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Fieldwork Days in Iowa

Description

The number of days available to complete tillage, crop protection, planting, and harvesting is an important consideration in selecting farm machinery. A large set of machinery will complete field work quickly, but will have high depreciation, interest, and other ownership costs. A smaller machinery set will cost less to own, but may not complete the job on time some years, which could lead to crop losses from late planting or harvesting.

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Agricultural and Biosystem Engineering; Crops; Machinery; Machinery Management

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File A3-25

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The size of machinery that can accomplish the necessary work most efficiently depends on how many days it can actually be used in the field. Estimates of the number of suitable fieldwork days that can be expected in each of the nine crop reporting districts in Iowa are shown in Table 1. These estimates are based on weekly records kept by the Iowa Agricultural Statistics Office from 1964 through 2013.

Estimates are listed for each week, and for multiweek periods corresponding to the times major field operations are normally performed. The values shown are the median number of days reported each week. There is a 50 percent chance that more days will be available in a given year, and a 50 percent chance there will be fewer. If field work will not normally be done on Sundays or holidays, subtract 0.7 days per week.

Once you determine the number of days that you can expect to be able to perform field work, the

minimum daily machine capacity that is needed can be computed. For example, in northwest Iowa between April 30 and May 13 you can expect 4.0 plus 4.3, or 8.3 suitable field days.

If you have 1,600 acres of corn to plant, you need to be able to plant $1,600 \div 8.3 = 192.8$ acres per day in order to finish on time. If the planter can be operated 14 hours per day, a planter large enough to plant 13.8 acres per hour is needed ($192.8 \text{ acres} \div 14 \text{ hours}$).

[AgDM File A3-24](#), *Estimating the Field Capacity of Farm Machines*, can be used to estimate the number of acres that can be completed per hour for different types and sizes of machines. [Decision Tool A3-24](#), *Estimating the Number of Field Days Required*, can be used to estimate the total number of field days required to complete a series of machinery operations, such as tillage and planting. These estimates can then be compared to the number of expected field days from this publication to test whether your machinery capacity is adequate for timely planting and harvesting.

The actual number of suitable field days can be quite variable from year-to-year. Figure 1 shows the distribution of field days recorded for the April 2 to June 3 period. Eight percent of the time there were fewer than 20 days available. Figure 2 shows similar data for fall weather, which is less variable than spring weather.

Figure 1. Number of suitable field days statewide from April 2 to June 3 (63 days)

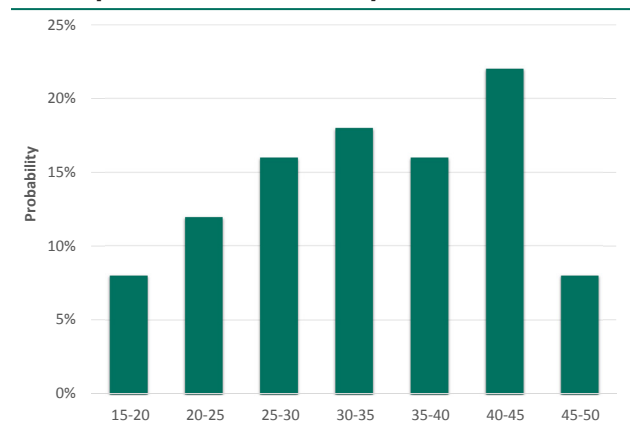


Figure 2. Number of suitable field days statewide from September 10 to October 28 (49 days)

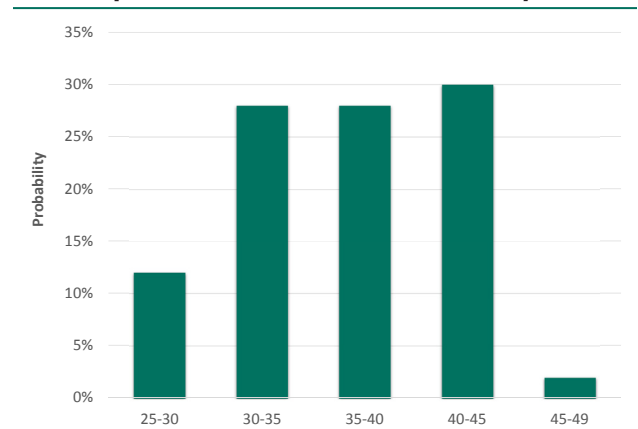


Table 1. Estimated Days Suitable for Fieldwork in Iowa.

Median Values, by Crop Reporting District												
Week		North-west	North Central	North-east	West Central	Central	East Central	South-west	South Central	South-east	State	
2-Apr	to 8-Apr	1.3	1.1	1.3	2.7	2.4	2.3	3.4	2.9	2.6	2.3	
9-Apr	to 15-Apr	2.9	2.5	3.0	4.4	3.5	3.1	4.0	3.1	2.8	3.5	
16-Apr	to 22-Apr	3.1	2.6	3.3	3.5	3.5	3.4	3.6	2.5	3.0	3.1	
23-Apr	to 29-Apr	4.1	3.7	3.8	4.2	4.1	3.9	4.0	3.2	2.8	3.7	
30-Apr	to 6-May	4.0	3.7	4.2	4.2	4.1	4.0	3.6	3.0	3.7	3.9	
7-May	to 13-May	4.3	4.0	4.0	4.2	4.0	4.3	3.6	3.4	3.0	3.9	
14-May	to 20-May	4.8	5.0	5.0	4.9	4.9	4.2	4.8	4.1	4.4	4.9	
21-May	to 27-May	4.9	4.8	5.0	5.0	4.8	4.6	4.0	3.8	4.6	4.8	
28-May	to 3-Jun	4.6	4.6	4.5	4.7	4.4	4.8	3.8	3.8	4.3	4.5	
4-Jun	to 10-Jun	5.1	4.5	5.0	5.0	4.6	4.6	4.8	4.5	4.0	4.6	
11-Jun	to 17-Jun	5.0	4.5	5.1	4.7	4.3	4.9	4.8	3.9	4.2	4.7	
18-Jun	to 24-Jun	5.0	4.8	4.8	4.8	4.8	4.6	4.3	4.3	4.6	4.7	
25-Jun	to 1-Jul	5.5	5.2	5.7	5.9	5.4	5.1	5.7	5.9	5.1	5.5	
2-Jul	to 8-Jul	5.6	5.6	5.8	5.8	5.4	5.6	5.7	5.8	5.5	5.5	
9-Jul	to 15-Jul	5.6	5.6	5.7	5.8	5.4	5.8	5.6	5.6	6.0	5.6	
16-Jul	to 22-Jul	5.8	5.3	5.7	5.9	5.5	5.6	5.9	6.2	5.8	5.7	
23-Jul	to 29-Jul	5.5	5.6	5.4	5.5	5.4	5.4	5.7	5.7	5.5	5.4	
30-Jul	to 5-Aug	6.0	5.9	5.9	5.9	5.8	5.8	6.1	6.2	6.1	5.8	
6-Aug	to 12-Aug	6.0	5.8	5.9	6.1	5.8	5.9	5.7	5.7	6.1	6.0	
13-Aug	to 19-Aug	5.6	5.8	5.6	5.8	5.8	5.6	5.8	5.8	5.7	5.7	
20-Aug	to 26-Aug	5.7	5.6	5.7	6.0	5.6	5.5	5.9	5.7	5.4	5.7	
27-Aug	to 2-Sep	6.0	5.7	5.6	5.9	5.7	5.7	6.1	6.2	6.1	5.7	
3-Sep	to 9-Sep	6.1	6.2	5.9	6.1	6.1	5.7	6.0	6.0	5.9	5.9	
10-Sep	to 16-Sep	5.3	5.7	5.9	5.6	5.7	5.8	5.6	5.7	5.6	5.7	
17-Sep	to 23-Sep	5.4	5.2	5.4	5.5	5.4	5.4	5.9	5.4	5.4	5.4	
24-Sep	to 30-Sep	5.5	5.5	5.7	5.8	5.8	5.8	6.0	5.9	5.8	5.5	
1-Oct	to 7-Oct	6.0	5.7	5.7	6.0	5.7	5.6	5.8	5.6	5.6	5.9	
8-Oct	to 14-Oct	5.4	5.3	5.4	5.3	5.5	5.4	5.3	5.2	5.4	5.4	
15-Oct	to 21-Oct	5.8	5.7	5.8	6.0	5.8	5.9	6.0	6.2	6.1	5.9	
22-Oct	to 28-Oct	5.9	5.7	5.7	5.8	6.0	5.6	5.7	5.4	5.5	5.8	

Period		North-west	North Central	North-east	West Central	Central	East Central	South-west	South Central	South-east	State	
2-Apr	to 3-Jun	34.4	30.7	34.0	36.8	34.7	33.9	35.0	29.2	29.6	32.6	
4-Jun	to 9-Sep	73.5	71.5	73.4	74.8	73.3	74.0	74.4	72.8	71.8	73.8	
10-Sep	to 28-Oct	36.0	37.3	37.2	37.6	38.8	37.5	37.3	37.2	37.6	38.4	

Source: USDA, National Agricultural Statistics Service, Iowa Field Office, 1964-2013.

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