

# Seed Selection and Harvesting Can be Begun in the Home Garden in February

By C. L. NAPIER, Orchard Instructor, Department of Agriculture, Hastings

WITH the maturing of some of the earlier-planted crops some home gardeners will be considering selecting and saving seed in readiness for next planting season. Plant selection for seed production begins early in the life of the plant, so it will not be possible to make selections from some crops growing at present, but home gardeners should be able to select and set aside plants of later-maturing crops. The following information should enable gardeners to attempt seed saving on a wider scale during subsequent seasons.

**S**ELECTION of seed can be most interesting and fascinating, but unless a few basic principles are first understood, unexpected results may appear in subsequent crops. The chief advantages in home selection of seed are that the gardener can select strains of plants according to his own ideals, and more important, he can select those most suited to his particular locality.

As New Zealand's climatic and soil conditions are extremely variable, not all "popular" varieties of vegetables can be claimed to be suited to Dominion conditions as a whole. Careful selection of varieties will, however, permit the gardener to develop gradually strains within those varieties most suited to his particular locality. In districts with short growing seasons, for instance, quick-maturing forms would be valuable as also would be those that could be raised in winter.

## Precautions in Selecting Plants

Before seed saving can be successful there are several important factors that must be considered. First and most important is that of purity of line; that is, a strain of plants that will produce offspring identical with, or better in some respect than, themselves. Variation of strain from generation to generation is usually brought about by cross-pollination. As some kinds of vegetables cross very readily it is essential to isolate those from which it is intended to save seed.

For the purpose of seed saving, vegetables can be classified into three main groups as follows:—

**Self-pollinated** (some cross-pollination, but percentage negligible): Broad and french beans, tomatoes, peas, lettuce.

**Self-pollinated** (cross-pollination often occurs under natural conditions): Pumpkins, marrows, cucumbers, celery, runner beans, carrots and parsnips (may cross with wild types).

**Natural cross-pollination:** Asparagus, broccoli, cabbage, kohlrabi, onion, radish, spinach, silver beet, spinach beet.

Seed from the first group may be saved without special precautions being taken during the growing life of the plants. Resultant crops will not show any appreciable deviation from the original strain, but annual reselection of desirable types will tend gradually to improve the strain.

## Enclosing Flower Heads

Seed from the second and third groups will tend to give small and

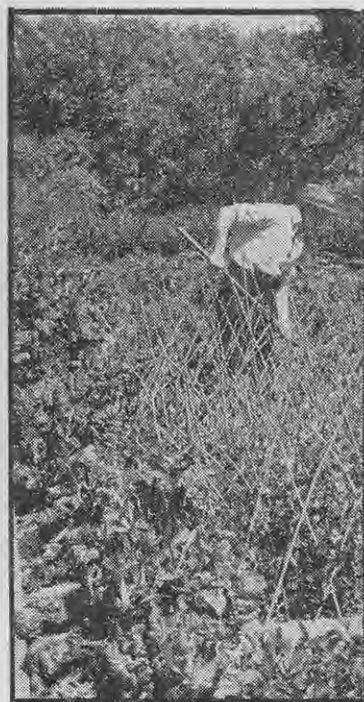
large percentages respectively of off-types unless some form of isolation is practised. In commercial practice, distances of up to half a mile between the plants and those with which they might cross-pollinate are recommended, but such isolation is impossible in home gardens. The retention of purity of strains is therefore difficult with vegetables in groups two and three. Some means of enclosing the flower heads at pollination time should be adopted to prevent cross-pollination. Such procedure is reasonably easy with plants such as cabbages, carrots, onions, and beetroot, which have a single seed stalk or a small number of seed stalks and fairly compact seed heads.

The two simplest forms of enclosure are bags to completely enclose the seed head and wooden frames covered with muslin or similar material to cover the complete plant. Bags can be made of a transparent paper or of cotton material such as gauze or muslin. Whatever material is used, it should allow some degree of air circulation and yet not be open enough to allow the passage of pollinating insects. Covering of the seed heads or plants must be carried out before the flowers open, otherwise crossing may occur. A reasonable circulation of air is required, as moist or very hot conditions within the enclosure will tend to reduce even self-pollination. Small pinhole perforations made in paper bags allow ventilation and assist cooling during hot weather. Paper bags are not satisfactory during wet weather. Muslin bags, although more satisfactory in some respects than paper bags, tend to become limp in wet weather. A frame of light bamboo or wire, inserted before the bag is slipped over the seed heads, will prevent the bags from sagging.

Bags must be sufficiently large to allow for the elongation of vigorously growing seed heads. This is best achieved by allowing plenty of room when making the bags and by securing them as high up under the seed head as possible. If a pad of cotton-wool is wound round the seed stalk, there will be little danger of damage to the stalk and the cotton-wool will assist in preventing entry of insects. Heavy seed stalks may require staking, and if the stakes are tall enough, the tops of the bags can be secured to them, thus providing additional support.

## Isolating Complete Plants

Wooden frames covered with muslin or similar material are ideal for isolating complete plants, and they can be



[Green and Hahn Photography Ltd. photo.]

constructed to any shape or size. With frames, as with the bag type of enclosure, sufficient room should be allowed for further elongation of the seed stalk. Wooden frames isolate the complete plant and a healthier line of seed is assured, as no insect is able to feed on the foliage or infect the plant with disease. Some virus diseases are seed borne. The same viruses may also be spread by insects such as aphides. The importance of the best possible isolation is therefore evident.

## Plant Selection

Selection of plants for subsequent saving offers great possibilities to the gardener for plant improvement. Selection over a period of years can quite possibly change entirely the characteristics of a particular kind of vegetable. Many home gardeners who find enjoyment in selecting something different follow such practice. The many kinds of vegetables grown cover a very wide range of characteristics, desirable or otherwise, that the gardener should look for. Among the most desirable characteristics are increased cropping capacity, resistance to disease, uniformity and purity of line, and ability to stand hot, cold, dry, or wet conditions.

Selection should begin from the time a plant is planted out. Plants showing undesirable characteristics should not be retained for seed production.

Two methods of selection normally are adopted; the first is termed single-plant selection and the other mass selection. In the first method single plants possessing the most desirable characteristics are selected; in the