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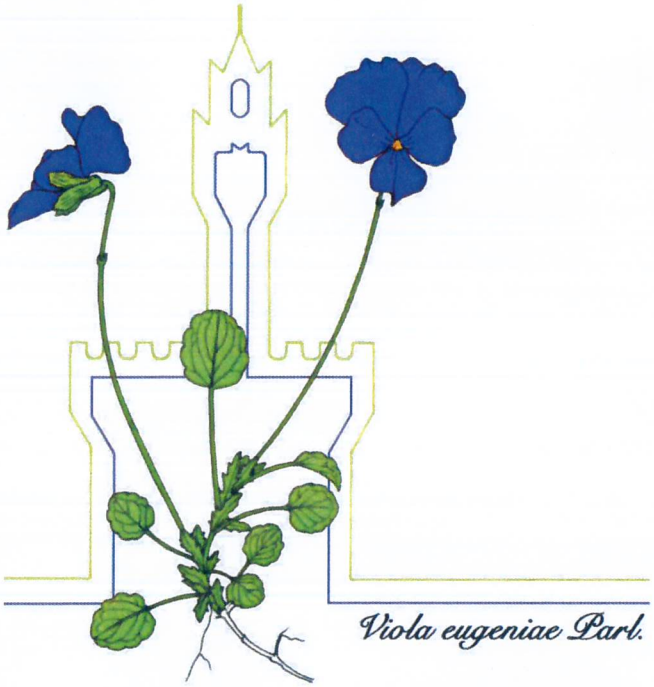

ABSTRACTS

KEYNOTE LECTURES, COMMUNICATIONS, POSTERS

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1.5 = In vitro culture of plants for the new chain of edible flowers

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The crisis that the floriculture sector has had in recent years has led to a re-orientation of many small and medium farms on species suitable for alternative markets while maintaining the same type of production. This process has recently successfully involved aromatic plants and is starting to involve those edible species that are positioned on the food market both in the tradition and in the cuisine of innovation. Edible flowers, in addition to their intrinsic decorative value, have important nutritional characteristics that must be well defined and valued. The Interreg Alcotra ANTEA project was created with the aim of reinforcing the emerging chain of edible flowers through the application of innovation in production and analysis methods and in the assessment of the safety of use, conservation and distribution strategies. The edible flower chain brings with it the added value of being a productive activity that is born linked to organic and sustainable cultivation and is therefore an economic activity that does not affect environmental costs. Furthermore, technological and communication innovations have been applied which guarantee immediacy and visibility between producer and consumer. Dissemination of the results to consumers and restaurateurs are essential for the same purpose too. Indeed, the ensuring food safety will help to expand the range of restaurateurs who will begin to have a constant supply of many flowers with high quality.
Several edible species for food purposes have been propagated *in vivo*; while plants with low multiplication rate (bulbous) or difficult to propagate by seed or cutting were multiplied *in vitro*. Among these last plants two varieties of *Agastache* (*A. aurantiaca* "Sunset Yellow" with lemon/mint taste - Fig. 1 - and *A. mexicana* "Sangria" with anise/mint taste); *Mertensia maritima* renowned because flowers and leaves have an oyster taste (Fig. 2); fifteen different clones of *Polianthes tuberosa* (fourteen from seed and one from bulb) and five types of *Tulbaghia*: *T. cominsii* with garlic butter taste (Fig. 3), *T. simmleri* (two varieties) with garlic asparagus taste, *T. violacea* (two varieties) with garlic taste. Microcuttings (for *Agastache* spp and *M. maritima*) with at least two axillary buds, and seeds (for *P. tuberosa* and *Tulbaghia* varieties) were disinfected with a solution sodium hypochlorite 1.5% or 2%, respectively, a few drops of Tween 20 per 20'and rinsed twice with distilled sterile water per 10'. The seeds were pre-germinated on moist sterile filter paper at 23°C in the dark. Microcuttings and germinated seeds were transferred in flasks containing semi solid medium which was composed of MS (1) salt and vitamins, 3% sucrose and 0.8% agar (MS0). For each variety, different propagation media added with plant hormones were tested.
The best multiplication medium is: a) basal MS added with BA 0.3 for *Agastache* varieties; b) basal MS added with BA 0.2 and active carbon 0.5% for *M. maritima*; c) basal MS added with BA 1.5 and IAA 0.5 for *Polianthes* clones (Fig. 4); d) basal MS added with BA 3 and NAA 0.1 for *Tulbaghia* varieties.

Fig. 1. *A. aurantiaca* "Sunset Yellow" inflorescence

Fig. 2. Detail of *M. maritima* flower

Fig. 3. *T. cominsii* plant cultured in greenhouse

Fig. 4. *In vitro* culture of a *P. tuberosa* clone

1) Murashige, Skoog (1962) Physiologia Plantarum, 15, 473-497