ChatGPT

Bonin (Poland) 2001–2002 Late Blight DSS Trials (NegFry Validation)

Trial design: Four field trials at IHAR-Bonin (north Poland) in 2001–2002 compared the Danish NegFry decision support system to a conventional spray calendar. Plots were arranged in randomized blocks, with the **NegFry** regime vs. a **"routine"** schedule (weekly fungicide sprays from row-closure onward) [1]. NegFry's first spray was triggered by an accumulated risk index, whereas the routine plots simply received applications at fixed 7–10 day intervals.

- **Results – Spray savings:** NegFry maintained effective late-blight control while cutting fungicide use substantially. On average NegFry plots needed **~34.5% fewer applications** than the routine program [2] – roughly one-third fewer sprays. In practical terms this meant about **1–3 fewer treatments** (≈30% reduction in spray count) under Polish conditions [3]. The reduction came mainly from *delaying the first spray* (NegFry typically scheduled the first application 2–21 days before the actual outbreak) and *lengthening spray intervals* [4] [3]. By these savings the DSS cut spray numbers without losing disease control. (Kapsa *et al.* report graphs of disease progress and risk values showing NegFry vs. routine curves; details are given in the cited sources.)

- **Sources & suitability:** The primary reference is **Kapsa *et al.* (2003)**, *J. Plant Protection Research* 43(2): 171–179 (Poland), which documents the Bonin 2001–02 trials [2]. This peer-reviewed paper presents the trial results (3 figures, 4 tables) including spray counts, disease scores and risk curves. Polish-language bulletins (e.g. Kapsa & Osowski 2002, *Biuletyn IHAR* 223/224:351–359) and IHAR web reports also summarize the same data [3]. These sources clearly state the spray-saving percentages and experimental design, making them directly citable in a validation report on NegFry under Polish conditions.

Conclusion: The Bonin 2001–02 field trials (IHAR Bonin) demonstrated that using the NegFry DSS cut late-blight sprays by roughly one-third while preserving disease control [2] [3]. These documented results (with quantitative savings and graphical analyses of disease risk) provide a complete validation reference for the DSS in Polish potato crops.

Sources: Kapsa *et al.* 2003 (J. Plant Prot. Res.) [2]; IHAR Bonin research reports and bulletins (e.g. Kapsa & Osowski 2002, Biul. IHAR) [3]. These contain the full design and spray-saving data for Bonin 2001–02.

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[1] [3] [4] Zaraza ziemniaka – Instytut Hodowli i Aklimatyzacji Roślin Państwowy Instytut Badawczy Oddział w Boninie
https://ziemniak-bonin.pl/katalogi/choroby/zaraza-ziemniaka/

[2] NegFry . Decision Support System for late blight control in potato crops . results of validation trials in North Poland.
https://agris.fao.org/search/en/providers/123819/records/64735c0b53aa8c896308bb82