Soil Moisture

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Joel DeJong, extension field agronomist
Paul Kassel, extension field agronomist

Introduction

Soil moisture is critical for crop production in most years in northwest and west central Iowa.

Materials and Methods

Soil moisture samples were taken at 13 sites in northwest and west central Iowa during the last few days of October 2015. Moisture samples were taken at 1-ft increments down to a 5-ft depth. Samples were weighed, oven dried, and reweighed at the Northwest Research Farm. The moisture percentage was calculated from these data, and then used to calculate the inches of plant-available moisture in the soil. The data from these sites are listed in Table 1.

Results and Discussion

The amount of subsoil moisture in northwest/west central Iowa shows several sites that have improved the last few years. The level of subsoil moisture at the soil moisture sites in 12 northwest Iowa counties ranged from 3.8 in. to 10.4 in. of plant available moisture. The average among the 13 observations in the 11 counties was 7.5 in., compared with the 6.2-in. average in 2014, the 5.3-in. average in 2013, and the 4.5-in. average from the sites sampled in 2012. Only the Castana site showed less than the long-term soil moisture level as of November 1, 2015.

Rainfall during November and December of 2015 have contributed greatly to subsoil moisture since these samples were analyzed. Almost 7 in. of precipitation was measured by the Castana weather station during November and December of 2015, likely bringing that subsoil moisture site close to field capacity by the end of the 2015. Similar rainfall amounts blanketed the entire region during that time period.

Table 1. Soil moisture available to plants, in inches.

Site	County fall average (in.)	County	2015 crop	Plant available moisture (in.)
Doon	4.3	Lyon	soybean	6.6
Sibley	5.1	Osceola	corn	6.1
Spirit Lake	5.7	Dickinson	soybean	7.7
Estherville	5.9	Emmet	corn	6.3
Ireton	4.2	Sioux	corn	9.3
Sanborn	5.9	O'Brien	soybean	8.6
Sutherland	5.9	O'Brien	corn	10.4
Akron	4.3	Plymouth	soybean	6.2
Le Mars	4.3	Plymouth	soybean	8.8
Marcus	5.6	Cherokee	soybean	9.5
Lawton	4.6	Woodbury	soybean	8.3
Battle Creek	6.0	Ida	corn	6.6
Castana	4.9	Monona	soybean	3.8