

Technical Working Party on Automation and Computer Programs TWC/36/5**Thirty-Sixth Session
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EXPERIENCE WITH TWO TRIALS/LOCATIONS IN ONE YEAR FOR DUS DECISIONS*Document prepared by an expert from the Netherlands**Disclaimer: this document does not represent UPOV policies or guidance*

The Annex to this document contains a copy of a presentation on “Experience with two trials/locations in one year for DUS decisions”, prepared by an expert from the Netherlands, to be made at the thirty-sixth session of the Technical Working Party on Automation and Computer Programs (TWC).

[Annex follows]

EXPERIENCE WITH TWO TRIALS/LOCATIONS IN ONE YEAR FOR DUS DECISIONS

Presentation prepared by an expert from the Netherlands






Two DUS trials in one season

- At Naktuinbouw only for vegetable species, and only on special request (via application form)
- Two possibilities:
 - Two trials at Naktuinbouw, separated in time
 - or**
 - One trial at Naktuinbouw, another trial at an other EO
 - => EO must be CPVO entrusted for that species
 - => Earliest application/seed submission date used!

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Crops

Crop	1st location	2nd location
Greenhouse crops* (i.e. pepper, tomato, watermelon, melon etc.)	Naktuinbouw	Naktuinbouw
Outdoor radish, outdoor lettuce	Naktuinbouw	Naktuinbouw
Onion (spring-, winter-), Welsh onion, Japanese bunching onion, white/red/savoy cabbage, bean, pea, kohlrabi	Naktuinbouw	CZ
Sweet corn/popcorn	Naktuinbouw	SK

*For greenhouse crops: 2nd trial in same season only possible if planning/space allows

Official bilateral agreement between Naktuinbouw and CZ/SK for these tests

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Both trials at Naktuinbouw

Trials are separated in time. Two systems, depending on crop:

- **A:** 2nd trial starts after 1st trial has ended (examples: radish, spinach, vegetable marrow/squash, lettuce, some types of tomato)
or
- **B:** 1st and 2nd trial overlap to some degree (examples: pepper, melon, watermelon, some types of tomato)

System A is preferred, but not always possible (long growing period of crop/short window for cultivation).

In general: first trial has most optimal conditions for crop

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Both trials at Naktuinbouw

Tomatoes: many different types, which are grouped in separate trials



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Both trials at Naktuinbouw

Examples for some different types of tomato:


- Cherry/cocktail tomatoes; **system A**
1st trial: start June, results October; 2nd trial: start January
(enough time in between to adjust 2nd trial)
- Tomatoes with growth type: determinate; **system B (overlap)**
1st trial: start March, results August; 2nd trial: start June
(overlap, but sometimes early results can already lead to exclusion of similar varieties in 2nd trial)
- Other tomatoes; fruit: green shoulder: absent; **system A**
1st trial: start January, results May/June; 2nd trial: start middle of June
(results available just in time for 2nd trial)


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Both trials at Naktuinbouw




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	<h2 style="text-align: center;">Both trials at Naktuinbouw</h2>
	<p>Trial layout:</p> <ul style="list-style-type: none">- A: 2nd trial starts after 1st trial has ended: Both trials may have different layout: results of 1st trial are used for 2nd trial (e.g. different varieties for comparison). This is similar to situation for trials in two consecutive growing seasons.- B: 1st and 2nd trial overlap to some degree: Both trials identical. No adjustments possible (as there are no results for 1st trial available yet)
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	<h2 style="text-align: center;">Both trials at Naktuinbouw</h2>
	<p>Trial layout:</p> <ul style="list-style-type: none">- A: 2nd trial starts after 1st trial has ended: and- B: 1st and 2nd trial overlap to some degree: <p>Some characteristics require a separate test e.g. bolting characteristics, disease resistance tests. For both system A and B these are generally conducted <u>only once</u> per variety.</p>
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	<h2 style="text-align: center;">Both trials at Naktuinbouw</h2>
11	<p>Data analyses:</p> <ul style="list-style-type: none">- A: 2nd trial starts after 1st trial has ended: and- B: 1st and 2nd trial overlap to some degree: <ul style="list-style-type: none">• Both trials are analyzed separately• In case of inconsistent results: 3rd trial. For system A less often, as second trial can be adjusted (i.e. include other similar varieties).• For system B more often 3rd trial required. E.g. resistances in TQ can be different from test at Naktuinbouw, but no adjustments (different similar varieties) possible in 2nd trial.

	<h2 style="text-align: center;">Both trials at Naktuinbouw</h2>
12	<p>Variety descriptions:</p> <ul style="list-style-type: none">- A: 2nd trial starts after 1st trial has ended: and- B: 1st and 2nd trial overlap to some degree: <ul style="list-style-type: none">• Variety descriptions are based on both trials.• In case of system A, first trial is often 'leading', 2nd trial is used for fine tuning of scores

Both trials at Naktuinbouw

Example outdoor lettuce: (system A)



Spring trial at
Naktuinbouw, variety 'X'





Autumn trial at
Naktuinbouw, variety 'X'


Both trials at Naktuinbouw


Example melon: (system B)



	<h2 style="text-align: center;">Trials at 2 locations</h2>
	<p>Trial layout:</p> <ul style="list-style-type: none">• Layout similar at both locations. Information on layout and similar varieties for both locations provided by Naktuinbouw.• Layout may differ slightly because of local circumstances (i.e. size of plots)• Start of tests at both locations at (almost) same time: as parallel as possible
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	<h2 style="text-align: center;">Trials at 2 locations</h2>
	<p>Data analyses:</p> <ul style="list-style-type: none">• Both trials are analyzed separately• Third trial in case of inconsistent results• In this system larger effect of genotype x environment interaction. As differences between varieties in these outdoor crops are usually bigger this generally does not lead to significantly more 3rd trials.
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	<h2>Trials at 2 locations</h2>
	<p>Variety descriptions:</p> <ul style="list-style-type: none"><li>• Trial at Naktuinbouw is leading for variety description; other location used as supporting data
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	<h2>Trials at 2 locations</h2>
	<p>Calibration of scoring:</p> <ul style="list-style-type: none"><li>• Good communication between EO's is essential<li>• Every other year Naktuinbouw visits CZ or SK, and vice versa in alternating year. ('Ring tests') Over years this has clearly reduced variation due to observer effects, but cannot eliminate genotype x location effects.
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Trials at 2 locations



White cabbage trial
at Naktuinbouw, NL



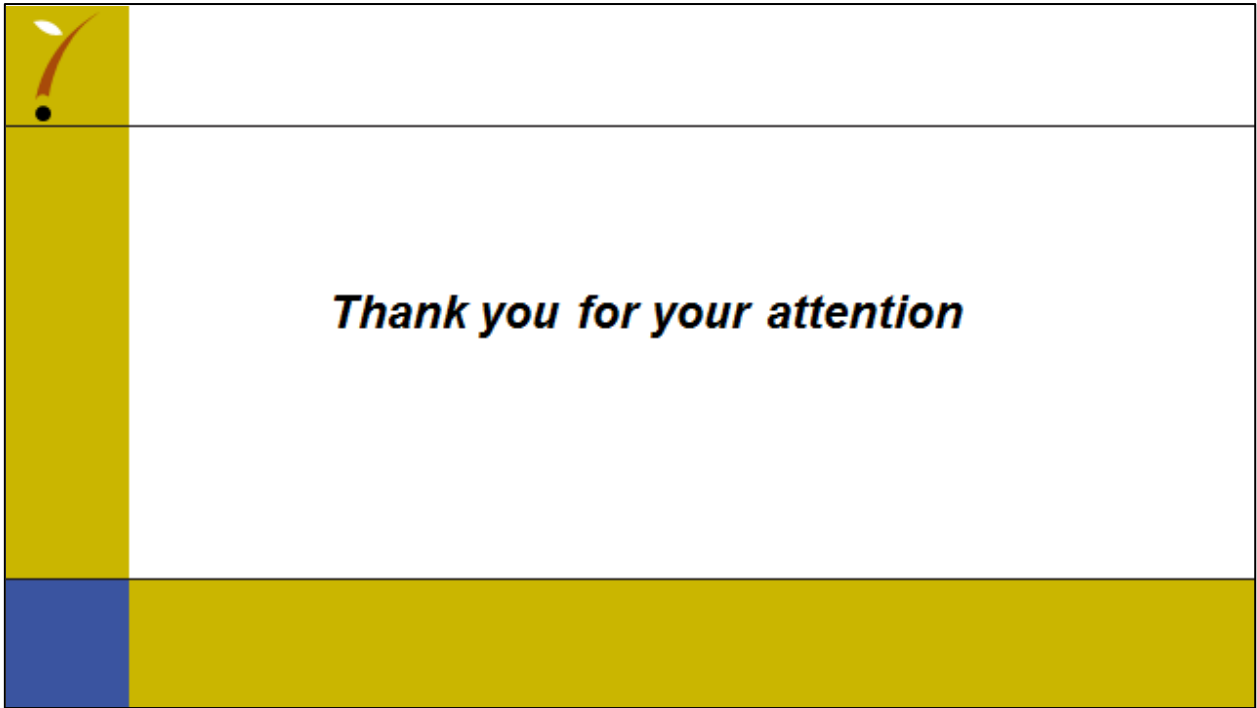
White cabbage trial
at Úkzúz, CZ

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Summary

- Several types of two trials in one season:
 - A. same location: two consecutive trials
 - B. same location: two trials partly overlapping
 - C. two locations, parallel trials
- Advantage system A: 2nd trial can be adjusted (e.g. optimized for similar varieties)
- Choice of system (partly) depends on duration of cultivation of crop, time frame for cultivation, availability of trial locations etc.
- System B leads more often to 3rd trial than two successive growing seasons
- At Naktuinbouw 2 trials in 1 year is an option, not obligatory.
- Variety descriptions from system C are based on one location, with data 2nd location used as supporting data (finetuning)
- For system C good communication between locations is essential

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