

REPORTS

ABSTRACT OF A PLAN FOR COLLABORATION¹ BETWEEN COLLEGES AND UNIVERSITIES AND THE DEPARTMENT OF AGRICULTURE WITH SPECIAL REFERENCE TO TRAINING REPLACEMENTS DURING THE WAR

I. The Problem

THE war has made necessary many readjustments in recruiting, employing and training people for Government Service. The problem of continuing to operate effectively with fewer and less qualified personnel, and in many cases, with expanded and new agency functions, confronts every bureau and office in the department. The successful prosecution of the war and adequate maintenance of the essential functions of the Department of Agriculture depend upon trained personnel. As is the case with other agencies of Government, the department faces a serious shortage of trained workers. From the experienced personnel, the various bureaus of the department have contributed heavily to the armed forces and to other agencies. For the fiscal year 1942, the department experienced personnel separations numbering approximately 28,000 or 35.6 per cent. In contrast, for the period from 1935 through 1940, the Department of Agriculture had experienced personnel separations of about 10 per cent. each year, resulting in 6,000 to 8,000 new employees annually. How critical the shortage of personnel will become during the present emergency no one can predict.

The department normally employs large numbers of college-trained people. As of June, 1940, 41 per cent. of the employees in the department were college graduates. An additional 23 per cent. attended college, but did not graduate. Thus, approximately two thirds of the employees, as of June, 1940, had had educational experience in colleges and universities.

Work pertaining to the war effort must be done quickly and effectively, hence personnel must be recruited and trained quickly. Training is basic to the department's war strategy. And training itself must be geared to wartime conditions; it must be as up-to-the-minute as the latest airplane or gun. Some of this training can be and is being done after the new employee is on the job. However, it is recognized that pre-service training would reduce materially our recruitment and training problems and would increase the efficiency of those units having vacancies.

We are fully aware that colleges and universities already have made major readjustments to meet the war emergency. The problem before us then resolves itself into: What further can such educational insti-

¹ Prepared by Department Section of the Land-Grant College Department Committee on Training for Government Service, October 24, 1942.

tutions do, for the duration of the war, to help train personnel for positions in the Department of Agriculture.

II. Developments Leading to Plan for Collaboration between Colleges and Universities and the Department of Agriculture

Since 1936, the Land-Grant College Department Committee for Training for Government Service has been active in developing means of collaboration between colleges and universities and the Department of Agriculture. In recent months, the Department Committee has worked on the development of a plan for recruiting and training replacements for technical and professional positions in the Department of Agriculture during the war emergency, with special reference to the part which colleges might do. A number of bureaus of the department have been cooperating with colleges and universities for several years in training, recruiting and employing personnel. Such bureaus include Office of Experiment Stations, Forest Service, Bureau of Plant Industry, Bureau of Entomology and Plant Quarantine, Farm Security Administration, Bureau of Animal Industry, Soil Conservation Service, and Extension Service. Due to the emergency, we are now faced with the necessity of increasing emphasis on the type of training which will materially facilitate the task of getting the job done.

The committee developed the current report with the hope that maximum use may be made of the facilities of educational institutions in meeting the increasing need for trained personnel of the department during the emergency, looking forward also to the needs which will have to be met following the war.

III. Opportunities for Collaboration between Colleges and Universities and the Department of Agriculture

It is recognized that colleges and universities are encountering increasing difficulties with respect to losses in instructional staff. At the same time, they have been assigned additional specific responsibilities by the Army and Navy for training for the armed services. It may well be that arrangements can be made for further cooperation between the colleges and the Department of Agriculture to their mutual benefit. Such cooperation may be promoted through (1) redirecting emphasis of present courses for regularly enrolled students; (2) initiating special courses to meet specific needs of (a) women, (b) the physically handicapped and (c) older men not subject to Selective Service.

IV. Organization for Facilitating Collaboration

This plan anticipates mutual benefits. *First*, the

colleges and universities may thereby develop a more complete understanding of the organization, policy and activities of the Department of Agriculture, which in turn reflect the type of persons needed. *Second*, the Department of Agriculture may develop a better understanding of the problems confronting colleges and universities in training and placement.

The Department of Agriculture could arrange to send regularly to the colleges and universities current information on the department's program with respect to: (1) organization, policy, and activities of the department; (2) positions to be filled in the department including replacements; (3) educational requirements for such positions; (4) specific information regarding basic training needed; and (5) opportunities for service and permanent careers in USDA.

Colleges and universities may want to make use of information thus provided: (1) in college freshman orientation programs; (2) in college counseling programs; (3) in plans for placement; and (4) in the redirection of emphasis of course content to meet the needs of those students anticipating a career with the Department of Agriculture.

V. *Suggested Procedure for Analysis and Treatment of Wartime Training Needs*

An outline of approach for determining training needs for personnel replacement in time of war and effective methods of meeting these needs is given in the full report "A Plan for Collaboration between

Colleges and Universities and the Department of Agriculture with Special Reference to Training Replacements during the War," of which this is an abstract.

It is there set forth that the Department of Agriculture: (1) determine personnel needs by jobs; (2) analyze the job to be done; (3) determine the source of replacements; (4) determine qualifications of replacements; (5) determine differential in training needed by replacements; (6) determine where such training can best be given; (7) determine that part of training which colleges could perform; (8) furnish colleges with detailed information concerning specific training needed.

To illustrate how this formula can be applied to any personnel situation, the cases of the AAA County Administrative Officer (Appendix C) and Assistant Scientific Aid (Appendix D) are explained in detail in the full report.

If it is found that a plan such as the one given is practical and feasible, the colleges and the Department of Agriculture should work out essential administrative details and proceed as soon as possible to develop the best methods and procedures for getting the job done.

The Department of Agriculture can not afford to be hampered by lack of trained personnel in this emergency. It is essential that our allies, our men in the armed forces and our civilian population may continue to eat.

SPECIAL ARTICLES

CAROTENE. I. PRELIMINARY REPORT ON DIPHENYLAMINE AS A STABILIZER FOR CAROTENE

CERTAIN commercial feed preparations for poultry and animals have been fortified with fish liver oils to supply vitamin A needed for improved growth and higher vitality. The present scarcity and increased prices may limit the use of such oils as feed supplements. Carotene, a precursor of vitamin A, is plentiful in green and yellow plant material and may be extracted and used to replace fish liver oils in food and feed preparations.

Carotene, being an unsaturated compound, is very readily oxidized, thereby losing its provitamin A value. The prevention of this oxidation is an important problem in the use of carotene as a vitamin A supplement for feeds.

It has been shown by Fraps and Kemmerer¹ that certain feeds fortified with carotene may lose as much as 70 per cent. of their carotene content in 16 weeks

of storage at 28° C. These men also showed that fish liver oils added to feeds lost 79 to 100 per cent. of their vitamin A potency after four weeks' storage at either 7° C. or 28° C. Mitchell and Lease² have decreased the loss of carotene in dried powdered sweet potatoes by adding 10 per cent. of crude cottonseed oil. However, when stored at 37° C. the material so treated showed a rapid loss of carotene after 90 days and soon contained less than the untreated material.

A preliminary investigation has been made to determine the stabilizing effect of about 100 substances of antioxidant character on carotene. In these tests it was found that diphenylamine had the greatest stabilizing effect. More extensive tests are being made on these substances, especially diphenylamine.

Diphenylamine has been used as a stabilizer in cellulose nitrate³ and soap⁴ but has not been used in food

² J. H. Mitchell and E. J. Lease, South Carolina Agr. Expt. Sta. Bull. 333, 1941.

³ W. W. Bradley, *U. S. N. Inst. Proc.*, 41: 125-9, 1915.

⁴ R. E. Divine, U. S. Patent No. 1,542,438, June 16, 1925.

¹ G. S. Fraps and A. R. Kemmerer, Texas Agr. Expt. Sta. Bull. 557, 1937.