

# fluid focus

product information

October 16, 2007

## Kelpak in grapes - various timings achieve different results!

*Do you need to improve fruit set in your wine grapes?  
Would you like to enhance colour or fruit uniformity?  
Would improving drought tolerance and nutrient accessibility be an advantage? Do you need a product with organic certification that can be applied at any time of the year?*

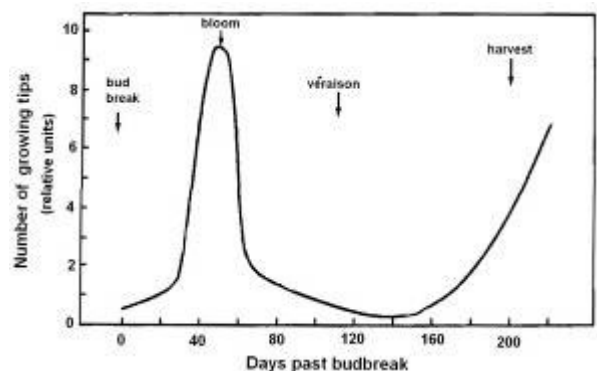


Poor berry set



Kelpak is derived from the world's fastest growing seaweed, *Ecklonia maxima*. It is used all over the world for its root growth promoting hormones, of which it has the highest auxin:cytokinin ratio on the market (11 mg/L auxins, 0.031 mg/L cytokinins). Kelpak is produced using a unique harvesting method which makes it possible to collect the raw material at a uniform growth stage. The sap is extracted using pressure only with no heat, frost or harmful chemicals used during the process, thus preserving the normally easily denatured auxin-based hormones.

Seaweed products are commonly used in vineyards. Often they are used for preserving general health of vines or as a vitamin, or microelement hit. Seaweed products contain microelements, amino acids, etc, but Kelpak is primarily used for its high concentration of auxins - hormones that are naturally produced in shoot tips, translocating to the roots to promote lateral root development.



Seasonal pattern of root growth in grape  
Mullins et al. (1992).

### Application timing for promoting root growth:

Grapes have two root flushes per season, the first is from bud break, peaking at flowering, and the second is around harvest peaking post-harvest. When roots are naturally in flush is the best time to apply Kelpak in order to further stimulate root growth and thus promote better drought resistance, water usage and nutrient uptake. This also helps vines to recover more quickly from different stress situations, resulting in better yield and quality.



## Application timing for better berry set:

Auxins promote more uniform flowering and increased fruit set, the latter partly through its role in pollen development. Auxins activate calcium channels in the plasma membrane, and pollen tube growth is also dependent on the calcium levels.

Research conducted in South Africa on Sultanina, Flame Seedless and Red Globe varieties showed that Kelpak treated grapes had higher average bunch weights than the control. No large differences were observed regarding berry diameter. This shows that the difference in bunch weight was due to variations in the number of berries on bunches, rather than any real berry size difference.



Germinating pollen



In a local trial last year at Griffith, NSW, Kelpak was applied pre flowering at 2L/ha. On Chardonnay, the yield increased from 7.7 t/ha to 8.25 t/ha which is 7% higher than the control. In this trial average berry diameter also increased from 9.8 mm to 11 mm.

## Application timing for colour enhancement:

A trial for colour enhancement was conducted in Mildura, Victoria on the table grape variety, Red Globe. Kelpak was applied three times at 3L / ha as a direct bunch spray. Treatments began at a berry size of 4mm repeated twice at 10 - 14 day intervals. Kelpak increased maturity on Red Globes by up to 14 days. Colour improved (see picture) therefore treated crop may be picked earlier thus maximising returns. The percentage of 1st pick pack outs was higher in the treated crop showing more uniform bunch and berry size. Yield improvement and additional vine health benefits were observed by the grower.



Untreated

Kelpak treated

Kelpak is the highest analysis liquid auxin on the market, with efficiency backed up in over 300 trials all over the world. Should you have any questions, please contact your local area manager or our agronomy team.

