

2011 Pasture Measurement Project Summary

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Introduction

According to the 2007 Census of Agriculture there are 42,385 farms using 1,674,776 acres of pasture land in Ohio. Objective information on how pastures perform throughout the growing season is useful to manage this feed resource.

Objective

To measure the average weekly growth rate of forages growing in rotationally managed pastures throughout Ohio.

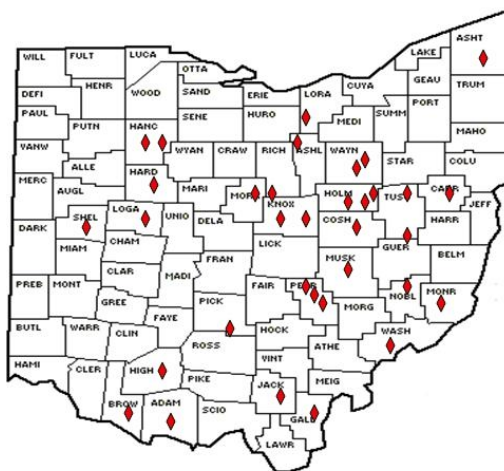
Crop Year: 2011

Measurement start date: March 27

Location: See map

Measurement end date: Nov. 16

Figure 1. 2011 Pasture Measurement Cooperator Locations



Methods

The project involved taking total above ground forage mass measurements weekly on farms across Ohio. The pastures measured contain typical forages found in Ohio pasture fields. Management of the pasture fields including when to graze, clip or fertilize was up to the cooperating farmer. All of the fields measured were managed under a rotational grazing system. These farmers measured the same pasture field every week using a commercially available rising plate meter (Jenquip) and reported the measurement. Measurements were taken during the grazing season, and before and after grazing or clipping the field. At least thirty measurements were taken in each field to determine its pasture mass. A multiplier was developed from the relationship of the pasture meter reading to pasture mass determined by hand clipping samples,

drying then weighing the dry sample. Plate meter readings were multiplied by 107.4 to estimate pounds of dry matter (DM) per acre. Growth was calculated by dividing the difference in consecutive measurements by the days between measurements. Losses of dry matter due to grazing or clipping were excluded from the weekly averages.

Results

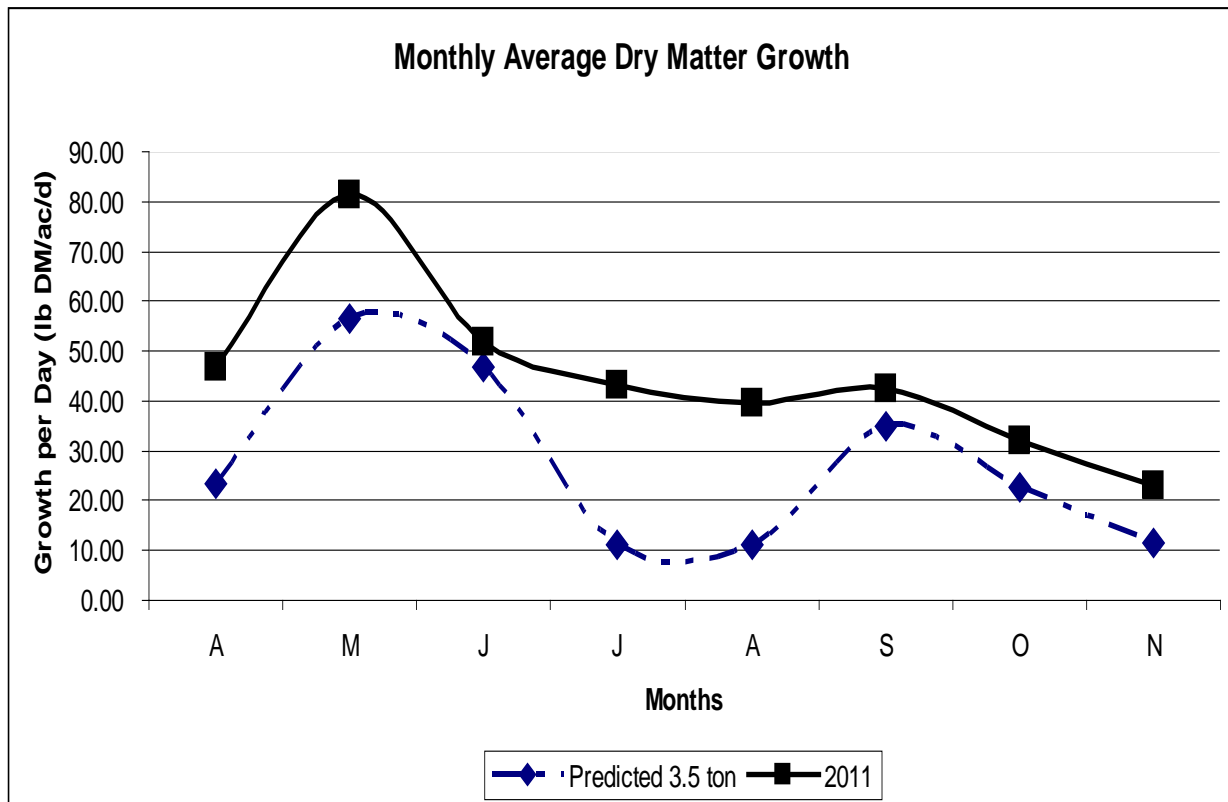
Week of the Year	Number of Pastures Reporting	Average Growth (lb DM/ac/day)	Standard Deviation
13	1	0.57	na
14	7	13.91	4.83
15	9	40.06	18.81
16	28	43.37	29.38
17	29	59.86	43.66
18	42	64.05	43.12
19	57	94.19	60.59
20	38	85.03	52.06
21	52	82.31	48.41
22	33	75.57	57.03
23	33	72.94	34.17
24	21	44.51	21.85
25	30	45.56	31.36
26	28	39.55	37.66
27	22	29.53	27.27
28	32	44.42	37.96
29	41	59.51	47.39
30	23	41.60	30.19
31	32	31.64	32.39
32	25	42.62	28.81
33	35	36.62	28.39
34	34	47.31	35.67
35	30	32.54	25.14
36	23	54.74	54.18
37	31	45.23	20.63
38	21	29.38	23.36
39	32	39.73	27.29
40	27	27.62	19.09
41	31	52.25	44.16
42	16	30.41	22.40
43	23	14.06	9.70
44	16	29.00	37.99
45	14	23.12	13.44

Summary

Cool season forages are known not to grow at the same rate all year. The bimodal growth pattern is represented in Figure 2 as the 3.5 ton yearly production level based on the seasonal yield distribution reported in the Ohio Agronomy Guide. Many times in planning grazing systems the annual production number of 3.5 tons of DM produced per acre is used as an estimate. Figure 2. compares the planning values with the monthly average measured in 2011. During 2011, farms measured forage production per day greater than the estimated 3.5 ton yield. Average yield from the measured fields for the months of April to November was 5.5 tons per acre. Figure 2. indicates a high 2011 production period during April through early June, followed by a sustained daily forage production during June through September. The expected bimodal production was not apparent in the on-farm results measured during 2011.

This information is useful to help with feed budgeting. Growth during 2011 did not perform as expected. Above average rainfall during the growing season may be the reason for the greater than expected growth. Adjustments to stocking density, paddock size, or length or grazing period could be adjusted to account for this change. Supplemental feed needs and excess available for harvesting and storage also need to be adjusted.

Figure 2. 2011 Monthly average growth compared to 3.5 ton per acre planning average.



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