

When the Seasons Begin in Indiana

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The conventional beginning dates of the seasons, December 1, March 1, June 1 and September 1, or the "astronomical dates" of the solstices and equinoxes, (December 22, March 21, June 21 and September 22) do not coincide closely with the beginning of the seasons as they are felt in Indiana. The average dates, obtained from the daily temperature normals (average of day and night for many years) are here given for Indiana on several other bases. These dates have real significance and hence considerable interest.

The coldest quarter of the year commences for most of Indiana about December 3. If winter is defined as the season when the temperatures are below freezing, for the average of day and night, it commences in northern Indiana about December 3, in central Indiana about December 15, and in southern Indiana about December 22, except in the Ohio River lowland, where daily normals below 32° are lacking.

If spring is defined as the quarter of the year following the coldest quarter of the year, it commences in southern Indiana about March 1, in central Indiana about March 4 and in northwestern Indiana about March 7.

If spring is defined as the season when the daily normals rise above the freezing point, it commences about February 15 in south central Indiana, about March 1 in north central Indiana, and about March 6 in northern Indiana.

Appreciable plant growth of hardy plants commences when the daily temperature normals rise above 35°. This occurs about mid February near the Ohio River, about March 1 across the southern part of central Indiana, about March 15 in the southern part of northern Indiana.

Mild spring (daily normals rise above 50°) commences about April 5 in southern Indiana, about April 15 in central Indiana and about April 20 in northern Indiana.

The average date of the last killing frost in spring comes somewhat later than the dates just mentioned, when the daily normals rise above 50°. The average frost-free season commences about April 20 in much of southern Indiana, about May 1 in much of central Indiana and near Lake Michigan, but not until about May 7 in considerable areas in the elevated eastern and northeastern parts of the state, and in the northwest away from Lake Michigan.

As corn makes little growth when the temperature is below 55°, the date when the average temperature normals exceeds 55° is of interest in Indiana, because of the local importance of corn. In the southern part of the state "the corn-growing season" commences about April 20, except along the Ohio and lower Wabash river bottoms. In central Indiana it commences about April 25, along the upper Wabash river it

commences about May 1, but in the northern counties not until after May 5.

The warmest quarter of the year commences in most of Indiana nearly a week after June 1. In the northwestern part of the state, however, this warmest quarter does not commence until about June 10.

If summer is defined as the season when the temperatures average 68° or higher, summer commences in the last week in May in the southern fourth of the state, during the first week in June in the central one-fourth of the state and in the second week in June in the northern one-fourth.

Hot summer, that is, averages of day and night together of 75° or higher, commences about June 15 in the southern tier of counties, about July 1 along a line from Cincinnati to Terre Haute, during the first week in July in most of central Indiana and in the second week in July in the northern and eastern part of central Indiana. Daily normals of 75° are lacking in the northernmost counties, despite the fact that they occasionally have very hot days. When however, the temperatures of all the days and nights of 40 years are averaged, the highest total is somewhat below 75° .

The beginning date of autumn depends, therefore, on what criteria are used. Hot summer ends in early August in the part of northern Indiana that attains that level, it ends about August 10 in most of central Indiana, about August 20 in most of southwestern Indiana, but not until about September 1 in the hottest southwestern corner of the state.

The third quarter of the year, so far as temperature is concerned, commences not on September 1 but about September 8 in almost all parts of the state.

If autumn is defined as the season when the daily normal temperatures fall below 68° , it commences for much of northern Indiana about September 5, for much of central Indiana about September 10, for much of southern Indiana about September 20, but not till September 25 along the lower Ohio river bottom.

Cool autumn weather, daily normals below 50° , commences about October 20 in northern Indiana, during the last week of October in most of central Indiana, and during the first week of November in southwestern Indiana.

The season of frequent killing frosts commences about October 10 in most of the northern half of Indiana, and about October 15 in most of southern Indiana.

The average date of the snowfall of measurable amount (not snow flurries) is during the first week of November in northern and northwestern Indiana, about November 10 in most of central Indiana and during the third week of November in extreme southern Indiana. Although the amount of rainfall received in Indiana varies greatly from time to time, the variation is irregular; no particular season normally is especially dry or exceptionally rainy. Hence no discussion of the beginning dates of wet or dry seasons is appropriate here. (For most

of the world such seasons are as real and often much more significant than the seasons based on temperature contrasts.

Further details on the beginning dates of most of the types of seasons here considered, with data on their ending and average lengths, with many maps showing local contrasts within the state, are given in "Climate of Indiana," Indiana University Series 1944, 511 pp. The present summary considers, however, three sorts of seasons not there discussed, and brings together data presented in scattered chapters of that volume.

Summary

If the year is divided into four equal seasons on the basis of normal temperatures, they commence between the common calendar beginning dates and the "astronomical" beginning dates. For each of the seasons, the almost imperceptible break in the temperature curve occurs shortly after the first of the month. Winter commences on December 3, not December 1 or December 22; summer commences on June 7, not on June 1 or on June 21.

When the year is divided into fewer or more than four seasons, their beginning dates correspond only approximately with those just mentioned, and display more regional contrast within Indiana. Temperatures normals below 32° commenced soon after the first of December in northern Indiana but not until about December 22 in southern Indiana. Conversely if spring commences when the temperatures rise above 32°, it begins in early February in southern Indiana but a month later in northern Indiana. Considerable plant growth of hardy plants commences about two weeks later, for most of central Indiana about March 1. Mild spring commences during the first half of April in the southern half of the state, if daily normals of 50° is used as a basis. Most people feel that spring does not really come to Indiana until April. The season normally lacking in killing frosts commences for most of Indiana late in April, but not till May in parts of northern and northeastern Indiana. The season of active growth of corn (daily normals of 55°) commences about the time when killing frosts cease to become normal.

Summer (normals of 68°) commences somewhat before June 1 in southern Indiana but not until the second week of June in the northern half of the state. Hot summer (normals of 75° or higher) commences about the summer solstice in the southern one-eighth of the state, but not until after July 10 in the northeastern third. Autumn, if defined as the quarter between summer and winter in temperatures, commences about September 8. The daily normals fall below 68° in central Indiana, also about September 8, but notably later in the southern and earlier in the northern parts of the state. Cool autumn (daily normals below 50°) commences about a month after the autumnal equinox in northern Indiana, six weeks after in southern Indiana. The season of killing frosts commences about three weeks after the equinox in central Indiana, but four weeks after in southern Indiana. The first snow falls in central Indiana usually during the first week in November.