



The International Union for the Protection  
of New Varieties of Plants (UPOV)  
Seminar on the impact of policy on  
essentially derived varieties (EDVs)  
on breeding strategy



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Mr. Micha Danziger



Imagine more




# Micha Danziger




3 generations of Danziger - A Family Business



*"The farmer has to be an optimist or he wouldn't still be a farmer."* (Will Rogers)






**SINCE 1953**

**3 Product Lines:**  
Cut Flowers, Annuals and Perennials

Production facilities spread over  
**3 continents:**  
Asia, Africa, America

One of the biggest R&D departments  
with more than  
**100 professionals**

More than  
**600 varieties**  
under breeders rights

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**Danziger Dan Flower Farm - Since 1953**


OVER **500 MILLION**  
CUTTINGS OF DANZIGER'S VARIETIES

MORE THAN **600 VARIETIES**  
UNDER BREEDERS RIGHTS

**100 PROFESSIONALS**

ABOUT **1000 CUSTOMERS**  
IN MORE THAN **60 COUNTRIES**

R&D Center  
Production Site

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## Intellectual Property Protection

- Promote protection of IP rights and adoption of the UPOV conventions all around the globe.
- This is in the best interest of ALL breeders
- International exporters require IP protection
- Royalty payment is being implemented by more and more growers around the world as the benefits are clear
- All our partners pay Royalties!

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## The essence of the EDV concept

- It takes **many years and enormous funds** to breed and introduce a successful variety
- Inducing mutation using "classical" mutation methods is **relatively simple**
- In order to maintain the essence of innovation we must have a sufficient **return on investment through a worthy IP protection**
- **Many new ornamental varieties are the basis for the development of mutants** (natural, induced or otherwise developed by new breeding techniques (NBT)).

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## Market Estimate: % of Color Mutants by Crop

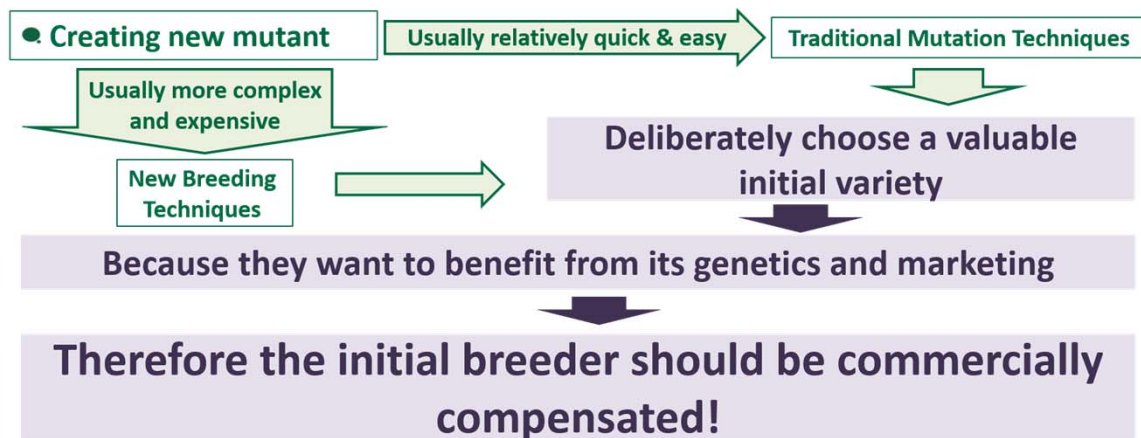
- Pot Plants (general) 25 %
- Carnation Cut 5 -10 % Pot > 30%
- Chrysanthemum 50%
- Begonia 25%
- Roses 10%
- Gerbera 5%
- Hydrangea 25%
- Foliage plants 80%
- Agapanthus (Nile Lilly ) 10%

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## The essence of the EDV concept

In vegetatively reproduced ornamental crops the EDV concept is all about mutants (and a bit GMO).



## A clear EDV definition is required

- To avoid lack of stability in the IP regime
- To avoid 2 opposite court rulings in the exact same variety (Million Stars® – Blancanieves cases)
- Creating Balance - Taking into consideration both the **interests of traditional ornamental breeders and innovative EDV developers** striving for fair **balance**



## Million Stars® Vs. Blancanieves

- Blancanieves had 17 morphological differences compared to Million Stars®
- All differences were proven to be a **result of ONE act of derivation** (chromosome doubling) – the breeder admitted to this fact!



Blancanieves

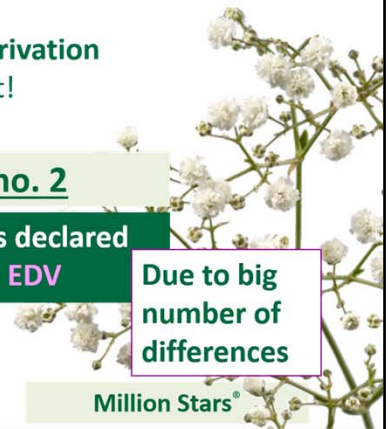
### Court no. 1

Blancanieves declared to be an **EDV**

### Court no. 2

Blancanieves declared **NOT an EDV**

Due to big number of differences



Million Stars®



## Court cases and EDVs

- Conducting IP court cases is **time consuming and very expensive** (legal fees, genetic analyses, expert opinions)
- We (breeders) prefer to work in the field and breed
- The court pathway is taken only in extraordinary cases, **protecting very unique and successful varieties**
- This was the case with **Danziger's Million Stars® *Gypsophila* variety**



Million Stars®



## A Broader Scope of EDV Concept should be adopted

### According to UPOV explanatory notes today

- The differences between the EDV and the Initial Variety should be **“one or very few”**
- if a variety does not retain **the (=all) “essential” characteristics** of the initial variety, it will not be an EDV.

Varieties derived from an initial variety, but not retaining all the essential characteristics of the initial variety – **may not be considered EDV.**

**Even if all morphological differences result from the act of derivation!**



## A Broader Scope of EDV Concept is Required

In Our point of view as breeders of vegetatively reproduced varieties

### The number of differences or their nature does not matter

- Creating mutants (or GMOs) out of a single parent initial protected variety – it IS an EDV
- The differences are a result of the act of derivation – it IS an EDV

A very narrow definition of EDV

Excluding most mutants and GMOs from the EDV concept

Harmful to initial breeders



## A Broader Scope of EDV Concept should be adopted

### Examples which we find awkward that would NOT be EDVs

- Color mutants
- Longer shelf life
- Different growth habit
- Disease resistance/tolerance

Examples typical in ornamentals

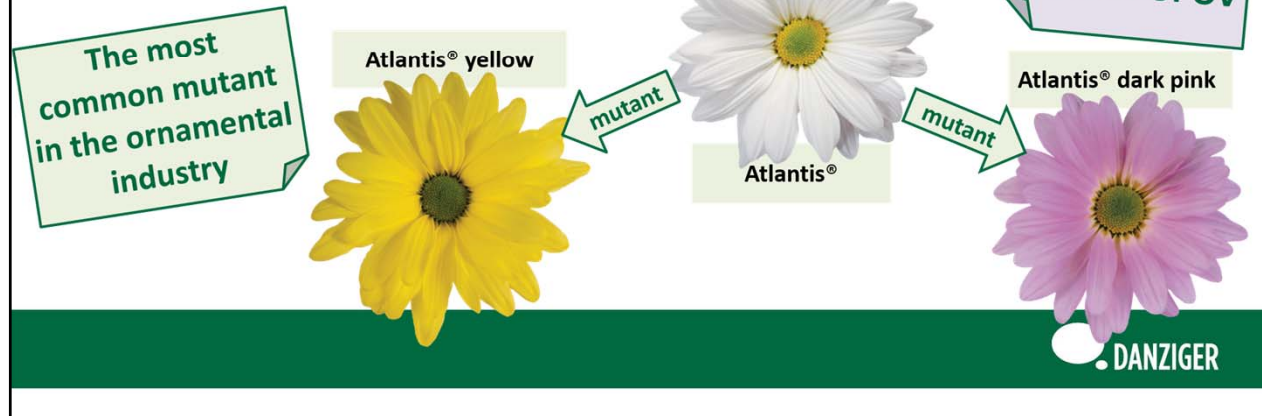
Under the current Explanatory Notes of UPOV



## A Broader Scope of EDV Concept should be adopted

Examples which we find awkward that would NOT be EDVs

- Color mutants



## New Breeding Techniques and EDV

### In Our point of view

- Varieties resulting from NBT that **retain almost the whole genome of the initial variety** - Are mutations hence EDVs
- The reason to choose a specific initial variety and use NBT to modify it is **the advantages and a favorable characteristics of the initial variety**

Danziger Innovations has patented NBT called "MemoGene<sup>®</sup>", a genome editing technology that creates site specific mutation

And yet we maintain: **The type of technology creating a mutant doesn't matter**

Whether "old fashion" mutation breeding or NBT- **it is still a mutant** and the developer should **commercially compensate the initial breeder**.



## Breeding Aspects and Implications

- Danziger group respects the IP of others as we expect others to respect our IP
- **The protection grants return of investment** to the breeder for many years of investment of time, funds, manpower in the breeding, sales, marketing and commercialization of a new variety.

And because we understand the importance of the protection, **Danziger has been requesting appropriate license agreements** from other breeders to use their patents in many relevant cases.



## Breeding Aspects and Implications

Keeping a narrow interpretation of UPOV for the EDV concept

Creates a "legal loophole"

This situation will encourage some breeders to create mutants and EDVs (using classical breeding and NBT) **without the permission of the initial breeder**

It will become common practice amongst mutant breeders to take advantage and exploit mutants **WITHOUT** the initial breeder's authorization

**Danziger is totally against that!**



## Commercial Aspects and Implications

Breeding a new variety may take many years of enormous investments

- most ornamental varieties lifespan is between 3-5 years
- most ornamental breeding programs take many years to reach a commercial product
- Mutants can easily harm the success of the very unique varieties having **The WOW Effect** (the thing that may allow it to survive and be a leading variety for many years)



## Commercial Aspects and Implications

### Imbalance of market forces

- Grants an unfair advantage to the EDV breeder gaining prominent market position
- Initial breeder invested heavily all along the value chain, exerting extensive efforts and capital on receiving marketing recognition.
- Business strategy and models are based on predications of performance of their unique varieties –

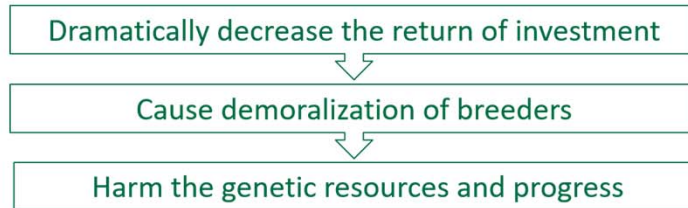
- |   |  |
|---|--|
| I. Impacts the <b>market price</b> of the initial variety | III. <b>Strategic collaborations</b> compromised |
| II. Effects <b>customers profitability</b>                | IV. <b>Royalty payments</b> at risk              |



## Commercial Aspects and Implications

Breeding a new variety may take many years of enormous investments

- Small and medium breeders will not have the resources to compete with the big companies and they will face great difficulty protecting their varieties
- Granting the right for a mutant to be commercialized without compensating the breeder of the initial variety will:



## Commercial Aspects and Implications

EDV shall ensure a fair return on investment to the breeder of the Initial Variety

EDV developer and the initial breeder should negotiate the terms of commercialization of EDVs

Negotiation on a case by case mechanism will be determined between the parties and will be based on commercial value and **The WOW Effect**

A fair and balanced solution is needed since EDV concept has huge commercial impact on the industry



## Should those be considered a new products?

Initial product + New feature → New products?

New Color → New products?

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## ONE Parent Variety = EDV

In vegetative reproduction every **new variety produced with only ONE parent** (and NOT produced via sexual reproduction) - IS AN EDV

Blancanieves

Atlantis Mutants

EDV!

DANZIGER

## Summary

- EDV concept In vegetative - only **ONE** parent
- Any and **ALL mutants** are EDV's
- ALL mutants related to the **act of derivation** - IS AN EDV
- The breeding technique used should not make a difference
- Negotiate proportion of each breeders contribution
- UPOV EXN must reflect progress and innovation

● **We request the revision of the EXN**

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Thank you  
for  
your attention