

Study on the STOP effect of fungicide combinations to control late blight in potato



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Goal of the field trial

The objective of this study was to investigate the eradicator efficacy of fungicide combinations to control late blight during the growing season.

Materials and methods

The first three treatments were the same for the different objects (mancozeb 1 kg/ha). The fungicide treatments were conducted at 7-day intervals. The tested fungicide combinations were applied 3 times at 3-day interval. Finally, all objects were 2 times sprayed by fluazinam (200 g/ha) and 2 times by cyazofamide +heptamethyltrisiloxane (80 g/ha + 126.9 g/ha). The different fungicide treatments are summarized in table 1.

Table 1: Applied fungicide treatments.

| Treatment | Controle | Object 1 | Object 2 | Object 3 | Object 4 | Object 5 | Object 6 | Object 7 | Object 8 | PCA |
|-----------|-----------|-----------------|------------------|------------------|-------------------|------------------|-------------------|-------------------|--------------------|----------|
| 1 | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb |
| 2 | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb |
| 3 | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb | mancozeb |
| 4 | untreated | Ranman + Valbon | Ranman + Acrobat | Ranman + Mixanil | Ranman + Tattoo C | Shirlan + Valbon | Shirlan + Acrobat | Shirlan + Mixanil | Shirlan + Tattoo C | Tattoo C |
| 5 | untreated | Ranman + Valbon | Ranman + Acrobat | Ranman + Mixanil | Ranman + Tattoo C | Shirlan + Valbon | Shirlan + Acrobat | Shirlan + Mixanil | Shirlan + Tattoo C | Acrobat |
| 6 | untreated | Ranman + Valbon | Ranman + Acrobat | Ranman + Mixanil | Ranman + Tattoo C | Shirlan + Valbon | Shirlan + Acrobat | Shirlan + Mixanil | Shirlan + Tattoo C | Acrobat |
| 7 | untreated | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan |
| 8 | untreated | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan | Shirlan |
| 9 | untreated | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman |
| 10 | untreated | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman | Ranman |



Fig. 1: Certified seed of Bintje was planted on the 27th of April

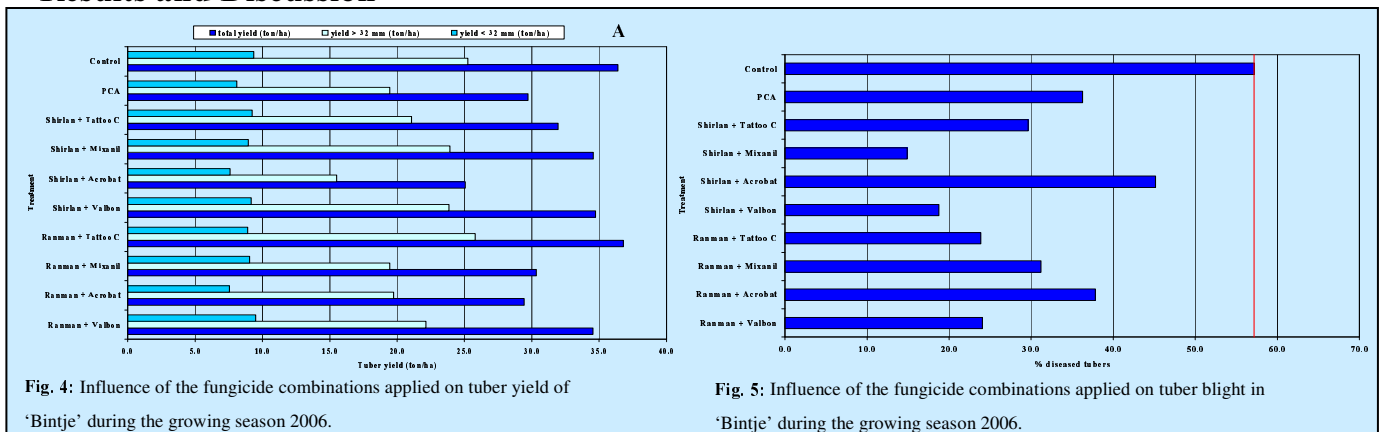


Fig. 2: Plants from two 2 middle rows were artificially infected by *P. infestans*.



Fig. 3: Tubers were harvested on 20 September.

Results and Discussion



The growing season 2006 was characterized by high temperatures en almost no rain in June and July. In August the weather was cloudy, rather cold with a lot of rain. These weather conditions were very favourable for late blight. Due to the heat waves of June and July the foliage started to die in August and *P. infestans* developed in the second part of August. Because of that no incidence of foliage blight was scored during the growing season 2006.

No significant differences in yield were observed for the different treatments applied. The mean yield of all treatments was 32,3 ton/ha and the combination cyazofamid + heptamethyltrisiloxaan (Ranman) + propamocarb + chlorothalonil (Tattoo C) had the highest yield: 36,8 ton/ha.

The % diseased tubers fluctuated between 14,9 and 45,1 % for the different treatments tested. In the control 57,2 % infected tubers were observed. This observation can be explained by the intense rainfall of August. The amount of diseased tubers was lowest for fluazinam (Shirlan) + cymoxanil + chlorothalonil (Mixanil) and fluazinam (Shirlan) + benthiavalcarb-isopropyl (Valbon), 14,9 and 18,8 % respectively.