METHODS FOR INSPECTION OF COMMERCIAL LEGUME INOCULANTS

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METHODS for inspection of legume inoculants have varied greatly with progress in the knowledge of the root nodule bacteria. Recent interest in standardization of procedures suggests the need for a review of the more important facts relative to their development. Furthermore, additional information which indicates that bacterial strains vary in their ability to help the host makes necessary a reconsideration of the whole technic. This review is a survey of the more important papers concerning methods for legume inoculant inspection.

Because the division seems logical, the time since Nitragin was first sold and the present is divided into two periods. The first is characterized by the solution of many of the fundamental problems necessary for the manufacture of legume inoculants and by the beginning of legume inoculant inspection (Galloway, 14). It is therefore called the period of fundamental development (1895 to 1917). The second period includes (a) the time of general acceptance of the idea of inoculation with artificial cultures, (b) the growth of the industry, and (c) the development of the practice of routine inspection. This period can best be designated as that of practical development (1918 to date). The year 1918 is taken as a logical point of departure from the early attempts to manufacture artificial cultures because of an increased interest in inspection and especially in methods (Fellers, 34, and Noyes and Cromer, 37). In fact, the investigations in the early part of the second period really represented a discovery of the need for routine inspection by state governments. A few years later, legislatures began to provide for inspection upon a routine basis.

GREENHOUSE METHODS

At the present time the greenhouse technic is the most important part of the inspection procedure. Only recently, however, have methods of growing legumes in pots improved to such a point that contamination with extraneous legume bacteria is no longer a serious factor. In spite of sterilization of sand, seeds, and water, the first tests were often confused by contaminations (Dawson, 9, Stevens and Temple, 18, Feilitzen and Nyström, 30, and Temple, 33).

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3Figures in parentheses refer to "Literature Cited", p. 665.