

Variability in space and time: coexistence of contrasting fruit distribution patterns in *Orchis militaris*

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In flowering plants, a decrease of fruit production towards the apex of individual inflorescences is usually observed. Numerous studies have been conducted but variation among populations and years has rarely been investigated. In order to study geographical and temporal variation in fruit distribution pattern, fruit production was described in relation to flower position in *Orchis militaris*. During two years, eight populations were studied and fruit position along the inflorescence was recorded. A generalised linear mixed model analysis was performed to examine the effect of population, year, and relative flower position on fruit production. Four main patterns of fruit production were described: decrease towards the apex, increase towards the apex, higher fruit set in the middle part of the inflorescence associated with acropetal and basipetal decline, and uniform distribution pattern. Within a given population, patterns were either consistent or variable among years and the relationship between fruit production and flower position was not necessarily linear. Our study demonstrates the intraspecific diversity of fruit distribution patterns in *O. militaris*, and the necessity to include geographical and temporal variation in the sampling design. The behaviour of foraging pollinators and/or the temporal matching between floral phenology and pollinator's activity period may be responsible for several patterns.