

POSTER

Effects of self-drying plant oils in biological plant protection

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The fungicidal effect of various plant oils was demonstrated in the 1940s (Clayton et al., 1943). Plant oils could be advantageous because of their low ecotoxicological side effects, high biodegradability, and applicability in organic farming. However, despite their efficacy against fungi and pests, the role in plant protection has been somewhat limited until now. In the discussion about plant protection and the environment, biorationals, like natural plant oils, might be promising candidates for a more sustainable approach. Especially self-drying plant oils (e.g. linseed oil, tung oil), rich in unsaturated fatty acids, could be used in plant protection or plant strengthening. Based on previous knowledge, we hypothesized that self-drying plant oils could be effective against pathogens. In a greenhouse experiment on green beans (*Phaseolus vulgaris*), as well as on potato in the field, we tested several plant oils and mixtures. Self-drying oils showed a protective and a curative effect against the fungus *Uromyces appendiculatus* (bean rust) on green beans. A protective application (two days before inoculation (2dbi)) of six tested plant oils reduced bean rust infestation between 23% and 72%. This wide range in disease control of biorationals must be discussed and further evaluated. Also effects on the plant itself have to be considered, because they could possible lead to plant strengthening but also to plant stress. In future experiments, the effect of self-drying oils in different host-parasite interactions should be studied as well as effects on plant traits.

Clayton, E.E., Smith, T.E., Shaw, K.J., Gaines, J.G., Graham, T.W., Yeager, C.C. (1943).

Fungicidal tests on blue mold (*Peronospora tabacina*) of tobacco. *Journal of Agricultural Research* 66:261–276.