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Impact and control of powdery mildew on soybeans in southern Australia

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Powdery mildew, (*Erysiphe diffusa* (syn. *Microsphaera diffusa*)) was first observed in soybeans in southern New South Wales, Australia in 2011. This raised serious concerns that production might be constrained if the disease severity reached the levels experienced in the northern soybean production areas of Australia. Field experiments were conducted in three consecutive seasons examining the response of three soybean cultivars, Djakal, Snowy and N005A-80 to two fungicides and two fungicide application regimes. Djakal was identified as having strong resistance to powdery mildew. All fungicide treatments provided significant reductions in infection severity with the split application of tebuconazole and both the single and split application of tebuconazole + prothioconazole providing the most effective disease control. The severity of infection varied between seasons, with the highest grain yield reduction of 11% occurring for the Snowy cultivar in the 2014/15 season, corresponding with the most severe season for powdery mildew infection. Few differences were observed among the treatments in soybean lodging, physiological maturity date, seed oil and protein concentrations. It was concluded that the application of fungicides provided effective control of powdery mildew infection, however application is not always warranted in southern Australia and therefore each situation should be evaluated individually.