



## Blueberry Mycorrhizal Research Update

Dear All

Carolyn and I have been designing the work program and marshalling our troops for an experimental onslaught on blue berries and their mycorrhizas. All the isolations were completed in Jan and we have begun working on the fungal cultures that have grown. Since we visited Tasmania first and we had the cultures available first Hannah Rudolf the honours student will be working on the Tasmanian isolates this year.

### Tasmanian Isolates

Firstly we have what look like mycorrhizal isolates from every plant sampled so that's good news. We have 200 isolates and Hannah is putting them on a special medium for storage under oil- this will be our reference collection. She is subculturing them all and grouping them by culture characteristics (colour/growth rate etc). She'll then sequence selected members from those groups so that we cover all sites and varieties. When this is completed we will be able to tell what fungi are present and whether there are differences in fungi between blueberry varieties and sites. Hannah will also check that the fungi we have are mycorrhizal by putting them back into seedlings and will set-up a nutrient trial to see which nitrogen source is preferred by each fungus we sequence. When this is completed we will be able to tell whether there are certain fungi which grow better with particular N sources. This information will be useful in understanding the response of these fungi under different fertilizer management practices in blueberry fields. We are lucky enough to have a work experience lab technician for 2 days a week for half the year so she will help Hannah making media, subculturing fungi and processing DNA samples.

### Victorian Isolates

All plants from all sites have what look like mycorrhizal fungi to me- so again good news. The girls below will be working on the Victorian isolates in the second half of this year. We will also compare the fungi we found in Victoria to those in Tasmania to determine whether there are different fungi on blueberry in the two states, and whether their abilities to use different N sources are similar.

### NSW isolates

These fungi were the last to be isolated and so need to grow a bit before we can do anything with them. So far it looks like the NSW plants have fewer fungi compared to plants from Tasmania and Victoria. I will work on these fungi in the second half of the year. We also plan to compare these fungi to the fungi we found in Victoria and Tasmania.

I also offered several third year projects on blueberry related research so we have The boys: Ned Water doing a survey of your production systems and fertiliser regimes and Rhys Patterson doing tissue culture (we will use these plants in 2008 for a plant/fungus nutrient trial) **AND** The girls: Svetlana Smart (whom some of you met) doing molecular identification, Celia Fairly investigating the nitrogen requirements of the fungi, Jane Turner clearing and staining roots to determine if they are mycorrhizal and putting the fungi back into seedlings.

### Funding

Carolyn and I plan to submit an application for an ARC Linkage Grant towards the end of this year. This type of grant requires some input from industry it can be 'in kind' \$\$ but real \$\$ are needed as well. I'll be in-touch soon for your input research objectives etc.

Cheers Cas & Carolyn