

## “Is Hemp a Viable Alternative for Printing Paper Production”

On 24 May 2016, the Lilydale & Yarra Valley Leader quoted Victorian Greens Party MP Samantha Dunn. She said “When it comes to paper there are a whole lot of ways you can produce paper where you don’t have to cut down native forest.” Then activist Faerie Fox said she believed hemp was the answer to the paper debate, saying it could be grown on farmland throughout the nation and produce paper more efficiently than any other means.

These sorts of statements highlight how little most forest campaigners know about the forest and paper industries. Hemp has been touted as an alternative to the use of trees by forest activists on and off for over 30 years. Many of the papers on the internet touting hemp as a source of fibre for largescale paper manufacture show most of the authors know little about the fibre properties of hemp or the process of making paper from woodchips.

### 1. Quality

Hemp has two distinct fibre qualities. The outside of the hemp plant has relatively long and strong fibres, suited to the manufacture of cloth and paper. The inner part of the hemp stem has shorter, weaker fibres (hemp hurds) and is largely used for animal bedding. This low quality material makes up 60 to 70% of the total fibre yield of a hemp plant.

### 2. **Cost of Hemp Paper vs Wood Based Paper Printing Paper**

In 2000/01, the European union was subsidising hemp growers EUR 646.31 per hectare. Based on the average exchange rate for the year of EUR 0.60 to AUD\$1, this equates to a subsidy of AUD \$1,076 per hectare. During that period, the use of hemp fibre in cigarette papers and “technical applications” accounted for over 70 percent of the market for hemp fibre in Europe.

So how much might an A4 ream of hemp paper cost? Cigarette papers made from hemp, with a weight of 40 grams per square metre, cost AUD \$0.02 each. Each cigarette paper is 7x3.7cm and has an area of 26cm<sup>2</sup>. A sheet of A4 copy paper weighs 80 grams/m<sup>2</sup> and has an area of 630cm<sup>2</sup>. To make 1 sheet of hemp A4 paper at a weight of 80 grams/m<sup>2</sup>, will take 48 cigarette papers, costing AUD\$0.96. A 500 sheet ream of A4 printing paper could cost AUD \$480.

If we assume that industrial scale manufacture of A4 paper will reduce the retail cost by 95%, an A4 ream of hemp paper would cost \$AUD\$24. Currently, Reflex copy paper retails for around \$5 per ream.

### 3. Growing Industrial Hemp

Hemp grows best on fertile soils with a neutral to slightly alkaline pH. Australian soils are more commonly acid than alkaline, so would require heavy applications of lime to create a neutral pH. Commercial growth rates will not be achieved without the addition of fertilizers. Hemp is sensitive to drought, so would likely need to be irrigated during summer months and is frost sensitive.



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The growing of industrial hemp will compete with food and fibre crops for space in higher rainfall areas or on irrigated land and add to the annual tillage burden placed on agricultural lands. Optimum growth will require 80 kilograms of nitrogen, or more (160kg+ of urea) to be applied to each hectare under cultivation, in addition to other nutrients.



#### 4. Harvest, Transport and Storage

Unlike trees, which can be harvested at any time of the year and stored outdoors, undercover storage of up to 11 months hemp supply would have to be built. The potential harvesting season would contract from 12 months of the year for trees to about one month for hemp and would clash with other agricultural crops like wheat for harvest, transport and storage space.

#### 5. Activist Acceptance

One of the few advantages of growing hemp is, the greens would probably not campaign against harvesting of the crop. The greens support for a transition from native forests to plantations, as Australia's sole supply source or timber produce, has not stopped activists from campaigning against the harvesting of eucalypt plantations established in the Strzelecki Ranges and on the NSW north coast.



#### 6. Biodiversity

As much as the greens might like hemp, this crop will never have the same level of biodiversity as eucalypt plantations and harvested native forests.

