Fire and Its Use in Propagation—Inferno Combustion

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The process of burning off areas of scrub to promote regrowth has been practiced for a great number of years by "farmers", if they can be called that, in some of the warmer, drier regions of the world. Indeed, it has been taken to the extreme by Australians and Californians, if the news is anything to go by. This practice is also used to clean fields of daffodil foliage and other bulb crops; indeed, I burn off the dead foliage from my nerines each autumn before they start into growth.

I have noticed, as well as other observers, that there is a pronounced effect on the way that the bulbs flower following the fire. There are many references to very good flowering seasons after bush fires, especially in the bulb rich areas of South Africa.

The effects of clearing all shrub and other plant materials must be to let light in, plus the ash will be adding potash which bulbs enjoy. In addition, there must be chemicals in the smoke which trigger dormant bulbs into growth. Many bulbs will have been dormant for a considerable time period—some quotes from South Africa mention 40 years without seeing many of the species found after a fire.

We often stumble along for many years, seemingly in a "cloud of smoke," not really knowing why we are carrying out certain practices. Although a good burn-off on my bulbs does save many hours of cleaning dead foliage, keeps fungal infections to almost nil, wipes out snails and the odd mouse, plus the hairs on my legs, all this aside there is more. After burning off, tremendous numbers of seedlings appear, mostly weeds in cultivation, but in the wild an extremely wide number of species will grow after the first rains. In cultivation, it has been suggested and tried that a layer of leaves be spread over the sown seed of some species, i.e., *Anigozanthos, Erica, Helichrysum*, and many others, too numerous to mention. This is set on fire, sometimes germination results can be good, although this is not over-reliable, and it is not advisable to use plastic trays!

After a recent trip to South Africa and a brief conversation with Dr. Nevil Brown of Kirstenbosch Botanic Gardens, about the "smoke subject", and the research that he and others had been doing, I resolved to undertake further trials on returning to New Zealand. The method most smokers are using seems complicated. It involves sowing the seed in trays, making a poly tent, and filling the tent with smoke, via pipes and tubes from a large metal combustion chamber. Other experiments involved making fire water—most of us know how quickly a billy of water is tainted by smoke when hung over a bush camp fire for tea—which is used for watering the seeds. In addition to this, the South Africans have perfected and patented "Dehydrated Smoke Water", which comes in packets and can be re-hydrated and used to water seeds.

My own experiments at first were to put the seed into a small metal kitchen sieve, light a small smokey fire, and gently roll the seed around in the smoke for 30 min. No great heat reaches the seed, as the flames are kept to a bare minimum, and after smoking, the seeds were sown and watered. The results were outstanding and the seedlings, of species I have never been able to germinate before, grew thick and fast.

The type of material used for burning, I believe, must have a fairly wide range of chemical make up and I use a combination of *Eucalyptus, Leptospermum, Erica, Restio*, and Proteaceae. These all emit a good smell when burning, giving one a smoked fish aroma, and hereby hangs a tail! We have now started using a large fish smoker which can take four full size seed trays—this is an excellent method of quick smoking any amount of seed. The herbage is loaded into the bottom of the smoker and a fire set outside on the ground, this can be ordinary firewood or a gas flame. This vapourises the material, giving a good strong smoke without much heat. The trays get a 30-min treatment which seems adequate for all species.

Record Keeping, An Aid To Quality

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INTRODUCTION

What is the meaning of **Quality**? the *Collins Dictionary* defines it as—"the basic character or nature of something" and the *Oxford Dictionary* defines it as—"A degree or level of excellence".

Why do we strive for quality?: "job satisfaction" (pride in our work) and "to succeed in business" (quality is producing what the customers want and when they want it) are two reasons.

Whatever the reason, keeping track of quality control is important, and records are necessary.

We at Omahanui Native Plants have devised a system which I wish to share with you, and which may help in your recording system.

All seeds and plant material brought into the nursery are entered in a register by using the last two digits of the year collected, followed by a numeral, e.g., 94103. This registration number follows the plant throughout its cycle in the nursery on the back of each label. Our registration book has headings for "species", "date collected", and "where collected and by whom". This could be used for plants for regional genetic purity or a particularly nice form which we have chosen to bulk up.

Seed and cutting information was in the past maintained on cards with all the relevant information available at the "flip of a card". Now with the computer age, we had to devise a simple way to identify different batches of plants.

THE INVENTORY CODING SYSTEM

A maximum of 13 spaces can be used for plant codes. This includes a maximum of six letters:

3 or 4 letters for genus	CORO	*Corokia*
2 or 3 letters for species	COROBU	*Corokia buddleioides*
Or 2 letters for double cultivars	COROFC	*Corokia* 'Frosted Chocolate'