

UNIZEB GOLD

(MAPP 18186)

December 2017

UNIZEB GOLD is a suspension concentrate containing 500g/L mancozeb for the control of various fungal diseases in cereals. For use in the reduction of *Septoria tritici* (*Mycosphaerella graminicola*) in winter and spring wheat, triticale and spelt.

UNIZEB GOLD Product Profile

Active ingredient	mancozeb
Inclusion rate	500g/L
Formulation	Suspension Concentrate (SC)
Crops	Winter wheat, spring wheat, triticale, spelt
Maximum individual dose	3.0L/ha
Maximum number of treatments	3
Latest time of application	Up to and including full flowering
Pack size	10L
Aquatic buffer zone	5m
Water volume	200 – 400L/ha

UNIZEB GOLD in Cereals

UNIZEB GOLD contains mancozeb, a multisite protectant fungicide with contact activity and is part of the dithiocarbamate fungicide group.

UNIZEB GOLD can be used in cereals as a partner to azoles, strobilurins and SDHIs:

- For the control of *Septoria tritici*
- As an alternative to other multisite protectant fungicides, chlorothalonil and folpet
- As part of an anti-resistance strategy
- For additional activity against yellow rust and brown rust
- For additional activity against fusarium ear blight (*F. graminearum* and *F. culmorum*)
- UNIZEB GOLD also provides manganese, a key nutrient in several physiological processes particularly photosynthesis, and zinc, an essential constituent of many enzymes and proteins.

Mancozeb for *Septoria tritici* Control

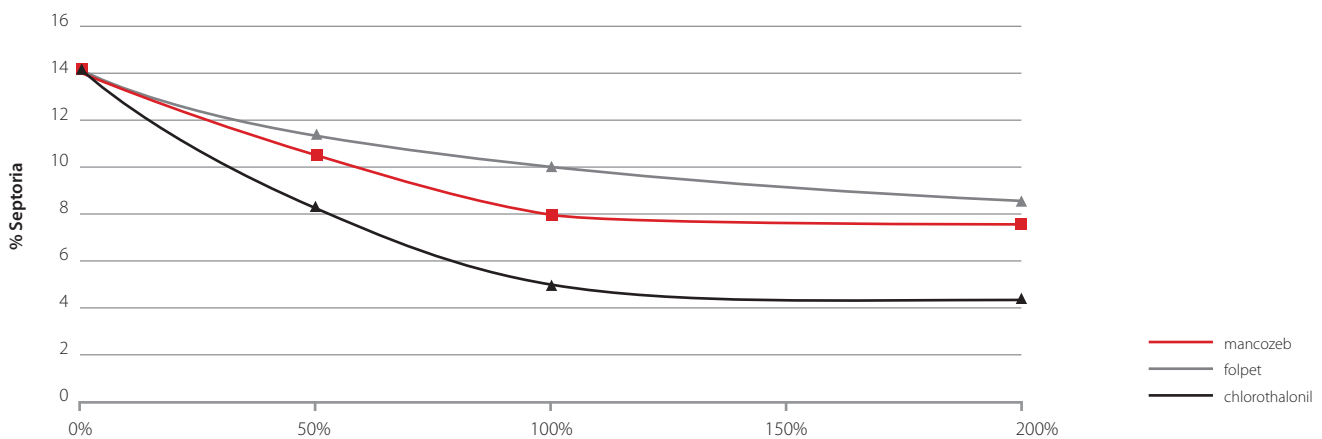
Mancozeb provides activity and protection against *Septoria tritici*, work by both AHDB (See Table 1) and ADAS (See Graph 1 on page 2) has demonstrated that mancozeb activity was greater than folpet, although slightly behind chlorothalonil.

Table 1. Wheat Disease Activity Ratings For Multi-Site Fungicides Approved For Use On Wheat

Chemical Group	FRAC Code	Active Ingredient	Activity Rating			
			Mildew	<i>Septoria tritici</i>	Yellow rust	Brown rust
Dithiocarbamates	M3	mancozeb	+	+++	+	+
Phthalimides	M4	folpet	—	++	+	+
Chloronitrile	M5	chlorothalonil	+	++++	—	—

Source: AHDB Information Sheet 56 Spring 2017: Fungicide activity and performance in wheat.

Graph 1. ADAS Trials demonstrate that mancozeb activity against *Septoria tritici* was better than folpet, but behind Chlorothalonil. Application of multisites at T1 and T2 over Ignite (epoxiconazole) 1.125 fb Aviator 1.0 (bixafen + prothioconazole) (top 3 leaves combined), cv Consort.



Source: ADAS Trials, Boxworth, 2014.

In over 60 years of use in a wide range of crops, no resistance to mancozeb has been recorded. In vitro testing of *Septoria tritici* field strains carried out by Rothamsted Research on behalf of UPL showed no cross-resistance between mancozeb and the single-site fungicides epoxiconazole, azoxystrobin, carbendazim and bixafen. Resistant mutants (SDHI fungicides) and field strains (MBC, QoI and DMI fungicides) were all well controlled by mancozeb.

Source: Rothamsted Research: "In vitro sensitivity testing of Zymoseptoria tritici field strains and mutants with resistant phenotypes to site-specific fungicides used for Septoria leaf blotch control" March 2014.

UNIZEB GOLD As A Source Of Plant Nutrition

Mancozeb is a complex of zinc and maneb containing 20% Mn (Manganese) and 2.5% Zn (Zinc) (ref. FAO Spec.), therefore it can supply useful amounts of these nutrients when applied to cereals.

Mancozeb contains manganese, helping foliage to produce and maintain good photosynthetic activity, and zinc, another essential trace element essential for growth and protein production.

Table 2 below compares the amount of manganese supplied from UNIZEB GOLD compared to other sources of this nutrient.

Table 2. Comparison Of Products Supplying Manganese

Product	Amount of Mn in 1.0kg/L	Amount of Zn in 1.0kg/L
UNIZEB GOLD	100g	12.5g
manganese sulphate	270g	—
manganese 15%	150g	—

Tank Mixing

UNIZEB GOLD can be used as part of an anti-resistance fungicide strategy. Apply UNIZEB GOLD in mixture with other fungicides with alternate modes of action where possible. Use as part of an integrated disease control strategy including use of disease resistant varieties.

UNIZEB GOLD can be tank mixed with a wide range of other products. For the latest information on tank mix recommendations, please visit our website at uk.uplonline.com.

BASIS points for the technical information provided by this update are CP/59401/1718/g (1 CPD).

To claim please e-mail: assistant@basis-reg.co.uk.

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