IS TRIPPING NECESSARY FOR SEED SETTING IN ALFALFA?  

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IN THE literature dealing with the necessity of tripping the alfalfa flower to set seed there is no unanimity of opinion. Brink and Cooper (2) and Carlson (4) state that a large percentage of flowers set seed without tripping. On the other hand, Armstrong and White (1) and Piper, et al. (6) state that there can be practically no seed set without tripping.

The cause of tripping is equally confusing. Certain literature would lead the reader to believe that a very large amount of automatic tripping occurs, i.e., release of the staminal column by some inner force of the flower. Other workers apparently hold that wind and rain storms or bright sunshine may cause a lot of tripping, and still others hold that insects are the major agency causing tripping. Undoubtedly some of these workers believe that a combination of the above factors, or others, have a bearing upon the sum total of tripping which takes place, but there has been no clear-cut data to show the relative importance of each. Whether it is necessary for alfalfa flowers to trip to set seed under ordinary conditions is of great practical importance both from the standpoint of investigational work and recommendations for optimum seed production.

Tripping may be defined as the release of the staminal column from the keel of the flower. The staminal column includes the style, stigma, and part of the ovary enclosed or surrounded by the 10 stamens and diadelphous filaments. This release must take place when the flower is in a turgid condition and thus it is accompanied by an explosive force as though a spring under tension is released.

During the past three years a considerable amount of work has been done in Nebraska on this subject by L. A. Clark. His work, as yet unpublished, along with other observations made by the writer, led to the study which is herein reported. The present paper presents the results of studies at the Scotts Bluff alfalfa breeding nursery and of a cooperative survey made in several of the seed-producing areas of the United States during the season of 1939.

The data given herein are reported primarily for the purpose of focusing attention on the possible importance of tripping as related to seed production in alfalfa. It is hoped the discussion will stimulate observations on this phase of the problem since, if these observations...