

INTISARI

Pengelolaan penyakit tanaman secara terpadu merupakan salah satu strategi pengendalian penyakit layu fusarium pisang yang tepat dengan melibatkan peran serta petani sebagai pelaku utama kegiatan pertanian. Penelitian ini bertujuan mengetahui tingkat pengetahuan petani dalam pengelolaan penyakit layu fusarium, mengetahui ras dan virulensi dari isolat *Fusarium oxysporum* f.sp *cubense* (Foc), pada tanaman pisang di Desa Sidomulyo, Kecamatan Bambanglipuro, Kabupaten Bantul.

Penelitian di lapangan dengan melakukan wawancara dengan 100 petani dan survei kejadian penyakit di lapangan. Data kuesioner dianalisis secara deskriptif menggunakan program SPSS (*Statistical Package for Social Science*). Penelitian di laboratorium dan di rumah kaca dengan menggunakan 13 isolat Foc yakni isolat PR11, PKJ20, RU20, PR30, AH40, PKJ40, A41, RB42, PR43, RU51, A60, RP60, dan A80. Pengujian ras secara molekuler dengan menggunakan dua jenis primer yakni primer *Foc in general* FocEf3 dan primer spesifik ras 4 Foc-1/Foc-2. Uji virulensi pada bibit kultivar Ambon Kuning dengan menggunakan Rancangan Acak Lengkap (RAL) yang terdiri dari 14 perlakuan dan 4 ulangan. Analisa data menggunakan sidik ragam dan uji lanjut *Duncan Multiple Range Test* (DMRT) pada taraf 5 %.

Hasil analisis data kuesioner secara keseluruhan menunjukkan tingkat pengetahuan petani di Desa Sidomulyo mengenai pengelolaan penyakit layu fusarium pisang berada pada kategori cukup yakni sebesar 56 %. Faktor yang mempengaruhi tingkat pengetahuan petani adalah pengetahuan mengenai penyakit layu fusarium, pengetahuan mengenai varietas rentan, pengetahuan tentang bibit sehat, asal bibit, pengolahan lahan, sistem pertanaman, penjarangan, dan pengendalian penyakit. Rata-rata kejadian penyakit tertinggi ditemukan di dusun Plemantung yakni 47,54 % dan yang terendah di dusun Ngireng-ireng sekitar 7 %.

Hasil pengujian secara molekuler menunjukkan semua isolat merupakan isolat *Foc* dan dari 13 isolat yang digunakan terdapat 9 isolat yang merupakan ras 4 yakni isolat A80, RP60, PR11, A41, AH40, PKJ40, PR30, RB42, dan PR43. Analisis DSI menunjukkan terdapat 8 isolat bersifat sangat virulen dan 5 isolat virulen. Isolat yang memiliki virulensi tertinggi adalah PR30 yang merupakan ras 4 dengan intensitas penyakit 97,73 %.

Kata kunci : pengelolaan, petani, pisang, Foc, ras, dan virulensi

ABSTRACT

Integrated disease management is one of proper strategies for controlling banana wilt disease by involving the participation of farmers as the main actor in agricultural activities. This research was aimed to figure out the level of farmer's knowledge in managing fusarium wilt disease and to recognize the race and virulence of *Fusarium oxysporum* f.sp *cubense* (Foc) isolates on banana in Sidomulyo Village, District of Bambanglipuro, Regency of Bantul.

Field experiment was conducted by interviewing 100 of farmers and surveying the disease incidence. Questionnaire data was descriptively analyzed using SPSS (*Statistical Package for Social Science*) program. Meanwhile, laboratory study was performed in laboratory and screen house using 13 of Foc isolates namely PR11, PKJ20, RU20, PR30, AH40, PKJ40, A41, RB42, PR43, RU51, A60, RP60, and A80. Molecular analysis on race was carried out using two types of primers i.e. *Foc in general* FocEf3 and specific primer for race 4 Foc-1/Foc-2. Virulence test on banana seedling cv. Ambon Kuning was prepared using Completely Randomized Design (CRD) consisting of 14 treatments and 4 repetitions. Data was analyzed using variance and further test with *Duncan Multiple Range Test* (DMRT) at 5 % level.

The result of whole questionnaire data showed that knowledge level of farmers in Village of Sidomulyo regarding the management of fusarium wilt disease on banana was categorized into enough, i.e about 56 %. The factors affecting the level of farmer's knowledge are the understandings of fusarium wilt disease, the knowledge about susceptible varieties, healthy seedlings, origin of seedlings, land management, cultivation system, thinning, and disease control. Mean of high disease incidence was found in Plemantung hamlet of 47,54 % and the lowest one was recorded in Ngireng-ireng hamlet about 7 %.

Molecular analysis revealed that all isolates were *Foc* and there were 9 race 4 isolates among 13 tested isolates, such as A80, RP60, PR11, A41, AH40, PKJ40, PR30, RB42, and PR43. DSI analysis expressed that 8 isolates were most virulent and 5 isolates were virulent. The most virulent isolate was PR30 which was recognized as race 4 with disease intensity of 97,73 %.

Key words :management, farmers, banana, Foc, race, and virulence

