The IAC-Sprout/Seed-potato Technology – sustainable production of virus-free seed-potatoes by planting sprouts

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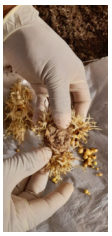
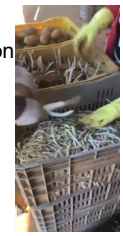
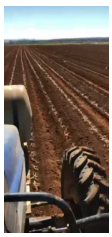
IAC-S/SP technology saves sprouted seed potato tubers!

Seed potato - sprout seperation







Direct field use of sprouts

Greenhouse seed potato Production from sprouts

In Brazil, high-sanitary grade (nearly virus-free) seed-potato tubers [tuber/seed-potato (t/sp)] lots are annually imported, arriving by January-February. Upon arrival, the imported t/sp lots are cold room stored until May-July, when field planting procedures take place. Usually, t/sp of most cultivars show vigorous sprouting growing at tuber's rose-end (> 4 cm size). Generally, hundreds of thousands of these vigorous sprouts are lost by dropping-off or manually removal in the processing before sowing in the field. With the IAC-Sprout/Seed-potato Technology these tons of sprouts, which are used to be discarded as useless by-product (trash) can be used for direct field potato food production or as new seed-potatoes increasing the t/sp multiplication rate (home-saved to be planted in the next season).

Seed potato production from sprouts increases multiplication rate!

6 SP >4cm, **6** SP 2-4cm, **12** SP <2cm
6 sprouts (in medium)

Of **1** well sprouted tuber / seed potato (SP) **24** new SP

The success depends on the number of vigorous sprouts (> 4 cm length and >0,4 cm diameter) and varies with the tubers post-harvest physiological age (dormancy brake), genotype (cultivars) and size (large t/sp have more sprouts than small ones). Virus incidence in sprouts detached from imported t/sp, detected in germinated plants growing in pots with substrate soil (Carolina Soil F-75®), inside insect-proof screenhouse showed average of 0,2% viruses (mainly *Potato virus Y* – PVY). As virus infected plants were eliminated, the tuber stock produced from those sprouts were tested less 0,2 % or zero of viruses.

Both processes can be easily explored in allotment gardens!

We tested inedible well sprouted tubers from potato storage and from overaged and discarded potatoes using IAC-S/SP technology on seven varieties and obtained propagation rates consistent with Brazilian results.

The IAC-sprout/seed-potato technology has been increasingly applied in Brazil for additional virus-free, true-to-type, low cost, sustainable home-saved (mini)tuber seed-potato production. Worldwide, we consider the technology a sustainable and efficient one for professional and non-professional (urban-gardeners) potato production; fitting toward current agriculture-environment demand for resource-usage, food-security, climate-changes concerns.

Potato propagation from sprouts is sustainable and efficient for professional and non-professional use