



AgriSun Solutions pty ltd

HOW TO RUN AN AGRISUN ORCHARD TRIAL

Practical Field Protocol

A short, repeatable method
for testing reflective orchard
ground film under
commercial conditions

PAGE 1 — START WITH ONE CLEAR QUESTION

A useful orchard trial begins with a question that can actually be measured.

Avoid vague questions such as:

“Does the film work?”

Instead ask something specific.

Examples:

Does AgriSun Reflective Orchard Film improve red colour in lower-canopy Gala fruit?

Does reflective ground film change fruit-surface temperature in Golden Delicious?

Does reflective film improve rind colour in shaded Nadorcott fruit?

Does reflective ground film change fruit size or colour in Regina cherries under cover?

The clearer the question, the easier the trial is to evaluate.

DEFINE THE PRIMARY OUTCOME

Choose one main thing you want to measure.

For example:

- ☐ Fruit colour
- ☐ Fruit-surface temperature
- ☐ Sunburn
- ☐ Fruit size
- ☐ Soluble solids / °Brix
- ☐ Firmness
- ☐ Maturity
- ☐ Pack-out
- ☐ Canopy light / PAR
- ☐ Another defined outcome

You can record other variables as well, but the trial should have one primary objective.

PAGE 2 — SELECT TREATED & CONTROL AREAS

A meaningful field trial needs a comparison.

TREATED AREA

Trees or rows where AgriSun Reflective Orchard Film is installed.

CONTROL AREA

Comparable trees or rows managed normally without reflective ground film.

The treated and control areas should be as similar as reasonably practical.

Try to match:

- ☐ Cultivar
- ☐ Rootstock
- ☐ Tree age
- ☐ Training system
- ☐ Crop load
- ☐ Irrigation
- ☐ Netting
- ☐ Row orientation
- ☐ Canopy density
- ☐ Orchard management

Avoid comparing two very different parts of the orchard and assuming every difference is caused by the film.

WHERE POSSIBLE

Use more than one tree or row in each treatment.

A larger, more representative comparison is generally more useful than comparing one individual tree with one other tree.

For commercial AgriSun trials, results should be described as **field observations** unless the trial has been designed and analysed as a formal scientific experiment.

PAGE 3 — RECORD THE STARTING CONDITIONS

Before installing the film, record the orchard as it is.

ORCHARD DETAILS

- ☐ Farm
- ☐ Block
- ☐ Crop
- ☐ Cultivar / strain
- ☐ Rootstock
- ☐ Tree age
- ☐ Training system
- ☐ Row orientation
- ☐ Row spacing
- ☐ Tree spacing

PRODUCTION DETAILS

- ☐ Expected first harvest date
- ☐ Current fruit-development stage
- ☐ Current maturity
- ☐ Current fruit colour
- ☐ Crop load, where relevant
- ☐ Irrigation system

PROTECTIVE NETTING

If present:

- ☐ Net type
- ☐ Net colour
- ☐ Shading specification, if known
- ☐ Net height
- ☐ Net condition

EXISTING PROBLEMS

Record before treatment:

- ☐ Sunburn
- ☐ Poor colour
- ☐ Uneven colour
- ☐ External defects
- ☐ Heat damage
- ☐ Fruit-size variation
- ☐ Other relevant issue

This starting record is important because it prevents a problem that already existed before installation from later being attributed to the film.

PAGE 4 — INSTALL & DOCUMENT IT

Install AgriSun according to the **AgriSun Installation & Application Guide**.

Record:

- ☐ Installation date
- ☐ Treatment area
- ☐ Film position
- ☐ Film width
- ☐ Approximate ground coverage
- ☐ Reflective side facing upward
- ☐ Anchoring method
- ☐ Irrigation position
- ☐ Netting, if present
- ☐ Weather conditions at installation

TAKE PHOTOGRAPHS

Photograph:

BEFORE INSTALLATION

Treated and control areas.

IMMEDIATELY AFTER INSTALLATION

Show the film position and orchard layout.

DURING THE TRIAL

Use the same viewpoints wherever possible.

AT HARVEST

Photograph comparable fruit from treated and control areas.

IMPORTANT

Use consistent photographs.

Try to keep:

- camera position,
- direction,
- distance,
- lighting conditions,
- and fruit/canopy position

as similar as practical.

That makes visual comparisons far more useful.

PAGE 5 — MONITOR THE TRIAL

Do not install the film and wait until harvest.

Observe both the treated and control areas during the application period.

CORE FIELD OBSERVATIONS

Record:

- ☐ Date
- ☐ Weather conditions
- ☐ Film condition

- ☐ Wind movement
- ☐ Surface cleanliness
- ☐ Irrigation operation
- ☐ Canopy condition
- ☐ Fruit condition

MEASURE THE VARIABLES RELEVANT TO YOUR QUESTION

IF TESTING COLOUR

Record:

- colour development,
- percentage coloured surface where relevant,
- inner vs outer canopy,
- upper vs lower canopy.

IF TESTING HEAT / SUNBURN

Record:

- fruit-surface temperature where possible,
- ambient temperature,
- fruit exposure,
- new sunburn,
- sunburn severity.

IF TESTING MATURITY / QUALITY

Record:

- °Brix,
- firmness,
- starch index where relevant,
- acidity,
- maturity stage.

IF TESTING LIGHT

Where suitable equipment is available:

- reflected PAR,
- canopy PAR,
- measurement position,
- time of day.

Use the same method in treated and control areas wherever practical. Your existing protocol already stresses consistent treatment/control measurement and recording of weather, colour, fruit-surface temperature, sunburn, canopy condition and PAR where equipment is available.

PAGE 6 — HARVEST & COMPARE

At harvest, evaluate treated and control fruit using the **same method**.

Do not grade treated fruit differently because you expect a result.

POSSIBLE HARVEST MEASUREMENTS

- ☐ Fruit colour
- ☐ Fruit weight
- ☐ Fruit diameter
- ☐ Soluble solids / °Brix
- ☐ Firmness
- ☐ Starch index
- ☐ Titratable acidity
- ☐ Maturity
- ☐ Sunburn incidence
- ☐ Sunburn severity
- ☐ External defects
- ☐ Commercial grade
- ☐ Pack-out category

For cherries also consider:

- ☐ Cracking
- ☐ Pedicel / stem condition
- ☐ Post-harvest defects

For citrus also consider:

- ☐ Rind colour
- ☐ Acidity
- ☐ Maturity ratio

COMPARE LIKE WITH LIKE

Where canopy position matters, compare:

LOWER TREATED FRUIT

with

LOWER CONTROL FRUIT

rather than comparing lower treated fruit with highly exposed control fruit.

Your existing guide already recommends comparing colour, fruit weight, Brix, firmness, starch, acidity, maturity, sunburn and pack-out using comparable methods.

PAGE 7 — RECORD THE RESULT HONESTLY

A successful trial is not necessarily one where AgriSun produced an improvement.

A successful trial is one that answers the question.

Possible results include:

POSITIVE RESPONSE

A measurable commercially useful difference was observed.

NO MEASURABLE DIFFERENCE

The treated and control areas performed similarly.

MIXED RESPONSE

One characteristic changed while another did not.

Example:

Colour improved, but °Brix did not change.

NEGATIVE RESPONSE

An undesirable effect occurred.

Example:

Colour improved, but cracking increased.

All four outcomes are useful.

RECORD NULL RESULTS

Do not discard a result because nothing changed.

“No measurable difference” helps determine where the product may or may not provide commercial value.

This principle is already explicit in your existing material: both positive and negative findings should be recorded, and a result showing no measurable difference remains useful.

PAGE 8 — REPEAT BEFORE GENERALISING

One orchard in one season does not establish a universal recommendation.

Results can vary because of:

- climate,
- cultivar,
- crop load,
- tree age,
- canopy architecture,
- netting,
- irrigation,
- harvest maturity,
- film placement,
- seasonal temperature,
- and solar conditions.

Where a promising commercial response is observed:

1. Record it.
2. Repeat the treatment in another comparable area or season.
3. Refine timing and placement.
4. Continue using untreated controls where practical.
5. Only then begin developing a stronger local recommendation.

IMPORTANT

Commercial AgriSun trials should be described as:

COMMERCIAL FIELD OBSERVATIONS

unless they have been conducted according to an appropriate formal scientific experimental design.

PRINTABLE AGRISUN ORCHARD TRIAL RECORD

TRIAL IDENTIFICATION

Farm: _____

Grower: _____

Block: _____

Crop: _____

Cultivar / strain: _____

Rootstock: _____

Tree age: _____

Trial start date: _____

Expected harvest date: _____

Primary trial question:

Primary outcome being measured:

ORCHARD CONDITIONS

Training system: _____

Row orientation: _____

Row spacing: _____

Tree spacing: _____

Canopy density:

- ☐ Open
- ☐ Moderate
- ☐ Dense

Irrigation: _____

Protective netting:

- ☐ No
- ☐ Yes

If yes:

Net type: _____

Net colour: _____

Shading specification: _____

TREATMENT DETAILS

AGRISUN TREATED AREA

Rows / trees: _____

Installation date: _____

Film position: _____

Film width: _____

Approx. coverage: _____

Anchoring method: _____

CONTROL AREA

Rows / trees: _____

Normal orchard management:

STARTING CONDITION

FRUIT COLOUR

MATURITY

°BRIX, IF MEASURED

SUNBURN / EXTERNAL DEFECTS

OTHER OBSERVATIONS

PHOTO RECORD

- ☐ Treated area before installation
- ☐ Control area before installation
- ☐ Installation completed
- ☐ Mid-trial photographs
- ☐ Pre-harvest photographs
- ☐ Harvest photographs

Photo location / reference:

MONITORING RECORD

Date	Weather	Colour / Fruit Condition	°Brix	Fruit Temp.	Sunburn	Film Condition	Notes
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HARVEST RESULTS — TREATED AREA

Harvest date: _____

Sample size: _____

Colour: _____

Average fruit weight: _____

Average fruit size: _____

°Brix / TSS: _____

Firmness: _____

Maturity: _____

Sunburn incidence: _____

External defects: _____

Pack-out / grade: _____

Other observations:

HARVEST RESULTS — CONTROL AREA

Harvest date: _____

Sample size: _____

Colour: _____

Average fruit weight: _____

Average fruit size: _____

°Brix / TSS: _____

Firmness: _____

Maturity: _____

Sunburn incidence: _____

External defects: _____

Pack-out / grade: _____

Other observations:

FINAL COMPARISON

DID THE PRIMARY OUTCOME CHANGE?

☐ Yes — favourable difference

☐ No measurable difference

☐ Mixed result

☐ Unfavourable difference

WHAT CHANGED?

WHAT DID NOT CHANGE?

WERE ANY NEGATIVE EFFECTS OBSERVED?

COMMERCIAL IMPACT

Did the treatment appear to change commercial grading or pack-out?

☐ Yes

☐ No

☐ Unclear

Explain:

NEXT-SEASON DECISION

☐ Repeat exactly

☐ Repeat with different timing

☐ Repeat with different film position

☐ Expand trial area

☐ Reduce trial area

☐ Do not repeat

☐ Further horticultural assessment required

Reason:

AGRISUN TRIAL PRINCIPLE

DON'T LOOK FOR A SUCCESS STORY.

LOOK FOR THE RESULT.

A field trial should tell the grower whether changing the orchard light environment produced a measurable effect under **that cultivar, that block, that season and that application.**

Only repeated evidence should become a broader recommendation.

IMPORTANT USE NOTICE

The AgriSun Orchard Trial Protocol is designed as a practical commercial field-evaluation framework.

It is **not** a substitute for a formal replicated scientific trial where research-grade conclusions are required.

Commercial field observations can help growers and AgriSun identify promising applications, refine timing and placement, and determine where further research is justified.

Results from one block or one season should not automatically be generalised to other cultivars, orchards or production regions.

AGRISUN REFLECTIVE SOLUTIONS

Better Light. Applied With Evidence.

Ask the question.

Create the control.

Measure the result.

Record what changed — and what didn't.

Repeat before recommending.