Availability of Ammonium Fixed in Difficultly Exchangeable Form by Soils of Semiarid Regions

C. A. Bower

In a previous paper (2) it was reported that under moist conditions some soils of semiarid regions are capable of fixing relatively large amounts of applied NH$_4$ as well as K in difficultly exchangeable form. Because one of the soils previously studied has been extensively employed for experimental work at these Laboratories and requires nitrogen fertilization for satisfactory plant growth, the question of the availability of fixed NH$_4$ to nitrifying bacteria and higher plants became of interest. While considerable data regarding availability of difficultly exchangeable K in soils have been obtained in recent years, similar information regarding difficultly exchangeable NH$_4$ is meager. The principal data on the latter appear to be those of Chamainade and Drouneau (3), who found that nonexchangeable NH$_4$ tends to accumulate in some French soils.

1 Contribution from the U. S. Regional Salinity and Rubidoux Laboratories, B. P. I. S. A. E., A. R. A., U. S. D. of Agriculture, Calif., in cooperation with the 11 Western States and the Territory of Hawaii.

2 Senior Soil Scientist.