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INTERNATIONAL UNION FOR THE PROTECTION OF NEW VARIETIES OF PLANTS

GENEVA

**TECHNICAL WORKING PARTY
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UNIFORMITY REQUIREMENTS FOR VARIEGATED VARIETIES

*Document prepared by the experts of the
Community Plant Variety Office, Angers, France*

1. Over the years applications for varieties of variegated ornamental plants have been filed in an more or less constant flow, distributed over a wider range of species.
2. These variegated plants originate in general from mutations (natural or induced) of the shoot's apical meristem normally leading to periclinal chimeras. These chimeras -parts of the plant show a mutation in the ability to produce chlorophyll, resulting in white patterns or stains on the green organs, such as leaves. Other types of chimeras could be formed, but it is less likely that they would be stable in propagation and are, therefore, very rare. The periclinal chimeras are usually mutations which are present in only one cell layer (usually the L2) of the plant. The other layers (L1 and L3) are usually not mutated.
3. Uniformity of such variegated varieties is usually a difficult point. New shoots, developing from the shoot apical meristem, could relatively easily mutate back to become completely green or could mutate to become completely white (off type A).
4. Another phenomenon which could occur is the formation of green shoots from other organs of the plant. Green shoots have been observed coming from the roots of a variegated perennial plant (off type B).

5. Off-Type A is regarded to be a form of non uniformity. In multi-annual plants, it sometimes occurs only after several years of growing and in a relatively high percentage of plants. Therefore, in practice, these varieties need intensive selection during propagation of the plants in the nursery.

6. Off-type B should not be regarded as a form of non uniformity since the formation of green shoots originates from another cell layer (L1 or L3), which does not have this chimera structure. The proof of this is that shoots, coming from roots, are always completely green.

7. There are different approaches by different examination offices on how to treat these observations. Some offices write a negative report as soon as the formation of an off-type shoot is seen (type A), whereas others prefer to wait for a second year of testing in order to study the phenomenon further.

8. Given that variegated varieties tend to be less uniform and stable than other types of varieties, with regard to the formation of Off-type A plants, and in order to come to a practical solution, a proposal to use the following standard in relation to Off-type A has been developed: (taken from document TC/34/5 Rev. "Testing of Uniformity of Self-fertilized and Vegetatively Propagated Species Using Off-Types").

- Increase of the population standard (proposal = 5%)
- increase of the number of plants in the sample (proposal = 15)
- limit examination to one cycle*

Document TC/34/5 Rev. shows that with an acceptance probability of superior or equal to 90%, for a sample size between 11 and 22 plants, the number of acceptable off-types would be 2.

* In the case of shrubs or plants that need an older plant to be described, it might be better to request a combined sample of young plants of commercial standard + plants of (almost) commercial size to make the description (for example 12+3 plants).

9. *Experts are invited for comments on this proposal.*

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