

IPM for Athletic Fields

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Disease: Necrotic Ring Spot

- Cause: *Leptosphaeria korrae*
- Occurrence:
 - August-November
 - March – May
- Grasses:
 - Kentucky Bluegrass

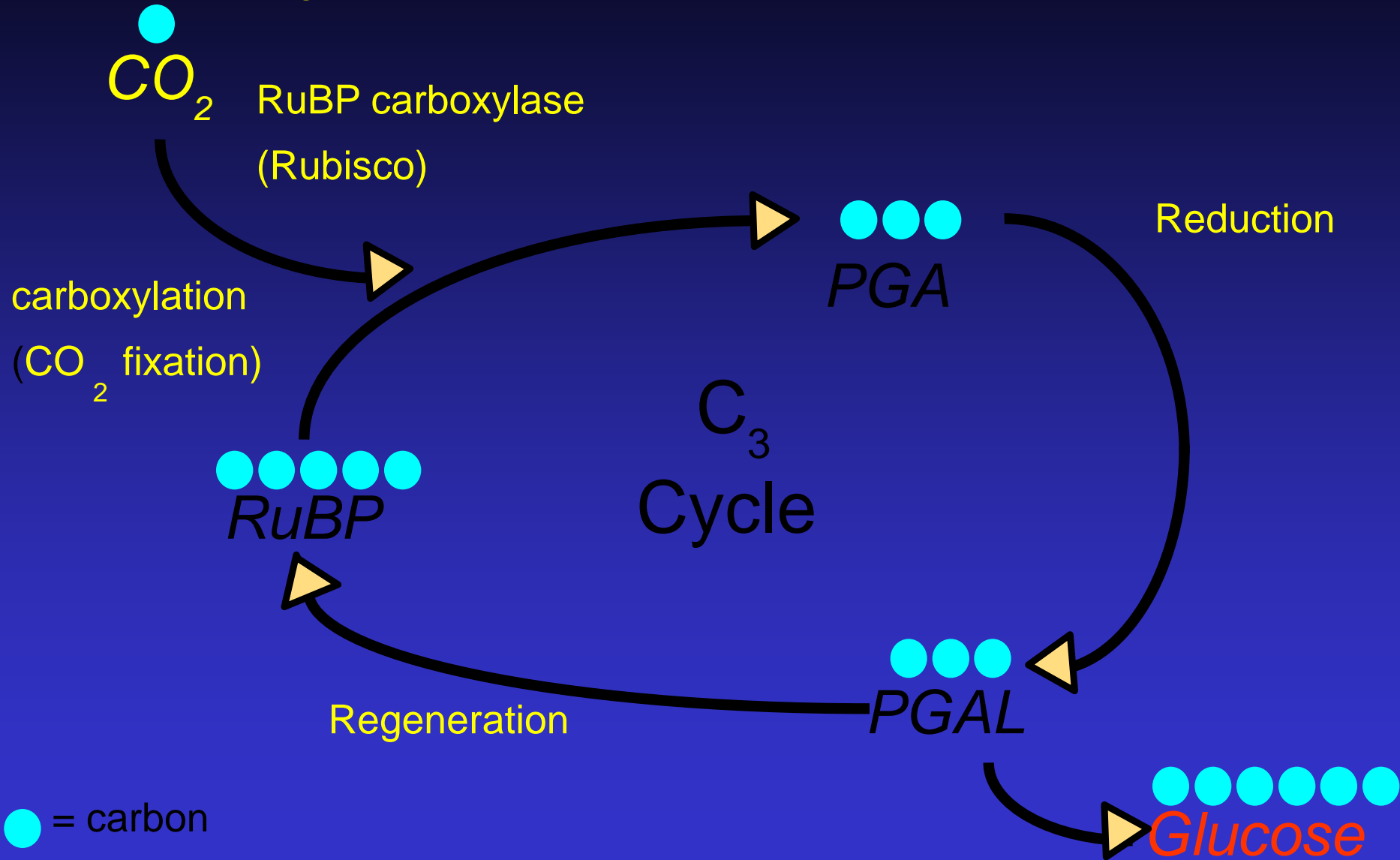
Irrigation Regimes

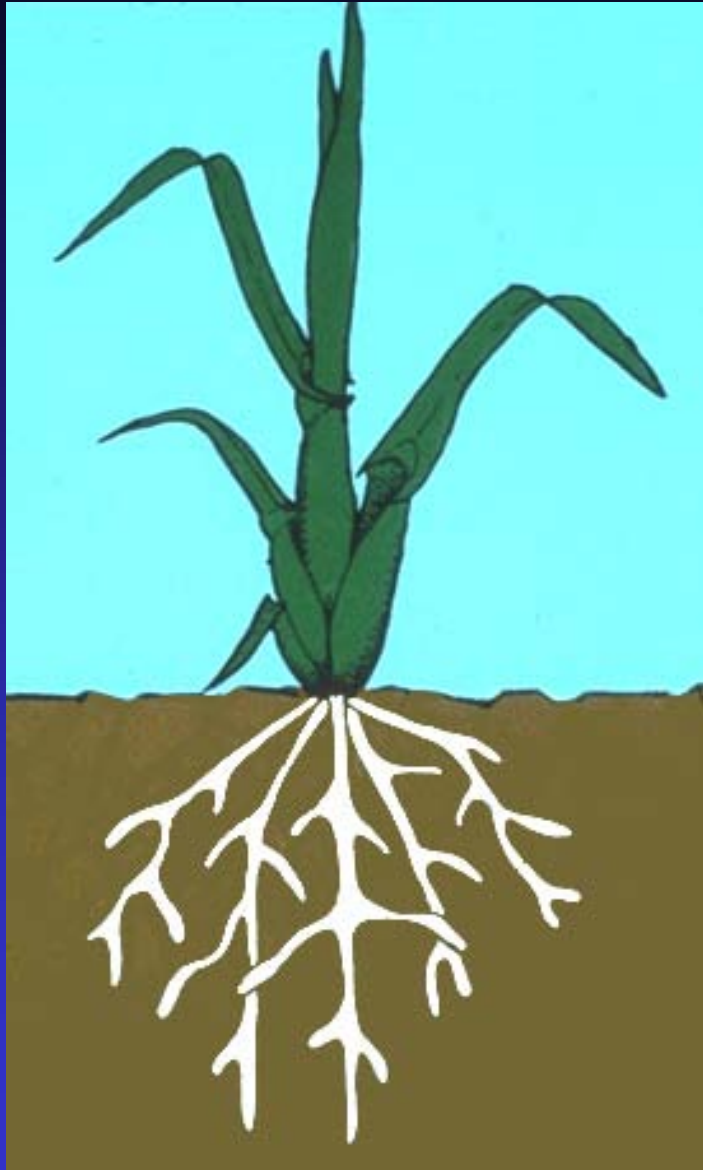
- 1) 2.5 ml per day (17.5 ml/wk)
- 2) 80% pan replaced twice per week
- 3) Rain only

Why are the roots of cool season grasses shorter in the warm weather?

- Less photoassimilates available
- Warm soil temperatures

C₃ Photosynthetic Cycle





Photoassimilate Production

- respiration
- leaf and stem growth
- storage in shoot tissues
- translocation to roots*

*0.5–3.0% in summer;
up to 15% in cool
weather

Necrotic Ring Spot CPC - 1989

Treatment	Rate/1000 sq ft	% Disease
Lawn Restore (9-4-4)	.5 kg N/month	10
IBDU (18-3-24)	.5 kg N/month	10
Urea	.5 kg N/month	23
Check	--	62

Resistance of Kentucky Bluegrass to Necrotic Ring Spot

Cultivar	Average # of rings/plot	Percent disease
Monopoly	0	0
Able I	0	0
Midnight	0	0
Eclipse	0	0
Mystic	0.7	2
America	0.7	2
Bensun A-34	4	23

Necrotic Ring Spot Management

- **Cultural**
 - 1) Slow release N (IBDU, Natures Safe, UF)
 - 2) Daily irrigation
- **Genetic**
 - Midnight
 - Eclipse
 - Able I
 - Mystic
 - America
 - Monopoly
- **Biological**
 - 1) Daily irrigation
 - 2) Slow release N (IBDU, Natures Safe, UF)
- **Chemical**
 - 1) Preventive
 - Rubigan
 - Banner
 - Eagle
 - 2) Curative
 - Fungo 50
 - Cleary's 3336

Disease: Helminthosporium Melting Out

- Cause: *Drechslera poae*
- Months: April - June
- Grasses:
 - Kentucky bluegrass

Melting Out Fertility Study

Treatment	Rate/1000 sq ft	Disease Rating*	DMR
Urea (fall and spring)	1.7 kg N	1.3	A
Urea (spring only)	.7 kg N	2.3	A
Urea (fall only)	.5 kg N	5.3	B
Check	--	8	C

*Rating scale: 1-no disease

9-90% thinning from disease

Irrigation regimes

- Percent infected leaves
 - Daily 23
 - 80 pan 56
 - No Irrigation 82

Disease: Melting Out

- Management IDM

- Biological

- Daily irrigation

- Chemical

- 1) Chipco 26GT – S
- 2) Vorlan – S
- 3) Curalan – S
- 4) Touche – S
- 5) Daconil Ultrex
- 6) Echo

- Cultural

- 1) Nitrogen fertility
- 2) Mow between 5-7.5 cm

- Resistant Cultivars

- 1) Adelphi
- 2) Midnight
- 3) America
- 4) Mystic
- 5) Able I
- 6) Monopoly
- 7) Eclipse

Grubs

- Management
 - Cultural
 - Daily irrigation
 - Chemical
 - Merit
 - Mach II
 - 1) Irrigate turf well before applying
 - 2) Drench down to soil/thatch interface

Billbugs

- Management
 - Biological: daily irrigation
 - Chemical:
 - Sevin
 - Telstar
 - Tempo
 - 1) avoid mowing and irrigation for 48 hours after treatment
 - 2) apply in spring for adults

Chinch bugs

- Management
 - Biological
 - Daily irrigation
 - Chemical
 - Sevin
 - Telstar
 - Tempo
 - Avoid mowing and irrigation for 48 hrs after treatment

Conclusions

- Daily irrigation IPM
 - 1) Requires less irrigation
 - 2) Maintains high soil moisture levels
 - 3) Manages diseases
 - A) Necrotic ring spot
 - B) Summer patch
 - C) Melting out
 - 4) Manages insects
 - A) Billbugs
 - B) Chinch bugs
 - C) Grubs (raises threshold)

Cultural Management of Kentucky Bluegrass

- 1) Mow between 5-7.5 cm
- 2) Coring in spring or fall
- 3) 2.5-3 kg N/season
- 4) Daily irrigation

Disease: Fairy Ring

- **Cause:** Many Basidiomycetes
- **Occurrence:** Any Season
- **Grasses:** All turf areas

Disease: Fairy Ring

- Management
 - Cultural
 - Remove infected area
 - Chemical
 - 1) Prostar – S
 - 2) Heritage – S
 - 3) Endorse
 - 4) Bayleton - S

