I. CONTROLLING QUALITY OF CROPS

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The producer of two blades of grass where but one blade grew before has been called a benefactor of mankind; but in these days of much talk about over-production, doubt has arisen in many minds as to the beneficence brought about through increases in production. It has seemed timely, therefore, to focus our attention just a bit more narrowly upon the need for a better blade of grass. In suggesting this symposium on the control of quality in crops my purpose is not necessarily to suggest that we lay any less emphasis upon the control of yield, but that in all production studies, and in all experimentation related thereto, we, as agronomists, should place relatively more emphasis upon the quality of the crop than has been our custom.

Quality in crops may be defined as special suitability for the specific purpose for which the crop is utilized. Our discussions will take on a clarity not otherwise obtainable if we will keep constantly in mind what we are trying to control. A discussion, for example, of controlling the quality of wheat should keep in mind that wheat is used for such diverse purposes as bread, pastry, and alimentary pastes, and that the wheaten product used for each of these special purposes must have specific qualities. These discussions should recognize also that whenever any other substance enters into a manufactured product than the particular raw product under discussion, that this other substance has its effect upon the quality of the manufactured product. Let me go to the bread basket for an illustration. In addition to wheat flour, bread contains milk or water, added fats, salt, yeast, and frequently yeast foods. The quality of the loaf of bread is the resultant of the chemical, physical, and biological interplay of these several components. Component "wheat flour" may be kept constant both with respect to quantity and quality, and yet through variations in other components a quite different loaf of bread may result. Or component "wheat flour" may vary as to quality, and yet the resulting loaf may still be brought up to standard, within limits, through a controlled variation of the other components used.

Take another important product largely used for human food—the potato. What constitutes quality in a potato? A potato may be ideally adapted for baking, but be quite unsuitable for boiling, and

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