RUSLE2
Maryland Training Exercise CMZ 65 (Answers)

Exercise 1

Soil loss for conservation planning = 8.9 t/a/y
T value for soil map unit *CeB2* = 5.0 t/a/y
Surface Residue Cover after planting = 13 %

Exercise 2

Contouring - Soil loss for conservation planning = 6.9 t/a/y
Strips/barriers - Soil loss for conservation planning = 4.7 t/a/y
Sediment Delivery = 4.1 t/a/y
Did the tons of soil loss change as much as you expected after the buffer strip was added? Soil loss changes significantly when adding a buffer strip.
Why do you think it changed this amount? Buffer strip will reduce the amount of soil erosion actually leaving the field.
Why is the sediment delivery value lower after adding the buffer strip?
The buffer strip will actually catch the sediment from leaving the field and reduce the amount of soil leaving the field.

Exercise 3

What is the correct name for this rotation? ***cg, sp; sb, nr, sp; z65***

Exercise 4

What is the correct name for this rotation? ***cg, sctw; sb, nr, sctw; Z65***

Exercise 5

What is the correct name for this rotation? ***cg, nt; sb, nr, nt; Z65***

Exercise 6

Soil loss for conservation planning, Row 1 (w/ moldboard) = 8.3 t/a/y
Soil loss for conservation planning, Row 2 (w/ twisted chisel) = 6.8 t/a/y
Soil loss for conservation planning, Row 3 (w/ no-till) = .90 t/a/y

Exercise 7

Soil loss for conservation planning

Field 1, alternative 1 = 8.3 t/a/y	Field 2, alternative 1 = 3.6 t/a/y
Field 1, alternative 2 = 6.8 t/a/y	Field 2, alternative 2 = 2.9 t/a/y
Field 1, alternative 3 = .90 t/a/y	Field 2, alternative 3 = .45 t/a/y

Exercise 9

What is the (annual) ***R Factor*** value? 150
What month has the highest precipitation? May
What month has the highest ***ed*** (erosivity density)? July

Exercise 10

What is the assumed yield for this record? 112 bu/ac
What is the above-ground biomass, in lb/ac, at maximum canopy? 6270 lbs/Ac
Using the Growth Chart, in what period (Age, days) does maximum canopy occur? 75 Days
Are these graphs similar? Yes
How does their seasonal growth differ? Rootmass in lbs/Ac is at maximum after 90 days. % Canopy cover reaches its maximum at 75 days.

Exercise 11

What is the ***erodibility*** (K) value? 0.32 What is the ***T*** value? 5.0 T/A
What is the % ***Sand?*** 30 % ***Silt?*** 54 % ***Clay?*** 17
What is the ***Hydrologic class***? B - mod. low runoff

BONUS Question: Of the small aggregates in ***Detached particles***, what is their Portion? 30 Diameter? 0.0012 Fall velocity? 0.00085 SG? 1.8

Exercise 12

What fraction of standing corn residue is flattened by this operation? 0.35
What is the recommended (rec.) tillage depth? 1.5 inches
What is the ridge height? 1.0 inches
What is the initial (random) roughness? 0.30 inches
What is the % surface area disturbed? 65 %
What is the fraction of corn residue buried by this operation? 0.13
What is the fraction of buried corn residue resurfaced? 0.010

Exercise 13

This residue responds to tillage like (fill in) non-fragile-med. (corn)
What is this residue's half-life? 43 days
What is the mass at 30% cover? 950 lbs/Ac 60% cover? 2400 lbs/Ac
90% cover? 6100 lbs/Ac