PROPAGATION OF ACERS FROM SEED

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The following notes have been made with reference to the species listed below:

Acer campestre, A. cappadocicum, A. circinatum, A. crataegifolium, A. davidii, A. forrestii, A. ginnala, A. griseum, A. grosseri, A. grosseri var *hersii, A. palmatum, A. palmatum* 'Atropurpureum' *A. pennsylvanicum, A. platanoides, A. pseudoplatanus, A. rufinerve* and *A. trautvetterii.*

Source of seed. Collection of seed from local sources is desirable generally; not only is it possible to collect at the optimum time but the seed can be selected from trees with desirable characteristics.

Seed of a limited range of *Acer* species can be purchased, usually from foreign sources, but results from these are often variable. This variability can be attributed to the drying out of the seed coat which, in turn, leads to the embryo becoming completely dormant. The drying of the seed does not necessarily mean it will not germinate, but germination tends to be erratic.

Seed collection. Due to variability in the time of flowering of the various *Acer* species, seeds are ready for collection over a long period, usually during September and early October. It is important not to follow the calendar too closely, but be guided by the appearance of the "keys" on the trees. The seed should be collected before the seed coat hardens. The colour of the "keys" is the best guide, and for the majority of the green-foliaged species it should be when the wings of the "keys" are yellow brown in colour. For *A. palmatum* 'Atropurpureum', the wings of the "keys" should be pink in colour.

After collecting the seed, it should be kept cool and prevented from drying out. This is easily achieved by placing the seed in polythene bags and storing in a cool shed. In order to facilitate sowing, the seed should be cleaned, removing all seed stalks and separating the "keys" singly

Siting of the seedbed. Frost and exposure to drying winds in the spring are damaging to germinating *Acer* seedlings; this should be borne in mind when selecting the site. Generally an open aspect is desirable and, for satisfactory development of the seedlings, the seedbed should be sited on soil which is easily worked and free draining. It is an advantage if the seedbed is raised above the surrounding area giving a greater depth of cultivated soil.

Preparation of seedbed. This operation should be carried out well in advance of sowing, allowing sufficient time for the natural settling of the seedbed. When preparing the seedbed the aim should be to encourage a well-branched and fibrous root system, ideal for transplanting. The seedbed should be prepared by incorporating liberal amounts of well-decomposed leaf mould or peat. If the soil is heavy, sharp grit should be added to aid drainage further.

During the preparation ensure that the soil in the rooting zone is not allowed to remain in large clods as this will not only inhibit root development but lead to the damaging of the root system at lifting time. Final preparation of the seedbed prior to sowing would be firming and raking level.

Sowing rate. Before sowing it is useful to assess the potential of each batch of seed by knowing the proportion of viable seeds in each sample This can be estimated by taking a random sample of 50 or 100 seeds (more if seed is plentiful) and cut through the seed, observing whether or not the embryo has developed.

Having carried out this simple practical test, the aim should be to sow the seed to produce seedlings as large as is economically possible. The viability figure must also be modified by the field factor (the estimated losses after sowing until establishment due to soil and climatic conditions) to give the final sowing rate.

Example—*A. platanoides*

Viable seed per batch	80%
Field Factor	60%
Number of plants required per sq yard:	300

Number of seeds per sq. yard $\frac{100}{80} \times \frac{100}{60} \times \frac{300}{1} = 625$

Seed sowing. It is important that the seed be sown as soon as possible after harvesting. The usual method is to broadcast seed evenly over the seedbed. The seed should then be pressed into the soil surface and covered with ½ in. to 1 in. of sharp grit (¼ in. to ⅜ in. grade). The depth of covering depends on the size of seed. This generous dressing of grit is necessary in order to anchor the seed in the seedbed and prevent erosion by winter weather Covering with grit has several advantages. It prevents surface capping allowing easy penetration of water, conserves moisture, gives good surface aeration and enables weeds to be removed easily. Under most circumstances it will be necessary to protect against birds, mice, etc.

Frost protection. Depending on species and the weather conditions in late winter, germination can be expected from mid-March onwards. The seedlings are easily damaged at this stage and some method of frost protection would have to be employed.

Shading. From germination and throughout the first season it is necessary to shade all species mentioned except *A. campestre, A. platanoides, A. pseudoplatanus* and *A. trautvetteri.* Materials giving 50% shade are ideal.

Irrigation. Apart from the initial watering in, no artificial application of water is usually required until the following spring. However, after germination regular watering will be necessary to keep the seedlings growing in order to promote a vigorous shoot and root system

Weed control. Removal of weed competition at an early stage is vital. Due to the rather loose nature of the surface of the seedbed, weed seedlings are easily and quickly removed by hand. If a weed population builds up before germination commences a contact herbicide, such as Paraquat, could be used to burn off surface foliage.

In conclusion, the importance of early collection and sowing cannot be over emphasized. It is this attention to detail, not allowing the seed to dry out, that ensures an even germination the following spring. If seeds of such plants as *A. campestre, A. circinatum* and *A. palmatum* are allowed to dry out germination will not take place until the second season.

PROPAGATION OF EXBURY AND KNAPHILL AZALEAS

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Cuttings of Exbury and Knaphill azaleas are taken during late May and early June. The first cuttings are from container plants grown under glass, followed by soft cuttings from outside plants Cuttings generally are about 3 inches long and, from a long shoot, two cuttings can be made. The apex bud is removed from all cuttings and the leaves reduced to about five.

The cuttings are rooted in old span-frames running north to south. The frames have heating cables with individual thermostats for temperature control. Prior to putting in the cuttings, these frames have a layer of sand over the cable, followed by one foot of leaves for drainage and for preventing the mixture from becoming too compacted and, finally, 6 inches of rooting medium, consisting of 75% sharp sand and grit and 25% medium Irish moss peat. The rooting medium is allowed to settle, given a drench of 1% IBA, diluted to 25 c c per pint of water. One gallon of this mix is watered over about three square yards.

The cuttings are then inserted at about 2 inch spacings; bottom heat is set to a minimum of 70° F and the cuttings are given a supplementary cover of polythene. Approximately 15 hours after the