TECHNICAL NOTES FOR AQ 10®

SUMMARY

- A registered biofungicide for control of powdery mildew diseases.
- Contains a naturally occurring fungus which parasitises a wide range of the fungi that cause powdery mildew, including their overwintering stage.
- Approved for use on protected crops of: cucumber, tomato, pepper and chilli, aubergine, strawberry, courgette and summer squash, winter squash, pumpkin, and melon. In addition EAMU*s allow use on a range of other protected crops including ornamental plant production, named herbs and named fruit crops, see table 2, page 7 for more detail.
- Usable in organic production.
- Leaves no chemical residue, has a short harvest interval and no phytotoxicity has been observed.

Should be applied when conditions are conducive to powdery mildew infections but preventatively or at low infection levels, less than 3% infected leaf area, before mycelium is established in the crop.

Application should be at 7 to 10 day intervals. At least two applications are recommended; a maximum of 12 may be applied.

The rate of use varies from 35 to 70 g/ha, see table 3 on page 10.

Apply with sufficient water to ensure uniform coverage of the crop without causing run-off. ULV equipment has been used successfully.

Apply when the humidity is increasing and not in direct sunlight. Apply at between 12°C and 30°C, typically early morning or late evening.

Pre-soaking AQ 10 in water for 30 to 60 minutes prior to application is recommended.

Details of tank mix and compatibility with other crop management agents is summarised in table 4 on pages 13 and 14.

Use plant protection products safely. Always read the label and product information before use. Further product information, including warning phrases and symbols, is included in the main product manual or see the product label.

VERSION CONTROL

Version	Publication Date	Change from previous version
12/18	December 2018	Additional Extension of Authorisation. Revised tank mix.
12/22	December 2022	Revised tank mix. Minor changes for new UK approval/label.

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

TABLE OF CONTENTS

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

These notes are designed to support the main product manual insert or label information on AQ 10 and advise on how to obtain the best possible disease control from the product.

INTRODUCTION

WHAT IS AQ 10?

AQ 10 is a registered biofungicide under MAPP numbers 17102 and 19968, for the control of powdery mildew diseases. AQ 10 is a water dispersible granule formulation containing 580 g/kg *Ampelomyces quisqualis* strain AQ10 (minimum 5 x 10^9 CFU/g).
The active component, a naturally occurring fungus, parasitises the powdery mildew hyphae and conidial chains, and can infect the chasmothecia (fruiting bodies) of the powdery mildews. The remaining inert material in the formulation has a low water absorption potential to keep spores dry and viable. AQ 10 does not contain anything that is genetically modified. AQ 10 can be used on a range of crops see table 2 on page 7.

WHY USE AQ 10?

- AQ 10 is a biopesticide for the control of powdery mildew.
- AQ 10 reduces the risk of powdery mildew resistant to chemical fungicides appearing.
- AQ 10 can have a synergistic effect with compatible[#] chemical fungicides.
- AQ 10 is active at a lower temperature (12°C) than sulphur.
- AQ 10 may reduce the amount of over wintering powdery mildew inoculum.
- No phytotoxcity has been seen[##].
- AQ 10 leaves no chemical residues.
- AQ 10 is usable in organic systems.

[#]Trials have shown a synergistic effect when used with myclobutanil.
Figures 1 to 4 overleaf demonstrate activity.
[##]AQ 10 has been used on a wide range of crops under a range of conditions and no phytotoxcity has been observed.

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

Figure 1: AQ 10 on cucumber

Plants with natural infection of powdery mildew *Podosphaera xanthii* (*Sphaerotheca fulginia*).
5 applications were applied at 7-10 day intervals.

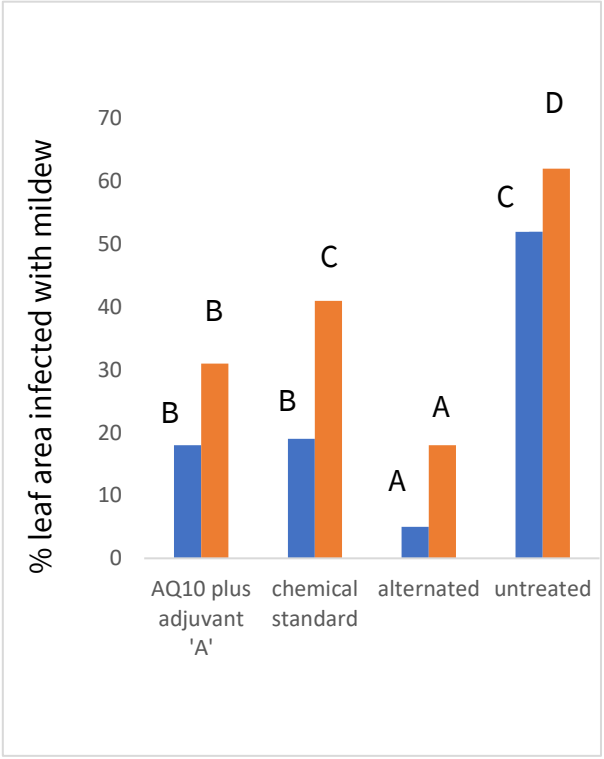
Treatments:

First bars: AQ 10 at 56 g/ha with adjuvant 'A' (a product similar to Nu-Film P).

Second bars: chemical standard (penconazole).

Third bars: alternated treatment – AQ 10 at 56 g/ha with adjuvant 'A' (3 applications) alternated with chemical standard (no cucumber approval in UK) (2 applications).

Fourth bars: untreated.



Key:

Blue bars: - 7 days after treatment 4. Orange bars: - 5 days after treatment 5.
AQ 10 performed as well or better than the chemical standard and when used in alternation with the chemical gave high levels of control. *CBC (Europe) Srl.*

Figure 2: AQ 10 on cucumber with and without an adjuvant

Three applications per treatment carried out 24th & 31st August & 8th September. Assessment on 23 September. Spray volume 600 litres per ha.

Treatments:

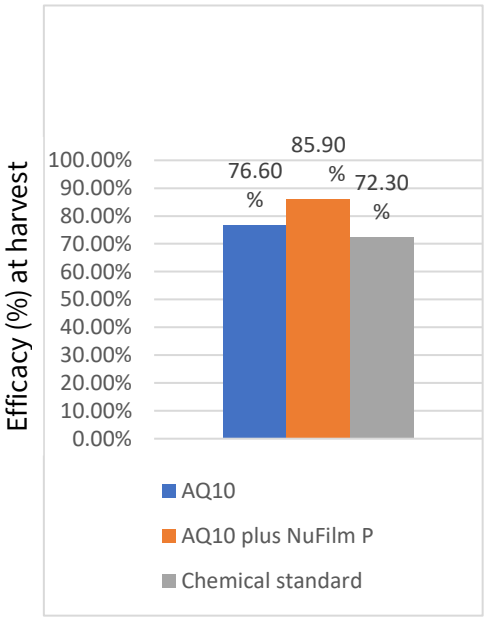
First bar: AQ 10 at 7g/100 litres, no adjuvant.

Second bar: AQ 10 at 7g/100 litres plus Nu-Film P at 30ml per 100 litres.

Third bar: chemical standard.

AQ 10 performed better than the chemical standard. The performance of AQ 10 was improved with Nu-Film P but the difference was not statistically significant.

(CBC (Europe) Srl).



Fargro Limited • Arundel Road • Poling • Arundel • West Sussex • BN18 9PY
www.fargro.co.uk • Telephone: +44 (0) 1903 721591• info@fargro.co.uk

Figure 3: AQ 10 on strawberry comparing efficacy with sulphur and alternated with sulphur fungicide

The crop was field grown in Italy (note that the UK approval is for protected strawberry only). The applications were made at weekly intervals.

Treatments:

First bar: AQ 10 plus adjuvant 'A' (product similar to Nu-Film P).

Second bar: AQ 10 plus adjuvant 'B' (a mineral oil).

Third bar: AQ 10 alternated with a sulphur fungicide.

Fourth bar: sulphur fungicide.

AQ 10 outperformed the sulphur treatment and, applied alone, outperformed an alternating sulphur AQ 10 programme.
CBC (Europe) Srl

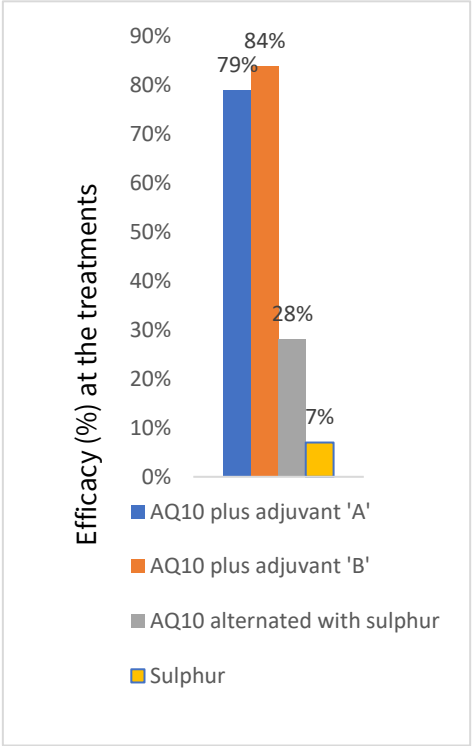


Figure 4: AQ 10 on Lonicera

Powdery mildew, *Microsphaera penicillata (Erysiphe alni*), natural infection. 3 applications at 10 day intervals.

Number of powdery mildew infected *Lonicera* plants (maximum/treatment = 144)

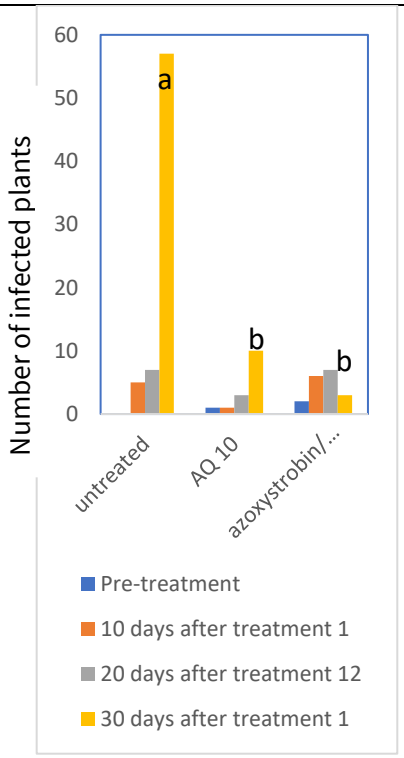
Treatments:

First bars: untreated.

Second bars: AQ 10 at 5g/100 litres plus the adjuvant Activator 90 at 50 ml/100 litres.

Third bars: azoxystrobin followed by bupirimate followed by azoxystrobin. The bars are for pre-treatment assessment, 10 days after first treatment, 20 days after first treatment and 30 days after first treatment.

AQ 10 maintained control over time, performed well under high disease pressure and caused no crop damage unlike the chemical fungicide programme. (AQ 10 may be used on ornamentals using the extension of authorisation EAMU). *CBC (Europe) Srl.*



Fargro Limited • Arundel Road • Poling • Arundel • West Sussex • BN18 9PY
www.fargro.co.uk • Telephone: +44 (0) 1903 721591• info@fargro.co.uk

WHAT DISEASES DOES AQ 10 CONTROL?

Development work has shown activity on a wide range of powdery mildew diseases.

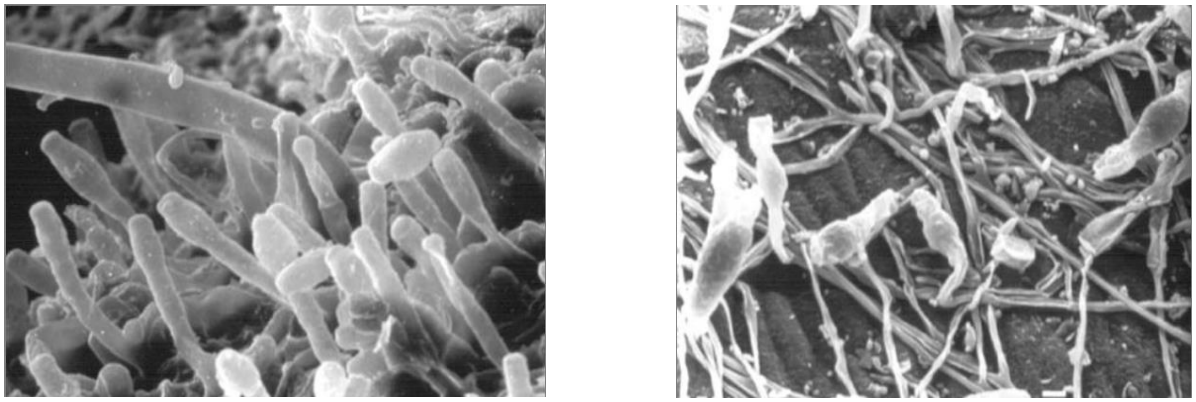
HISTORY AND DEVELOPMENT

In 1861 the first drawing of a powdery mildew infected with *A. quisqualis* was made. In 1930 *A. quisqualis* was identified as an antagonist of powdery mildew. In 1986 Prof. Sztejnberg's laboratory in Israel isolated what became strain M-10 from the wild plant *Caltha edulis*. AQ 10 has been commercially produced as a biofungicide since 1994. Registrations are held in Italy, France, Germany, Greece, Morocco, Slovakia, Slovenia, Spain, Turkey, Switzerland, Holland, South Africa, Cyprus, Belgium, Denmark and Luxembourg. AQ 10 was first approved in the UK in October 2011, the approval being based on a mutual recognition of a German label following earlier inclusion on the European Annex I. In the UK the product was reapproved in 2022.
The fungus readily grows in liquid fermentation and produces large numbers of spores.

HOW DOES AQ 10 WORK?

Ampelomyces has a "mycoparasitic" mode of action. This means it is a parasite of powdery mildew. It penetrates and invades the fungal cells.
Ampelomyces invades the host mycelium (powdery mildew hyphae), conidiophores (part of powdery mildew that produces spores) and conidiospores (powdery mildew spores). It destroys the powdery mildew's cytoplasm (contents of the powdery mildew's hyphae), killing the disease. It is able to infect chasmothecia/cleistothecium fruiting bodies.

Figure 5: untreated powdery mildew (left) and with treatment of AQ 10 (right)



(CBC (Europe) Srl) Italy).

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

Table 1: Powdery mildew life cycle
Infection: Spores, both ascospores and conidiospores (also termed conidia, the common asexual spore type produced in long chains) germinate, penetrate the leaf, form a haustorium (a feeding structure in a plant cell which remains alive), then leaf surface mycelium is produced.
Multiplication: Long chains of conidia (spores) are produced from the leaf surface mycelium leading to mass spore production and widespread infection under suitable conditions.
Infection: Unlike other diseases, there is no need for the presence of free water on the leaf surface for infection. High humidity is required by most species and this can be provided by change from cold night to day conditions or where there is poor air circulation. Various computer models will predict infection based humidity and temperature.
Symptoms: Early symptoms of infection are dwarfing and stunting and possibly reddening of tissues caused by withdrawal of plant foods by the fungus. This may take the form of leaf curling or cupping and distortion. Mycelium can then be observed on the leaf surface, usually but not always on the upper leaf surface. Infection can be on the plant stems. Typically the fungus is white and can start as a white spot. Characteristic powdery symptoms will be caused by production of long chains of conidia.
Survival over winter: The fungus can survive over winter as mycelium (fungal strands) on infected plants. Sexual reproduction of the fungus results in the formation of ascospores (a type of spore) contained in a chasmothecium (also termed a perithecia or cleistothecia), a long-term survival structure for the fungus which can survive on dead or alive plant tissue (crop debris and on leaf).

ON WHAT CROPS AND IN WHAT SITUATIONS CAN AQ 10 BE USED?

At the time of writing AQ 10 is approved for use in protected crops of: aubergine, courgette and summer squash, cucumber, melon, pepper and chilli, strawberry, tomato, winter squash and pumpkin. Use on a number of other crops is allowed in the UK by way of Extension of Authorisations for Minor Uses (EAMU*s). For the crop list see table 2 below.

CROP LIST

Table 2: Crop list	
Crop (Protected)	**EAMU* number or on label**
Agastache spp. (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Angelica (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Apple (propagating material)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Aubergine	On label
Baby leaf crops	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Balm (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Basil (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Bay (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

Bilberry	MAPP 19968 1967 of 2022
Blackcurrant	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Blueberry	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Borage (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Burnet (salad) (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Caraway (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Catnip (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Chamomile (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Chervil (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Chicory (witloof)	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Chilli – see "pepper and chilli"	
Chives (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Clary sage (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Coriander (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Courgette and summer squash	MAPP 17102: 2646 of 2015
Courgette and summer squash	On label
Crab apple (propagating material)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Cranberry	MAPP 19968: 1967 of 2022
Cress	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Cucumber	On label
Curry plant (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Dragonhead (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Dill (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Elderberry	MAPP 19968: 1967 of 2022
Endive	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Edible pansy (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Fennel (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Fenugreek (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Feverfew (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Forest Nursery	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Gooseberry	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Herbs (named)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Horehound (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Hyssop (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Lamb's lettuce	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Land cress	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Lavandin (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Lavender (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Lettuce	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Lovage (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Marigold (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Marjoram (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Melon	On label
Mint (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Mulberry	MAPP 19968: 1967 of 2022
Nasturtium (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

Nettle (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Ornamental plant production	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Oregano (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Origanum heracleoticum (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
other small fruits and berries	MAPP 17102: 2646 of 2015
Parsley (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Pear (propagating material)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Pepper and chilli	MAPP 17102: 2646 of 2015
Pepper and chilli	On label
Plantain (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Pumpkin – see "winter squash and pumpkin"	
Purslane	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Quince (propagating material)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Red mustard	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Redcurrant	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Rocket (salad) (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Rocket	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Rose Hips	MAPP 19968: 1967 of 2022
Rosemary (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Rue (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Sage (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Savory (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Sorrel (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Spike lavender (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Spinach beet	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Spinach	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Squash – see "courgette and summer squash" or "winter squash and pumpkin	
St John's Wort (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Strawberry	On label
Table grapes (propagating material)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Tarragon (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Thyme (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Tomato	On label
Verbena (lemon) (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Violet (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Watercress	MAPP 17102: 0375 of 2018, MAPP 19968: 0659 of 2022
Watermelon	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Wine grapes.(propagating material)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Winter squash and pumpkin	On label
Woodruff (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Yarrow (herb crop)	MAPP 17102: 2646 of 2015, MAPP 19968: 1967 of 2022
Continued	

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

**These extensions of authorised use (EAMUs) provide for the use of AQ 10 in respect of crops and situations, other than those included on the product label. No efficacy or phytotoxcity data have been assessed and as such the 'extension of use' is at all times done at the user's choosing, and the commercial risk is entirely theirs.*

Before use of any pesticide under an extension of authorisation, users must have a copy of the document, which is available for the UK from the HSE/CRD EAMU database. Documents are frequently revised and therefore it is important to check that the documentation is current and correct before any use.

APPLICATION MIXING AND SPRAYING

WHEN SHOULD AQ 10 BE APPLIED?

Apply when conditions are conducive to powdery mildew infection and development but before mildew mycelium becomes established in the crop.

AQ 10 should be applied preventatively, or at low infection levels of less than 3% infected leaf area. AQ 10 has been found to parasitise the overwintering chasmothecium (fruiting bodies) mainly at the immature stage. In southern Europe, trials have demonstrated a reduction in the number of viable chasmothecium from autumn treatments.

HOW BEST TO APPLY AQ 10?

Ideally apply weekly starting from the very first sign of mildew or when it is expected.

What is the application rate?

The rates depend on the plant height; see Table 3 below, and are from 35 to 70g per ha. Spray the crop using conventional sprayers with sufficient water to ensure uniform coverage, including the underside of the leaf.

Table 3: rates of use

Protected crop	Plant height/growing system	AQ 10 application rate
Aubergine, cucumber, pepper, chilli and tomato.	Up to 50cm	35g/ha
	50 to 125cm	53g/ha
	Above 125cm	70g/ha
Courgette, summer squash, melon, pumpkin and winter squash.	Crops not grown vertically	70g/ha
	Up to 50cm	35g/ha
	50 to 125cm	53g/ha
	Above 125cm	70g/ha
Strawberry.	All growing systems	70g/ha

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

What is the recommended water volume for dilution?
Use sufficient water to ensure uniform coverage of the crop, without causing run-off.

Why is an adjuvant recommended and which one to use?
Adjuvants are not necessary, but in repeated trials there is a tendency for efficacy to be improved by a small but statistically insignificant percentage (see figure 2). Adjuvants are most valuable under conditions of low humidity and high temperature. Experience in Italy and other markets show that the use of adjuvants is not required for good efficacy.

The label recommends use of AQ 10 with the adjuvant Nu Film P. As the label text comes from mutual recognition of a German label, the recommended adjuvant may not be the most appropriate for the UK where adjuvants have different authorisation from Germany.
Options include:

Nu Film P: (A0635) (96% pinene ologomers) recommended on label. This adjuvant is subject to a 30 day harvest interval on the labelled edible crops and therefore its use is not normally practicable on these crops.

Activator 90: (A0547) (alkoxylated alcohols and tall oil fatty acids). This performs a wetting function and worked well in one of the trials. For edible crops this may mean that AQ 10 may have to be used at half the recommended rate. For more information see the Activator 90 approval. Efficacy at half rate is untested.

Codacide Oil: (A0629) (95% rapeseed triglycerides). Extender sticker and wetting agent based on natural vegetable oil. Allowable with permission from organic certification bodies.

Silwet L-77: (A0640) AQ 10 is compatible with Silwet. For edible crops, this may mean that AQ 10 may have to be used at half the recommended rate. For more information, see the Silwet approval. Efficacy at half rate is untested.

The efficacy and safety of these adjuvant combinations may not have been fully tested so growers are advised to trial their use on a small area before widespread use.

Practical points
Apply when humidity is increasing. Do not apply in direct sunlight. Apply at a temperature of 12°C to 30°C. Typically apply during the early morning or late evening.
Apply at high water volume, at high pressure with a fine spray. Thorough coverage of the leaf surface is required. In trials *A. quisqualis* spores have survived pressures up to 10 bar.

PRE-MIXING TO ACTIVATE SPORES BEFORE USE

It is recommended to add AQ 10 to water (over 15°C and less than 30°C) and stir. Leave to soak for 30 minutes to an hour. Finally agitate to release and mix the spores into solution.

The use of pre-soaking can improve efficacy, certainly greater than the use of an adjuvant.

The viability of the spores may decline if left in water suspension for more than 12 hours.

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

APPLICATION WITH ULV EQUIPMENT

ULV application can work well provided the coverage is sufficient to place the product in the areas of infection. It is recommended that the minimum nozzle size is no smaller than 0.5mm and that the application is made late evening when the relative humidity is highest (optimum over 80%). The spore size of AQ 10 is 2 by 10 micron.

WHAT IS THE EFFECTIVE TEMPERATURE RANGE?

From 12°C to 30°C. See "Practical points" on page 11.

IS THERE A LIMIT ON THE ACIDITY OR ALKALINITY OF THE SPRAY SOLUTION?

No problems have been reported with normal pH water within the range 6 to 7. Avoid water at over pH8.

WILL AQ 10 WORK AT ALL HUMIDITY LEVELS?

A. quisqualis spores need humidity for germination and therefore application in the evening is preferred.

WHAT TREATMENT INTERVAL IS RECOMMENDED?

Apply every 7 to 10 days with at least two successive treatments.
A maximum of 12 treatments may be applied to the crop.

WHAT IS THE HARVEST INTERVAL?

A 1 day harvest interval is specified on MAPP 19968.

ARE THERE ANY FOOD SAFETY ISSUES WITH REGARD TO USE IN OR NEAR FOOD CROPS?

There are no chemical residues. There is no spore germination at 37°C (body temperature) and the strain is non-pathogenic to humans.

ARE THERE ANY ISSUES OF PLANT PHYTOTOXICITY?

AQ 10 has been used on a wide range of crops under a range of conditions and no phytotoxicity has been observed.

COMPATIBILITIES

TANK MIXING OR POSITION IN CROP MANAGEMENT PROGRAMME

Data and experience mostly generated outside the UK is summarised in Table 4 on page 13. It is possible that some products listed may be different to current UK formulations. Not all the products listed are suitable for foliar application to the approved UK crops. Never mix AQ 10 with a fungicide in its concentrated form. No liability can be accepted for loss or damage resulting from use of products in the table.

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

Table 4: Tank mixing and compatibility guide			
Fungicides:			
Active	**UK Example**	**[1]Rate tested g or ml per 100L**	**Key**
Aureobasidium pullulans DSM 14940 & DSM 14941	Botector / Boni Protect	100	Y
azoxystrobin	Amistar	75	N
Bacillus amyloiquefaciens D747	Amylo X WG	250	Y
Bacillus pumulus QST 2808	Sonata	1000	P
B. subtillis QST713	Serenade (test not UK formulation)		Y
boscalid	Filan (rate variability)		Y/P
captan			N
Cerevisane	Romeo	500	N
chlorothalonil	Bravo		N
copper oxychloride	Cuprokylt		Y
cos-oga	Fytosave	270	N
cyflufenamid	Takumi SC,	30	N
cymoxanil	Option	60	P
cyprodinil plus fludioxonil	Switch	60	N
difenoconazole + fluxapyroxad	Charm	100	N
dimethomorph	Paraat	40	P
dithianon			N
dodine			N
fenhexamid	Teldor	120	N
fenpyrazamine	Prolectus	120	Y
fluazinam			N
fluopyram	Luna Privilege	50	N
folpet			N
fosetyl aluminium	Aliette	250	Y
kresoxim methyl	Stroby	200	N
mancozeb	Karamate, Dithane,		N
mandipropamid	Revus	60	P
mepanipyrim	Frupica	100	Y
meptyldinocap	Kindred		N
metalaxyl-m	Subdue, SL567A.	100	Y
metrafenone	Vivando	75	Y

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

Active	UK Example		Key
myclobutanil	Systhane 20EW	28	Y
orange oil			N
penconazole	Topas	30	Y
Penthiopyrad	Fontelis		N
potassium hydrogen carbonate	(test not a UK formulation)		Y
propiconazole	Bumper 250 EC	50	Y
Proquniazid	Talius	25	Y
pyrimethanil	Scala	75	Y
Pythium oligandrum M1	Polyversum	60	Y
SB Plant Invigorator	SB Plant Invigorator		N
spiroxamine			Y
sulphur	Microthiol Special, Thiovit Jet, Solfa WG, Kumulus		N
tebuconazole	Folicur	40	Y
trifloxystrobin	Flint	14	N
zoxamide	(test not a UK formulation)		Y
Insecticides:			
Bacillus thuringiensis	Lepinox Plus, DiPel DF		Y
Beauveria bassiana	Naturalis-L		Y
fatty acids	Flipper	2000	N
maltodextrin	Majestik, Eradicoat	2500	N
pyrethrins	Pyrethrin 5EC, Spruzit		Y
SB Plant Invigorator	SB Plant Invigorator		N
spirotetramat	Batavia / Movento (test not a UK formulation)		Y
Fertilisers: Avoid foliar feeding with high pH fertilisers.			
SB Plant Invigorator	SB Plant Invigorator		N
Adjuvants: See page 11			
Continued			

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

[1] The tank mix rate tested. This is not necessarily related to a UK rate of use.
Y: AQ 10 has been successfully tank mixed with fungicides without loss of spore viability. Mix AQ 10 with the fungicide only at tank mix concentration, never with the concentrate. Only one formulation may have been tested and work was based on overseas formulations.
P: partial compatibility – a certain level of reduction in spore germination could occur; tank mix the fungicide with AQ 10 and apply the spray solution within 30 minutes of tank mixing.
N: Do not tank mix and allow at least 5 days between an AQ 10 treatment.
N.B. All the products were tested at a rate similar to the recommended rate of the product in its country of origin, which may be different to UK recommendations.
The UK equivalent trade name of the fungicide tested is provided, but formulations in the country of test may have been different and the actual product tested may be more or less harmful than that available in the UK. Only those products known to have been tested with a different formulation from that in the UK are marked (test not UK formulation).
A number of the products listed may not yet be approved in the UK, or not approved for protected plant production and their inclusion on this list does not infer any recommendation.
No liability will be accepted for any loss or damage as a result of using products listed in this table. Tank mix compatibility should not be considered a recommendation.
Data and experience mostly generated outside the UK is summarised here. It is possible some products other than those listed may be different to current UK formulations. Not all the products listed may be suitable for foliar application to the approved UK crops.
Never mix AQ 10 with a fungicide in its concentrated form.
No liability can be accepted for loss or damage resulting from use of products in this table.

COMPATIBILITY WITH OTHER COMPONENTS OF A CROP PRODUCTION PROGRAMME OR WITH OTHER BENEFICIAL FUNGI OR ORGANISMS?

AQ 10 is very specific to powdery mildew fungi. It will have no effect on beneficial insects and mites and no effect on aquatic organisms, birds or bees.

ARE THERE ANY VISIBLE SPRAY DEPOSITS?

These have not been observed.

IS AQ 10 USABLE IN ORGANIC SYSTEMS?

AQ 10 is used in organic systems according to EU 889/2008.

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk

WHAT IS THE SHELF LIFE AND WHAT ARE THE RECOMMENDED STORAGE CONDITIONS?

AQ 10 contains living spores and particular care should be taken to store it properly. Store the product in a cool, dry place. If stored in the original sachet AQ 10 has a guaranteed shelf-life of 1 year at room temperature. To maintain optimum efficacy of the product it should be used withing 18 months if stored between 4 and 6°C. Do not store the product in extreme heat or cold temperature. Open sachets should be completely used. It is recommended not to store the product at temperatures higher than 30°C. Do not freeze.

HOW IS AQ 10 PACKAGED?

AQ 10 is packed in foil sachets containing 30g which treats 4200 m^2 at the 70 g/ha rate.

---

*Extensions of authorised use (EAMUs) provide for the use in respect of crops and situations, other than those included on the product label. No efficacy or phytotoxcity data have been assessed and as such the 'extension of use' is at all times done at the user's choosing, and the commercial risk is entirely theirs. Before use of any pesticide under an extension of authorisation, users must have a copy of the document, which is available for the UK from the HSE/CRD EAMU database. Documents are frequently revised and therefore it is important to check that the documentation is current and correct before any use.

APPROVAL HOLDER

CBC (Europe) S.r.l, via Zanica, 25 24050 Grassobbio (BG), Italy.
Telephone: 0039 035 335313
Marketed in the UK by Fargro Ltd.

Pack Size**:** 30g (outer 30). Safety data sheet available on request.

Fargro Limited · Arundel Road · Poling · Arundel · West Sussex · BN18 9PY
www.fargro.co.uk · Telephone: +44 (0) 1903 721591· info@fargro.co.uk