO 5										
NO 6										

Pressure (psi)	NO 1	NO 2	NO 3	NO 4	NO 5	NO 6	NO 7	NO 8	NO 9	NO 10
STA 1	10	8								
STA 2										
STA 3										

Inputs				
	Catch Duration (min)	1.00	Plant Rows per Bed	1.00
	Row Spacing (ft)	1.00	Drip Lines per Bed	1.00
	Emitter Spacing (in)	1.00	Bed Width (ft)	1.00

Outputs			
	Mean Catch..... =	9	ml
	Mean Pressure..... =	9	psi
	Net Application Rate..... =	0.22	in/hr
	Max. Application Rate..... =	0.38	in/hr
	Min. Application Rate..... =	0.15	in/hr
	Distribution Uniformity (DU) =	**75**	**%**
	Application Efficiency (AE)	**72**	**%**



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CATCH WORKSHEET

The intent of the flow catch worksheet is to record and analyze flow catch testing . The flow catch method requires catch cans to be placed at random locations throughout the field to catch irrigation water. The volume of water is measured in each catch can and then the volumes are analyzed to determine important characteristics about how the system is working including irrigation application rate and distribution uniformity .

CATCHES

The catches section of the worksheet is used to record up to 60 catch can measurements from field testing. Your test for this site used 4 catch cans. The smallest volume collected was 6 ml and the largest volume collected was 15 ml.

PRESSURES

The pressure section of the worksheet contains pressures recorded during the catch test. While pressures are not directly related to the irrigation application of distribution uniformity calculations they do provide good information for system analysis that can help to identify problems and deveklop solutions. Your test for this site included 2 pressure readings. The smallest pressure reading was 8 psi and the largest pressure reading was 10 psi.

INPUTS

Inputs include information about test that are necessary for the calculation of application rate and distribution uniformity.

APPLICATION RATE

Application rate is the amount of irrigation water applied over a period of time calculated from the results of the catch can test. The catch values are converted from ml to inches per hour so that they can be more easily compared to precipitation rates and recommended irrigation rates. See the scheduling sheet for this site for more information on recommended irrigation rates. Variances in the low and high application rates are an indication of the uniformity of the system. Turf in areas of low application rate require more irrigation time than the average area in this site in order to stay healthy. These spots may be yellow or brown if scheduling is set for the average application rate. Turf in areas of high application rate require less irrigation time than the average area in this site in order to have time to properly drain. These spots may be constantly wet if scheduling is set for the average application rate. Minimizing the difference between high and low application rates will result in a healthier turf and more efficient water use.

DISTRIBUTION UNIFORMITY

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APPLICATION EFFICIENCY

Application efficency is a single percentage that is used to evaluate the efficency of an irrigation system's scheduling and uniformity. It is found by dividing the average dept of irrigation by the average crop root depth. The application efficency value allows for uniform comparison between all set efficencies. In addition, it can be used to quickly evaluate the uniformity and scheduling of a system with respect to crop demand. The AE for this set was calculated at 72%.

WATER DESTINATION GRAPH

The water destination graph offers a graphical representation of where irrigation water is going on this site. Wet root areas are the goal of an irrigation system. Dry roots may indicate under watering. Wetness under roots is water that is not being used by the turf and is considered wasted by the irrigation system. Good irrigation systems minimize dry root areas and wet areas under the roots.

Irrigation Scheduling

Owner:	Grower Name	IWM File Number:	IWM-XXX
Area:	2.00 acres	Date:	1/1/1901
Location:	Field 1	Irrigation System:	Sprinkler

INPUTS:

Crop Type	Strawberries	Application Rate (in/hr)	0.25
Root Depth (in)	2	System Efficiency (%)	88
MAD (%)	50		
Soil Type	Sandy Loam	System ECw (mmhos/cm)	0.9
Soil WHC (in/in)	0.15	Crop ECe (mmhos/cm)	1.5

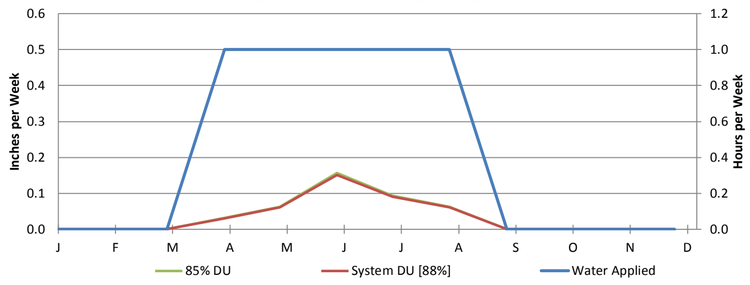
OUTPUT:

Leaching Requirement..... 0.14

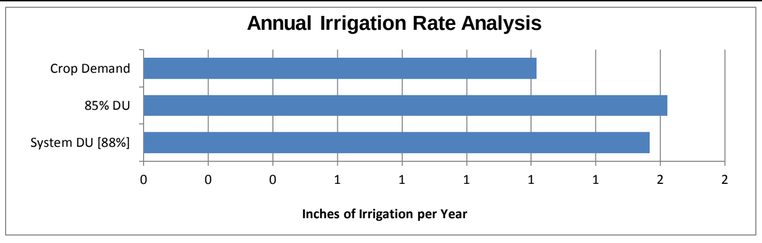
Maximum Irrigation Duration..... 0.6 Hours

Month	85% DU (in/day)	85% DU (in/wk)	System DU [88%] (in/day)	System DU [88%] (in/wk)	Hours / Day	Days / Week	Water Applied (in/day)	Water Applied (in/wk)
Jan								
Feb								
Mar								
Apr	0.00	0.03	0.00	0.03	1.0	2.0	0.25	0.50
May	0.01	0.06	0.01	0.06	1.0	2.0	0.25	0.50
Jun	0.02	0.16	0.02	0.15	1.0	2.0	0.25	0.50
Jul	0.01	0.09	0.01	0.09	1.0	2.0	0.25	0.50
Aug	0.01	0.06	0.01	0.06	1.0	2.0	0.25	0.50
Sep								
Oct								
Nov								
Dec								

Irrigation Scheduling Analysis



Annual Irrigation Rate Analysis



NOTES:

SCHEDULING SHEET

The scheduling sheet is intended to provide a comparison of the irrigation schedule currently being used by the system with recommended values for your area. Some site specific factors are not taken into account in this analysis and any changes to irrigation schedule should be accompanied by regular evaluation of the turf health. However, the guidelines provided can be a very useful tool in increasing water use efficiency and potentially reducing the amount of water needed for irrigation.

INPUTS

Inputs for the scheduling sheet are used to adjust recommendations for site specific factors. Different regions generally have different water use demands fro turf based on local climate factors. Root depth, MAD, soil type, and soil WHC are all used to determine how much water the soil around the roots can hold and how frequently irrigations are required. MAD stands for maximum allowable depletion and represents the minimum percentage of water desired in the soil before irrigation water is applied. Soil WHC stands for the water holding capacity of a specific soil type. The greaste the water holding capacity the more water can be stored in a specific volume of soil. ECw values are used to evaluate the salts in the system and the tolerance of the turf to salt. This is used to evaluate the need for extra irrigation time to leach the salts through the root area.

OUTPUT

The outputs section provides guidelines for irrigation as well as an analysis of the recommended versus existing irrigation schedule. The leaching requirement represents the percentage of extra water needed to flush slats through the root zone. The maximum irrigation duration represents the maximum time the irrigation system can be used before the average application rate leads to water infiltrating below the root zone. The scheduling sheet compares recommended irrigation volumes for a system with an industry standard 75% distribution uniformity, and the distribution uniformity of the existing system with the actual irrigation scheduling used in the system. These values are represented graphically in the chart below.

IRRIGATION SCHEDULING ANALYSIS

This graph represents a comparison between the recommended water application rate for an industry standard 75% DU system, the recommended water application rate for the existing system, and the water application rate based on the site's current scheduling.

ANNUAL IRRIGATION RATE ANALYSIS

This graph represents the annual recommended water use for the crop under ideal conditions, an industry standard 75% DU system, and the existing system.

Irrigation Scheduling

Owner:	Grower Name	IWM File Number:	IWM-XXX
Area:	2.00 acres	Date:	1/1/1901
Location:	Field 2	Irrigation System:	Sprinkler

INPUTS:

Region	Strawberries	Application Rate (in/hr)	0.22
Root Depth (in)	2	System Efficiency (%)	81
MAD (%)	50		
Soil Type	Sandy Loam	System ECw (mmhos/cm)	0.9
Soil WHC (in/in)	0.15	Crop ECe (mmhos/cm)	1.5

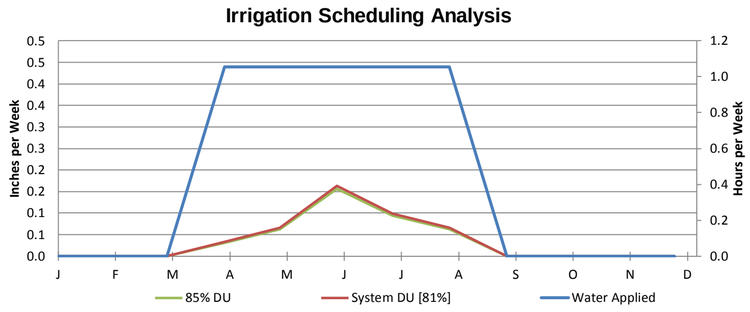
OUTPUT:

Leaching Requirement..... 0.14

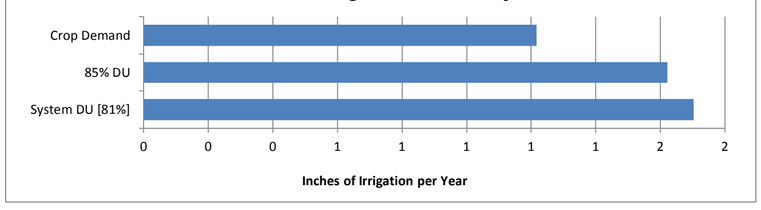
Maximum Irrigation Duration..... 0.7 Hours

Month	85% DU (in/day)	85% DU (in/wk)	System DU [81%] (in/day)	System DU [81%] (in/wk)	Hours / Day	Days / Week	Water Applied (in/day)	Water Applied (in/wk)
Jan								
Feb								
Mar								
Apr	0.00	0.03	0.00	0.03	1.0	2.0	0.22	0.44
May	0.01	0.06	0.01	0.07	1.0	2.0	0.22	0.44
Jun	0.02	0.16	0.02	0.16	1.0	2.0	0.22	0.44
Jul	0.01	0.09	0.01	0.10	1.0	2.0	0.22	0.44
Aug	0.01	0.06	0.01	0.07	1.0	2.0	0.22	0.44
Sep								
Oct								
Nov								
Dec								

Irrigation Scheduling Analysis



Annual Irrigation Rate Analysis



NOTES:

SCHEDULING SHEET

The scheduling sheet is intended to provide a comparison of the irrigation schedule currently being used by the system with recommended values for your area. Some site specific factors are not taken into account in this analysis and any changes to irrigation schedule should be accompanied by regular evaluation of the turf health. However, the guidelines provided can be a very useful tool in increasing water use efficiency and potentially reducing the amount of water needed for irrigation.

INPUTS

Inputs for the scheduling sheet are used to adjust recommendations for site specific factors. Different regions generally have different water use demands fro turf based on local climate factors. Root depth, MAD, soil type, and soil WHC are all used to determine how much water the soil around the roots can hold and how frequently irrigations are required. MAD stands for maximum allowable depletion and represents the minimum percentage of water desired in the soil before irrigation water is applied. Soil WHC stands for the water holding capacity of a specific soil type. The greaste the water holding capacity the more water can be stored in a specific volume of soil. ECw values are used to evaluate the salts in the system and the tolerance of the turf to salt. This is used to evaluate the need for extra irrigation time to leach the salts through the root area.

OUTPUT

The outputs section provides guidelines for irrigation as well as an analysis of the recommended versus existing irrigation schedule. The leaching requirement represents the percentage of extra water needed to flush slats through the root zone. The maximum irrigation duration represents the maximum time the irrigation system can be used before the average application rate leads to water infiltrating below the root zone. The scheduling sheet compares recommended irrigation volumes for a system with an industry standard 75% distribution uniformity, and the distribution uniformity of the existing system with the actual irrigation scheduling used in the system. These values are represented graphically in the chart below.

IRRIGATION SCHEDULING ANALYSIS

This graph represents a comparison between the recommended water application rate for an industry standard 75% DU system, the recommended water application rate for the existing system, and the water application rate based on the site's current scheduling.

ANNUAL IRRIGATION RATE ANALYSIS

This graph represents the annual recommended water use for the crop under ideal conditions, an industry standard 75% DU system, and the existing system.

Irrigation Scheduling

Owner:	Grower Name	IWM File Number:	IWM-XXX
Area:	2.00 acres	Date:	1/1/1901
Location:	Field 3	Irrigation System:	Sprinkler

INPUTS:

Region	Strawberries	Application Rate (in/hr)	0.22
Root Depth (in)	2	System Efficiency (%)	75
MAD (%)	50		
Soil Type	Sandy Loam	System ECw (mmhos/cm)	0.9
Soil WHC (in/in)	0.15	Crop ECe (mmhos/cm)	1.5

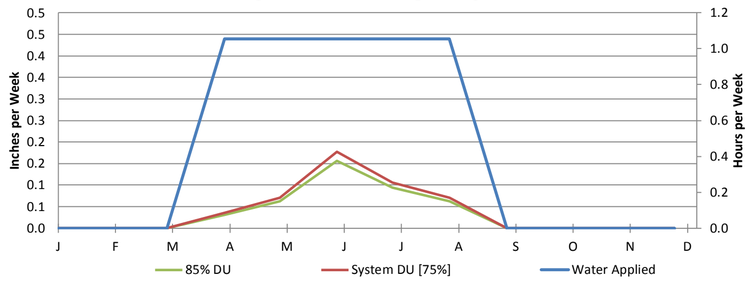
OUTPUT:

Leaching Requirement..... 0.14

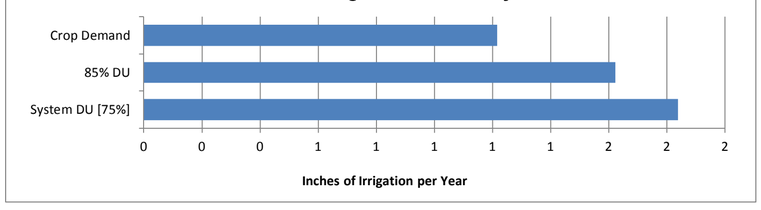
Maximum Irrigation Duration..... 0.7 Hours

Month	85% DU (in/day)	85% DU (in/wk)	System DU [75%] (in/day)	System DU [75%] (in/wk)	Hours / Day	Days / Week	Water Applied (in/day)	Water Applied (in/wk)
Jan								
Feb								
Mar								
Apr	0.00	0.03	0.01	0.04	1.0	2.0	0.22	0.44
May	0.01	0.06	0.01	0.07	1.0	2.0	0.22	0.44
Jun	0.02	0.16	0.03	0.18	1.0	2.0	0.22	0.44
Jul	0.01	0.09	0.02	0.11	1.0	2.0	0.22	0.44
Aug	0.01	0.06	0.01	0.07	1.0	2.0	0.22	0.44
Sep								
Oct								
Nov								
Dec								

Irrigation Scheduling Analysis



Annual Irrigation Rate Analysis



NOTES:

SCHEDULING SHEET

The scheduling sheet is intended to provide a comparison of the irrigation schedule currently being used by the system with recommended values for your area. Some site specific factors are not taken into account in this analysis and any changes to irrigation schedule should be accompanied by regular evaluation of the turf health. However, the guidelines provided can be a very useful tool in increasing water use efficiency and potentially reducing the amount of water needed for irrigation.

INPUTS

Inputs for the scheduling sheet are used to adjust recommendations for site specific factors. Different regions generally have different water use demands fro turf based on local climate factors. Root depth, MAD, soil type, and soil WHC are all used to determine how much water the soil around the roots can hold and how frequently irrigations are required. MAD stands for maximum allowable depletion and represents the minimum percentage of water desired in the soil before irrigation water is applied. Soil WHC stands for the water holding capacity of a specific soil type. The greaste the water holding capacity the more water can be stored in a specific volume of soil. ECw values are used to evaluate the salts in the system and the tolerance of the turf to salt. This is used to evaluate the need for extra irrigation time to leach the salts through the root area.

OUTPUT

The outputs section provides guidelines for irrigation as well as an analysis of the recommended versus existing irrigation schedule. The leaching requirement represents the percentage of extra water needed to flush slats through the root zone. The maximum irrigation duration represents the maximum time the irrigation system can be used before the average application rate leads to water infiltrating below the root zone. The scheduling sheet compares recommended irrigation volumes for a system with an industry standard 75% distribution uniformity, and the distribution uniformity of the existing system with the actual irrigation scheduling used in the system. These values are represented graphically in the chart below.

IRRIGATION SCHEDULING ANALYSIS

This graph represents a comparison between the recommended water application rate for an industry standard 75% DU system, the recommended water application rate for the existing system, and the water application rate based on the site's current scheduling.

ANNUAL IRRIGATION RATE ANALYSIS

This graph represents the annual recommended water use for the crop under ideal conditions, an industry standard 75% DU system, and the existing system.

System Upgrade Cost/Benefit Estimate

The cost values below are based on average costs in this area. These costs will vary based on cost of labor and equipment and may be significantly different than the values shown here. Cost savings is based on the price of the water saved. Water savings is estimated in this sheet but will vary based on system use and

INPUTS:

Field 1 Crop Demand	1.2	in	Water meter start	1000.00	acft
Field 2 Crop Demand	1.2	in	Water meter end	1000.10	acft
Field 3 Crop Demand	1.2	in	Electric meter start	500.0	kwh
			Electric meter end	510.0	kwh
			Cost per kwh	$7.50	
			Water Cost	$750.00	$/acft

Field 1: 2 acres

Item	Unit	Number	Unit Cost	Total Cost	DU Improvement
Replace Drip Tape	EA	20	$1	$20	5%
New Controller	EA	1	$200	$200	2%
				$220	94%

Field 2: 2 acres

Item	Unit	Number	Unit Cost	Total Cost	DU Improvement
Replace Drip Hose	EA	20	$6	$120	5%
Replace Emitters	EA	20	$10	$200	5%
Upgrade Manifold	FT	1000	$2	$2,000	5%
				$2,320	94%

Field 3: 2 acres

Item	Unit	Number	Unit Cost	Total Cost	DU Improvement
Replace Drip Tape	EA	20	$10	$200	5%
Upgrade Manifold	FT	1000	$2	$2,000	5%
				$2,200	83%

SUMMARY:

Annual Cost Analysis	Field 1	Field 2	Field 3
Existing water (acft)	0.23	0.25	0.27
Existing cost ($)	$173	$188	$203
Improved water (acft)	0.22	0.22	0.25
Improved cost ($)	$161	$162	$184
Cost savings ($)	$11	$26	$19
Breakeven time (yr)	20	91	117

NOTES: