



Corn Pollination

When temperature and moisture conditions favor normal plant development, tassels emerge and begin to shed pollen one to three days before silking. Pollen shedding generally occurs early to mid-morning, after the dew has dried off the tassel. Since pollen is light, it may be carried by the wind one-half to one mile, but most will fall within 50 feet of the tassel. Pollen shed occurs for about one week; peak production is usually on the third day. It is estimated that one tassel can produce between 2 and 5 million pollen grains.

Pollen shed is not a continuous process. It stops when the tassel is too wet or too dry, and begins again when temperature and moisture conditions are favorable. On a typical mid-summer day, the peak pollen shed occurs between 9 and 11 a.m. Under favorable conditions, released pollen will remain alive for 24 hours.

For pollination to occur, silks must be receptive during the time that pollen is shed. The first silks to emerge are those from the base of the ear progressing to the tip. Pollination occurs when a pollen grain lands on a receptive silk. After pollination, the future kernel will start to develop in approximately 30 hours.

Adequate moisture is extremely critical for successful pollination. When moisture is short, silks may grow very little, if at all, during the day. Most often, poor pollination results when the silks were not receptive the same time as pollen was available (often described as a poor nick in fields). Very high plant populations will delay silking more than pollen shed, especially under moisture stress. Silks also dry rapidly under hot, dry conditions and may not have enough moisture to support pollen germination and subsequent fertilization of the ovule.

Failure of ears to set kernels during pollination can be attributed to 1) pollen killed by high temperatures 2) blasted tassels preventing pollen shedding 3) silks not receptive to pollen and 4) tassels shedding pollen before silks emerge. In most cases during hot weather, poor pollination is a result of tassels shedding pollen before silk emerges.

CREDITS: Iowa State University