FACTORS WHICH INFLUENCE THE NICOTINE CONTENT OF TOBACCO GROWN FOR USE AS AN INSECTICIDE

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The high efficiency of nicotine as an insecticide for many types of insects which injure horticultural plants has aroused much interest in the possibility of securing more adequate supplies of this material at less cost than is possible at the present time. In South Africa, (1) the government has established experimental mills for the production of tobacco extracts and has undertaken extension field experiments with the view of producing tobacco having a high nicotine content for use in the manufacture of these extracts; in the hope of not only supplying the home demand for this material but also of later establishing an extensive export trade in it. In the United States, the preparation of tobacco dusts and of nicotine extracts for insecticidal uses has thus far been chiefly a by-product industry. But the demands for these products is increasing rapidly and more efficient and economical sources of supply and methods of preparation are urgently needed.

In the past, the chief interest in the nicotine content of tobacco has naturally been in connection with its effect upon its smoking qualities. In 1909, Garner (2) discussed in detail the matter of the relation of the different forms of nicotine and of the organic acids which are formed in tobacco upon the so-called "strength" of tobacco when used for smoking purposes. Following this, most of the experimental work which has been done with tobacco has had in view the reduction of total nicotine, or of its change through fermentation in "curing" into forms which are less obnoxious to most smokers.

Recently, however, the discovery that the species of tobacco known as Nicotiana rustica generally contains much higher percentage of nicotine than do the varieties of N. tabacum which are commonly grown for smoking purposes, has suggested the possibility that this kind of tobacco might be grown especially for use as an insecticide either in the form of tobacco dust or as some nicotine preparation made from it. The entomologists, the insecticide chemists and the agronomist at the New York State Agricultural Experiment Station

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3 Reference by number is to "Literature Cited," p. 467.