

Supplementary Materials

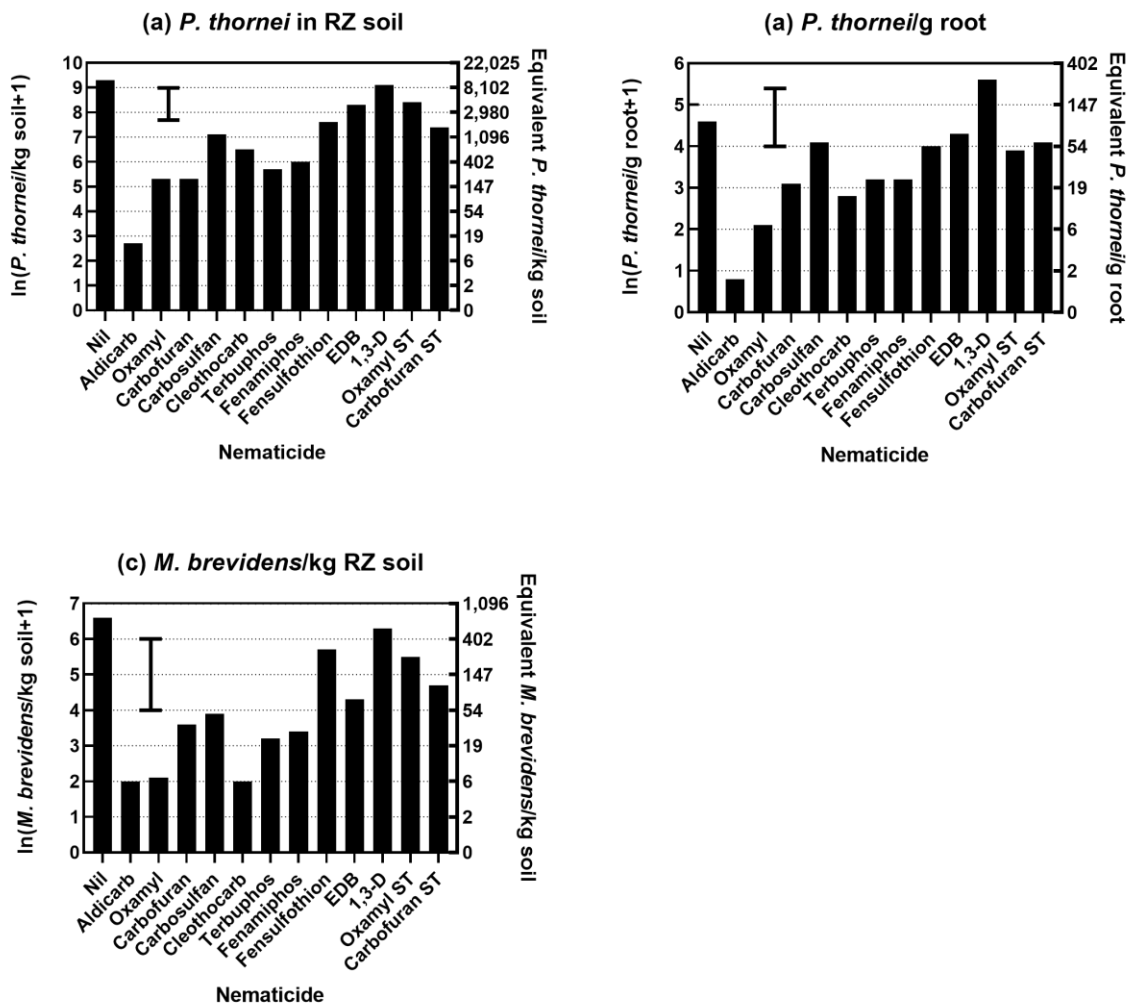


Figure S1. Main effects of nematicides (highest rate of each) on (a) *Pratylenchus thornei* in the root zone soil (0–20 cm depth), (b) *P. thornei*/g roots (0–20 cm depth); and (c) *Merlinius brevidens* in the root-zone soil (0–20 cm depth) at wheat stem elongation (Z32) at 72 days after sowing in Experiment 4 at Pirrinuan. Fertiliser had no significant effect on nematode populations. Bar markers = l.s.d. ($P=0.05$).

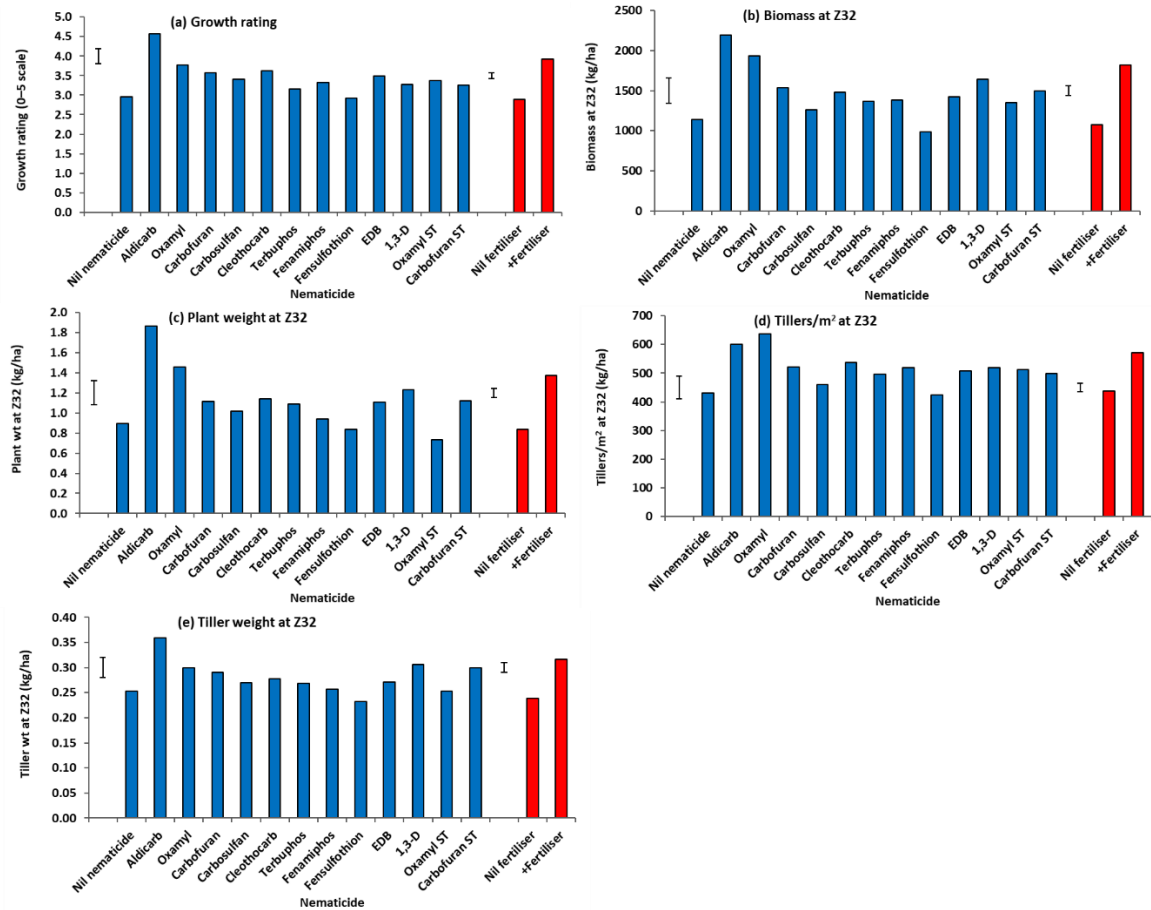


Figure S2. Main effects of nematicides (highest rate of each) and fertiliser (N120P30Zn15 kg/ha) on (a) growth rating (0–5 scale) of wheat plants at 63 DAS (b) biomass (kg/ha) at Z32 (stem elongation) 72 DAS, (c) dry weight/plant at Z32, (d) tiller number/m² at Z32, (e) dry weight/tiller at Z32 in Experiment 4 at Pirrinuan. Bar markers = l.s.d. ($P=0.05$).

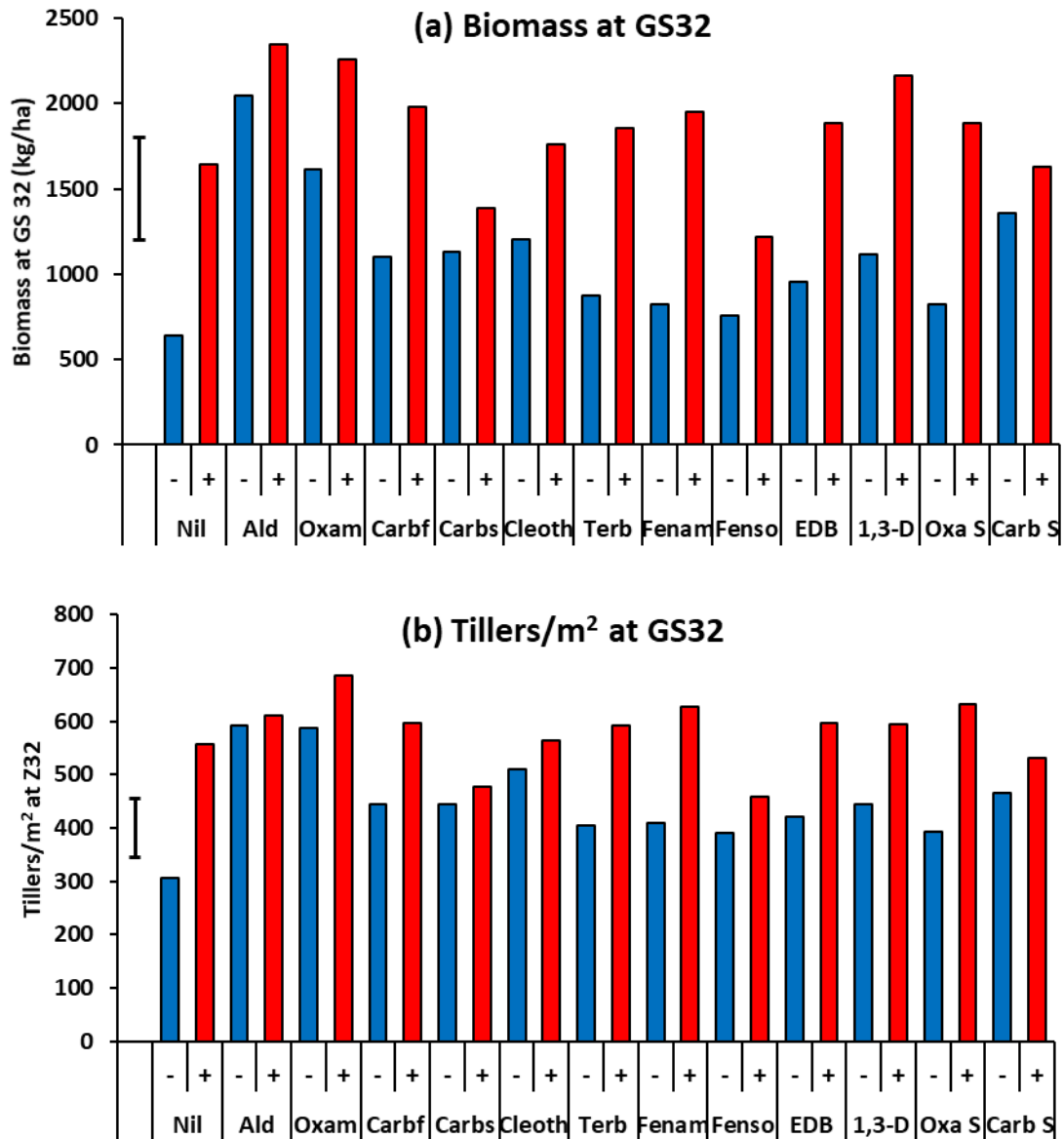


Figure S3. Interactive effects of nematicides (highest rate of each) and fertiliser (\pm N120P30Zn15 kg/ha) on (a) biomass (kg/ha) at Z32 (stem elongation at 72 DAS), and (b) tillers/m² at Z32 in Experiment 4 at Pirrinuan. Where abbreviated nematicide names are: Ald = aldicarb, Oxam = oxamyl, Carbf = carbofuran, Carbs = carbosulfan, Ceoth = cleothocarb, Terb = terbufos, Fenam = fenamiphos, Fenso = fensulphion, EDB = ethylend dibromide, 1,3-D = 1,3-dichloropropene, Oxa S = oxamyl seed treater, Carb S = carbofuran seed treater. Bar markers = l.s.d. ($P=0.05$).

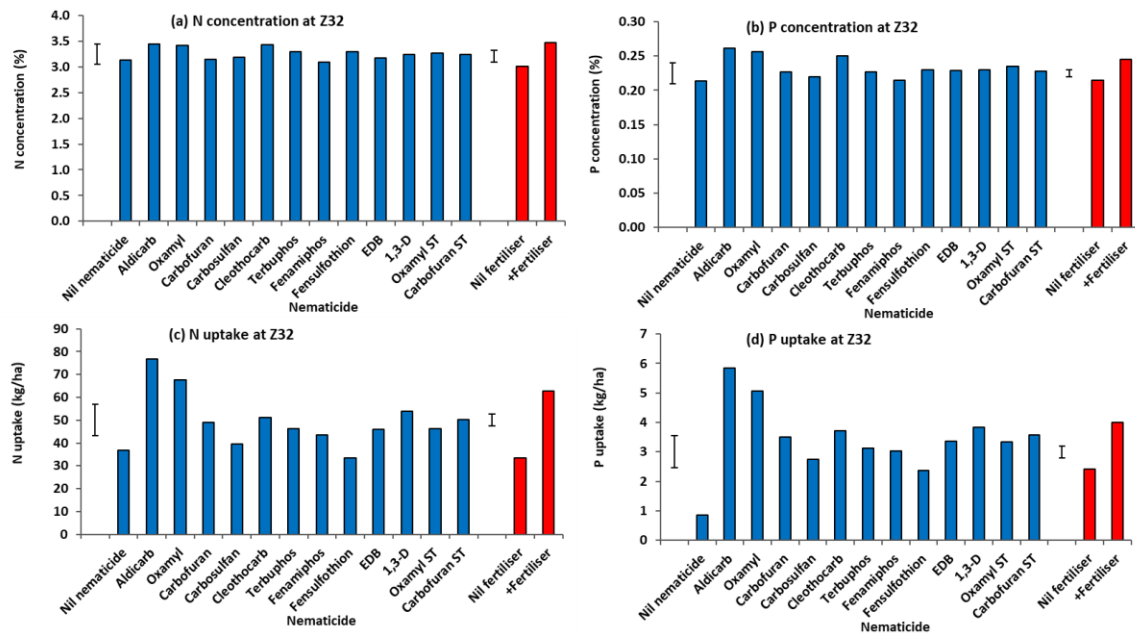


Figure S4. Main effects of nematicides (highest rate of each) and fertiliser (N120P30Zn15 kg/ha) on N and P nutrition of whole plant tops at Z32 (stem elongation) on 72 DAS, (a) N concentration (b) P concentration (c) N uptake/ha and (d) P uptake/ha in Experiment 4 at Pirrinuan. Bar markers = 1 s.d. ($P=0.05$).

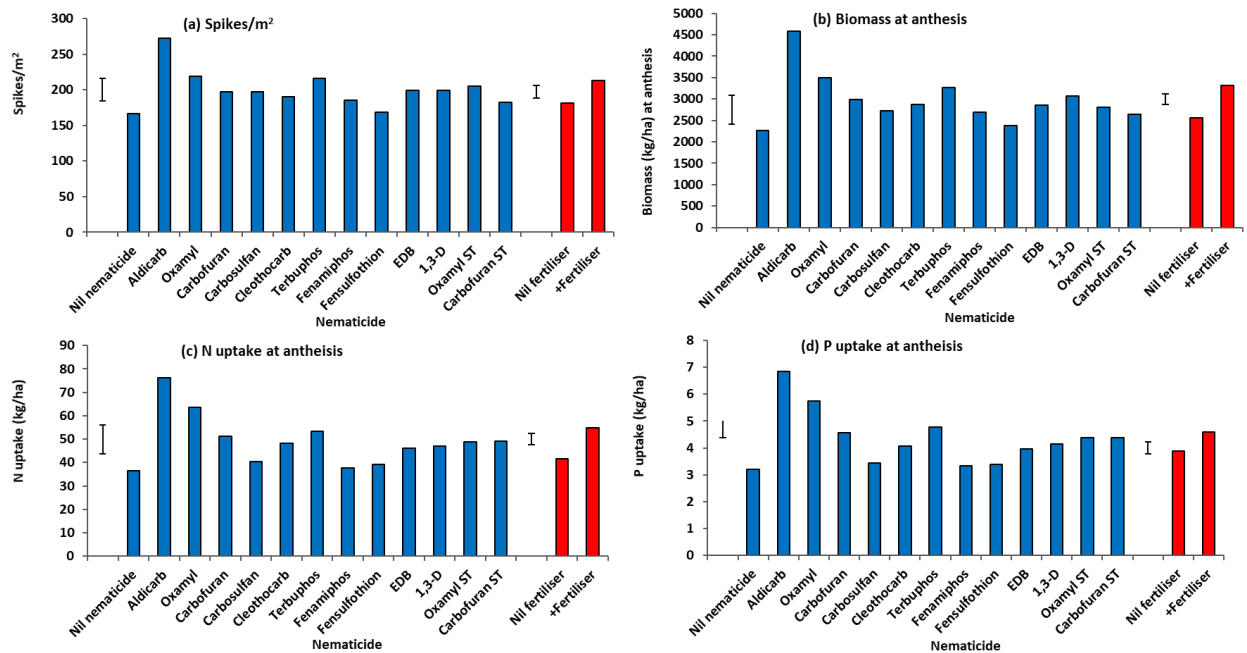


Figure S5. Main effects of nematicides (highest rate of each) and fertiliser (N120P30Zn15 kg/ha) on wheat plants at Z65 (anthesis) on 107 DAS for (a) spike density (b) biomass (c) N uptake/ha and (d) P uptake/ha in Experiment 4 at Pirrinuan. Bar markers = 1 s.d. ($P=0.05$).

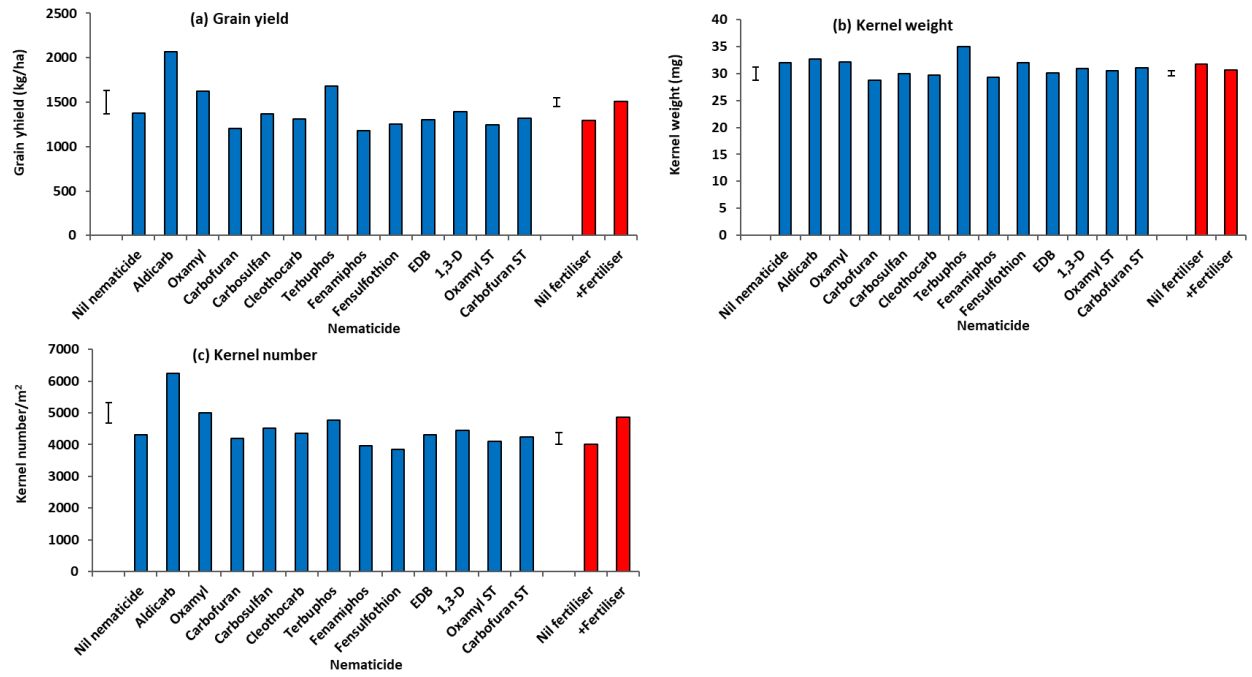


Figure S6. Main effects of nematicides (highest rate of each) and fertiliser (N120P30Zn15 kg/ha) on (a) grain yield (b) kernel weight and (c) kernel number/m² in Experiment 4 at Pirrinuan. Bar markers = l.s.d. ($P=0.05$).

Table S1. Soil properties of (a) Formartin site and (b) Macalister site. Values are means of duplicate laboratory analysis of composite samples of nine cores from the field.

(a) Formartin

| Soil profile depth (cm) | Particle size | | | Organi | | pH | Electrical Conductivity (EC _{1:5} , dS/m) |
|----------------------------|---------------|------|------|--------|-------|-----|--|
| | Sand | Silt | Clay | c | Total | | |
| | | | | C | N | | |
| | (%) | (%) | (%) | (%) | (%) | | |
| 0-15 | 16.5 | 15.9 | 67.6 | 0.96 | 0.059 | 8.5 | 0.283 |
| 15-30 | 20.5 | 10.4 | 69.1 | 0.95 | 0.041 | 8.9 | 0.276 |
| 30-60 | 16.8 | 12.3 | 71.0 | 0.79 | 0.035 | 9.1 | 0.396 |
| 60-90 | 12.8 | 14.3 | 72.9 | 0.66 | 0.030 | 9.3 | 0.666 |
| 90-120 | 13.7 | 13.5 | 72.8 | 0.61 | 0.023 | 9.2 | 1.212 |
| Method ^a | D65 | | | 6A1 | 7A2 | 4A1 | 3A1 |

(b) Macalister

| Soil profile depth (cm) | Particle size | | | Organi | | pH | Electrical Conductivity (EC _{1:5} , dS/m) |
|----------------------------|---------------|------|------|--------|-------|-----|--|
| | Sand | Silt | Clay | c | Total | | |
| | | | | C | N | | |
| | (%) | (%) | (%) | (%) | (%) | | |
| 0-15 | 19.5 | 12.7 | 67.8 | 0.86 | 0.071 | 8.6 | 0.269 |
| 15-30 | 19.0 | 11.2 | 69.9 | 0.66 | 0.058 | 8.9 | 0.346 |
| 30-60 | 21.0 | 10.6 | 68.5 | 0.64 | 0.056 | 9.0 | 0.418 |
| 60-90 | 17.2 | 11.7 | 71.2 | 0.66 | 0.054 | 9.0 | 0.674 |
| 90-120 | 13.9 | 14.3 | 71.9 | 0.58 | 0.043 | 9.0 | 0.873 |
| Method ^a | D65 | | | 6A1 | 7A2 | 4A1 | 3A1 |

^aMethod: D65 = pipette method (Day 1965); other codes from Rayment and Higginson (1992)

Table S6. Effects of nematicides with and without fertiliser (N120P30Zn15 kg/ha) on percentage of the root length colonised with arbuscular mycorrhizal fungi for wheat cv. Banks sampled at Z40 (booting) from Experiment 2 at Macalister. Values transformed by $\arcsin \sqrt{\text{proportion}}$ for ANOVA with backtransformed values as % in parentheses

| Nematicide | Rate | Nil fertiliser | Plus fertiliser |
|--|-----------|----------------|-----------------|
| Nil | 4 kg/ha | 0.506 (23.5) | 0.545 (26.9) |
| Aldicarb | 4 kg/ha | 0.526 (25.3) | 0.493 (22.4) |
| Aldicarb | 10 kg/ha | 0.515 (24.2) | 0.533 (25.9) |
| Oxamyl | 4 kg/ha | 0.517 (24.4) | 0.504 (23.3) |
| Carbofuran | 4 kg/ha | 0.601 (31.9) | 0.616 (33.4) |
| Carbosulfan | 4 kg/ha | 0.581 (30.1) | 0.457 (19.5) |
| Terbufos | 4 kg/ha | 0.606 (32.4) | 0.495 (22.6) |
| Fenamiphos | 4 kg/ha | 0.618 (33.5) | 0.394 (14.8) |
| Fensulphion | 4 kg/ha | 0.478 (21.1) | 0.531 (25.6) |
| EDB | 14.8 L/ha | 0.534 (25.9) | 0.608 (32.6) |
| 1,3-dichlopropene | 27.6 L/ha | 0.546 (27.0) | 0.445 (18.6) |
| Mean | | 0.548 (27.1) | 0.511 (23.9) |
| F test for treatments was non-significant; SEM nematicides = 0.038; fertiliser = 0.016; nem x fert = 0.053 | | | |