Chapter 3

Management of Crop Breeding

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How do you actually do crop breeding? As with any other profession, you must have technical knowledge. But the good crop breeder must also be a manager, must be able to make decisions, to make plans, and to carry them out, and to learn from successes and failures. These abilities do not come from the technical knowledge of breeding, nor do they come easily from practical experience. This chapter provides tools for planning and breeding new crop cultivars. It is written from the viewpoint that crop breeding is an application of management.

Imagine that today is your first day on the job. You, as a new crop breeder, have learned the mechanics of genetics. Through years of study you have trained yourself in agriculture. Let us assume that you know how to grow plants, and have acquired other technical skills—you can make artificial hybrids and can design and analyze a field experiment. You are familiar with the assigned crop and have made a commitment to know it thoroughly. You are competent to select germplasm and develop new hybrids. Your challenge is to plan your breeding program and carry it out, based on appropriate management procedures.

One of the best ways to learn about crop breeding is to study the work of successful breeders. You will find many interesting ideas in their technical articles. Check the “Materials and Methods” section and you will learn some of the “tricks of the trade”, and in some cases see how an overall program is organized. Unfortunately, crop breeders do not spell out all of the details of what they do and why they do it. So you should also associate personally with successful crop breeders, as your instructors, supervisors, or colleagues. By combining technical knowledge and practical experience you should develop a strong crop breeding expertise. Although technical limitations of breeding will determine many specific decisions and operations, the problem-solving process is the universal activity of all technical professions. Think of yourself now as a manager. Your success as a crop breeder depends as much upon your ability to organize, to direct, to follow up, and thereby to control, as it does upon your technical proficiency.

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