Trial to assess the effect of Broadleaf P4 on growth and yield of Salad Onions

Crop: Salad Onion
Variety: White Lisbon, dressed against White Rot
Date Sown: 19th May
Seed Rate: 12 Kgs/ha
Broadleaf P4 Treatment Rate: 12 Kgs/ha
Fertiliser: 25:0:15, 500 Kgs/ha
Date Harvested: 26th July

The trial took place at Pershore College of Agriculture. The Broadleaf P4 was homogeneously blended with the seed on a 50:50 w/w basis and placed in the drill seed hopper. The onion seed and polymer remained well blended through the drilling process, movement and vibration during the drilling operation not causing a separation. The crop was drilled 2 cms deep. Soil type is sandy silt, prone to compaction. Conditions were dry throughout, with only one period of rainfall mid growing-cycle giving 9mm total precipitation. 25mm of irrigation was applied the week after drilling and a further 25mm the week before harvesting.

The polymer/seed mixture was placed in the centre hopper of a 5-row drill and the other rows in the bed system received no polymer, acting as controls. Four replicates of one-metre-long sections of the treated and adjacent control rows were selected at random, harvested and weighed separately. In each replicate the treated and control plots were adjacent to ensure localised soil conditions and all other factors than the polymer treatment were as similar as possible.

Results:

	Broadleaf P4	Control
Replicate 1	595.35 gms	382.72 gms
Replicate 2	609.52 gms	481.95 gms
Replicate 3	531.56 gms	460.69 gms
Replicate 4	708.75 gms	467.77 gms
Mean of 4 replicates	611.29 gms*(+36.36%)	448.28 gms**

* ± 36.6 Standard Error (Estimate of Variation)
** ± 22.3 Standard Error (Estimate of Variation)

CONCLUSIONS

These results indicate clearly that very low treatment rates of Broadleaf P4, when placed in close proximity to seed, can supply sufficient additional plant-available moisture to assist establishment and final yield of market crops. It is suspected that the hydraulic effect of the polymer, as it absorbs water and expands, has also had a beneficial effect in maintaining a more open soil structure, thus improving aeration to the the roots of the emerging crop. This can be especially useful in soils which are susceptible to compaction.

In this trial, for an outlay of approximately £56/ha on Broadleaf P4 a yield increase of over one-third will have brought a many-fold return on investment for such a high value crop.