TRANSPORTING TREATED STOCK

If treated plant material has to be transported any significant distance to the planting site, cover the roots with a suitable carrier or container, such as a plastic bag, to retain the gel around the roots.

RANGE OF APPLICATIONS

BROADLEAF ROOT DIP is beneficial for all sizes of softwood and hardwood trees and on all species of bushes and shrubs. It is also ideal for bare-root transplanting of vegetable crops and international transporting of bare-root plant material.

USE IN CONJUNCTION WITH BROADLEAF P4 FOR LONG TERM BENEFITS

It should be noted that bare-root dipping is intended to act only as an anti-desiccant to extend out-of-soil life and counteract transplant shock. It is not designed to replace the incorporation of Broadleaf P4 into tree-planting pockets, which will still be needed to supply roots with adequate moisture to support a sizeable leaf canopy over an extended period of time after transplanting.

Bare-root treatment with BROADLEAF ROOT DIP and planting-pocket incorporation of Broadleaf P4 can be used together in a complementary manner to great short and long-term benefit.

CONVERSION TABLE:

100 grams = 3.5 oz, 1 Kg = 2.2 lbs, 1 litre = 1.76 pints, 15 litres = 3.3 imperial gallons, 20 litres = 4.4 imperial gallons, 150 litres = 33 gallons, 200 litres = 44 gallons.

PRODUCT SPECIFICATION:

Chemical type: X-linked polymer.
pH of absorbed water: unaffected
Usable temperature range: 1 - 50ºC.
Drybulk density: 0.8 approx.
Time to achieve full absorption: 4 minutes
Particle size range: 75 - 200µ
For health and safety during transport, storage and use, please refer to separate MSDS.

Agricultural Polymers International Ltd
23 Callington Close, Bournmoor, Co. Durham, DH4 6BJ, U.K.
Tel: 44 (0)191 385 8348 Fax: 44 (0)808 1293628
E-mail: info@agripol.co.uk Internet: www.agripol.co.uk

Broadleaf Root Dip

- ✓ Coats bare roots with many days supply of water
- ✓ Prevents bare-root stock from drying out
- ✓ Maintains bare roots in prime condition
- ✓ Ensures survival between lifting and re-planting
- ✓ Promotes development of new rootlets and water-absorbing root hairs
- ✓ Is suitable for all species from seedlings to mature trees
- ✓ Can be **spray-applied** quickly, efficiently and economically to very large quantities of stock

You can see Broadleaf Root Dip protecting bare roots

WHY BROADLEAF ROOT DIP?

A long-standing need of the Landscaping, Forestry and Woodland Management industries has been to find ways in which stock losses during transport between the nursery and the final planting site can be eliminated. Countless transplants, whips, standard trees and ornamental shrubs die every year because they fail to survive transplanting operations. In addition, a lot of stock that does survive this transfer shows tip dieback and reduced growth rates in at least the first year following transplanting – an effect called "transplant shock".

A high proportion of the tree and shrub stock transplanted each year is in the bare-root condition and the main cause of death and poor performance is desiccation (dehydration) of the exposed root surfaces. The effects of even short-term exposure of roots to the drying conditions of the atmosphere can be so severe that many trees and shrubs are dead or moribund before they are planted out.

BROADLEAF ROOT DIP overcomes this problem by surrounding the bare roots of transplant stock with a coating of water-charged 'gel'.

This protective layer around the root system supplies the roots with sufficient plant-available moisture to last for days and prevent desiccation. It also significantly reduces transplant shock because the gel creates an environment immediately surrounding the root surfaces that is ideal for the development of new rootlets and water-absorbing root hairs.

BROADLEAF ROOT DIP is a safe, non-phytotoxic polymer supplied in dry, powder form. Simply add the powder to water and stir. The polymer powder absorbs the water and becomes fully hydrated into its usable, gel form in only a few minutes.

BROADLEAF ROOT DIP: Root-dipping young, bare-root chestnut tree (right-hand tree, at left), prevents root desiccation, keeps foliage fresh for 10 days, at 25°C, while undipped tree on left wilts within hours.

Thick coating of water-charged gel on roots, a great aid to bare-root transplanting.

HOW TO USE FOR BEST RESULTS

It is important to hydrate the powder to the right gel consistency, so that sufficient gel adheres to the roots to be effective but not so much as to be uneconomic.

The right consistency is when the powder has absorbed as much water as it can, with little or no surplus, unabsorbed water present. This is called equilibrium.

The powder will absorb approximately 200 times its own weight of soft water and approximately 150 times its own weight of hard water.

Example:	**Soft water**	**Hard water**
100 grams of powder absorbs	20 litres (approx.)	15 litres (approx.)
1 Kg (1000 grams) of powder absorbs	200 litres (approx.)	150 litres (approx.)

NB: 1 litre of water weighs 1 Kg.

A small experiment will determine the polymer-to-water ratio to achieve equilibrium. For example, add 1.5 litres of water to a suitable container and sprinkle 10 grams (about 2 teaspoonsful) of polymer powder into the container while agitating the water to prevent lumps from forming.

After about 3 or 4 minutes dip the bare roots of a plant into the gel. If the gel is too thick and too much adheres to the roots, add another 250 mls of water, stir, wait another 3 or 4 minutes and try again, adding more water if necessary until the desired consistency is achieved. If the gel consistency is too thin for adequate root-adherence, add more powder and mix, waiting 3 or 4 minutes before testing again. Then use the same final test ratio, e.g. 1 Kg to 150 litres for the full scale dipping operation. Suitable vessels for making-up the gel would be a bucket for 15 – 20 litres or a water butt or tank for 150 – 200 litres.

Where large numbers of stock are to be treated, this can be accomplished much more quickly by **spraying** *the gel onto the bare roots.*

Place the pre-hydrated gel into a sprayer of appropriate size, according to the quantity of stock to be treated and with a spray nozzle suitable to allow the gel to flow freely. Set out the stock with the roots readily visible, on racking or layered on the ground. Ensure that the gel is of a consistency that will permit adequate flow, coverage and penetration amongst the roots. To achieve this, it may be necessary to dilute the consistency more than would be suitable for the conventional dipping method of treatment.

- ✶ Bare-root transplants can be treated singly or in bundles with equal benefit but ensure the gel penetrates fully amongst the roots of bundled plants.
- ✶ The ideal time for treating is as soon after lifting as possible.
- ✶ Gel spills should be cleaned up as soon as possible to remove a slippery hazard.

HOW MUCH BROADLEAF ROOT DIP WILL BE NEEDED TO TREAT A GIVEN QUANTITY OF BARE-ROOT STOCK?

The amount of gel that can be loaded onto bare roots will depend on the type of root system (e.g. fibrous & bushy or spindly) and the consistency of the gel.

The following table shows the average quantity of bare-root stock that can be dipped with 1 kg of powder, hydrated in average quality water. ***Please use for guidance only.***

		GRADE	**QTY**
Transplants		45 - 60cm	1300
		60 - 90cm	1100
		90 - 180cm	900
FeatheredWhips		120 - 180cm	600
		180 - 240cm	500
Trees	Light Standard	6 - 8cm	400
	Standard	8 - 10cm	300
	Selected Standard	10 - 12cm	150
	Heavy Standard	12 - 14cm	80
	Extra Heavy Standard	14 - 16cm	60
	Extra Heavy Standard	16 - 18cm	20