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Drought-Loving Insects

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What's Buggin You Now?

Grasshopper swarms were frequent during the 1930's.
photo credit: Marshall Co., Kansas, Historical Society

Droughts are defined as long periods of abnormally low rainfall that adversely affect growing conditions. What do you get when you couple this situation with above-average temperatures and low subsoil moisture? A more severe drought, that's what!

Plants are among the first living things affected by drought. And plants affect a lot of other things, including the animals that feed on them and the financial success of grain and livestock producers. And that, in turn, affects people who consume farm products. In other words, droughts can, and often do, affect living conditions for many people.

Humans have had to deal with droughts throughout history. Major droughts have been recorded from the time of the biblical Abraham, around 1900 B.C., to the famine in the Horn of Africa in the 1980s. The U.S. experienced the Dust Bowl in the 1930s, and, just last year, a larger portion of our nation's land mass was affected by drought than at any other time in history.

Maybe the 2012 U.S. drought was to be expected. It seems as though the central part of the continental U.S. has a major drought every 20 years or so. Until last year, 1988 that was the dry-weather reference point, as in, "I remember how dry and hot it was in the summer of '88 - it was real scorcher!" Now we have to say something like, "Ah, 1988 was nothing compared to 2012!" And the data will back you up. All

kinds of high temperature and low rainfall records were set in 2012.

One of the questions entomologists are often asked following unusual weather events such as droughts is, did the weather wipe out a lot of insects? The answer is yes, but they'll still be here next year. A wiseacre might answer that insects have been on the earth for some 350 million years, and the 2012 drought year was probably not the one that wiped them out.

In truth, many species of insects don't do real well when exposed to extreme weather events. Heavy rains cause a lot of insect mortality as do hot and dry conditions. Eggs and newly hatched larvae are more susceptible to being killed by unusual weather than are other insect stages, such as adults or pupae.

Grasshoppers helped destroy remaining plants during Dust Bowl.
Photo credit: Marshall County, Kansas, Historical Society

However, a few species of insects do prosper in hot and dry conditions. Some of the most notable are grasshoppers. One grasshopper, known worldwide as the migratory locust, is a good example. Migratory locusts have wreaked havoc over the Middle East and parts of Africa for thousands of years. In fact, it is this insect that constituted one of the plagues of biblical times.

During the extremely dry conditions of the Dust Bowl years, grasshoppers are said to have destroyed what little plant material existed in the drought-stricken landscape. In addition to devouring their normal plant food, these hordes of hoppers were said to have chewed away at almost anything: clothes hanging on the line, horse collars and even pitchfork handles.

One of the primary reasons that grasshopper populations reach high levels during dry conditions is that the insects are not killed by disease. Insects, like all other animals, die from disease outbreaks. One such disease of grasshoppers is a fungus that does well under moist soil conditions. That is the reason that drier regions of the U.S. such as Oklahoma, Kansas, Nebraska, and the Dakotas consistently have more grasshopper problems than regions with more rainfall. And it is also the reason that grasshopper populations tend to be higher in drier years when compared to wetter years in the same area.

Another insect that increases during hot and dry environmental conditions is the chinch bug. This is probably not surprising in that the

chinch bug has been described as a sun-loving insect.

The chinch bug feeds only on plants of the grass family. It can be a pest of lawns but historically was a major pest of corn. Back in the 1930s the chinch bug would migrate in May and June by walking from wheat fields to begin feeding on corn. One of the control approaches in those days was to place a creosote barrier on the soil to repel the bugs and keep them out of the crop that was to be protected.

Chinch bugs thrive in hot, dry weather.
Photo credit: Texas A&M University

I don't know about you, but I'd like a little more rain this year. A good grasshopper and chinch bug crop every 20 years or so is enough!

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