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MICROBIOTA PARA O CONTROLE BIOLÓGICO DE *Mitracarpus hirtus*, *Palicourea marcgravii*, *Pereskia aculeata*, *Psidium cattleianum* e *Tradescantia fluminensis*

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RESUMO

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Microbiota para o controle biológico de *Mitracarpus hirtus*, *Palicourea marcgravii*, *Pereskia aculeata*, *Psidium cattleianum* e *Tradescantia fluminensis*. Orientador: Robert Weingart Barreto. Conselheiros: Francisco Alves Ferreira e José Luiz Bezerra.

Efetuarão-se levantamentos da micobiota fitopatogênica associada às seguintes plantas daninhas nativas do Brasil: *Mitracarpus hirtus* (Rubiaceae), *Palicourea marcgravii* (Rubiaceae), *Pereskia aculeata* (Cactaceae), *Psidium cattleianum* (Myrtaceae) e *Tradescantia fluminensis* (Commelinaceae). Tais levantamentos foram conduzidos em todos os estados do sudeste e sul do país, visando a busca por potenciais agentes de controle biológico destas importantes invasoras. A seleção dos locais a serem visitados para coleta foi feita com base nos registros de ocorrência das plantas-alvo nos principais herbários nacionais e nos dados de clima de cada região. Quando possível, as coletas foram feitas nos diversos tipos climáticos onde a planta-alvo ocorria. Trinta espécies fúngicas, associadas às essas quatro plantas-alvo, foram identificadas. Dentre essas as seguintes novidades taxonômicas: um novo gênero, 15 novas espécies e uma nova variedade. Além disto, dentre os demais fungos coletados, 11 representaram novos registros geográficos para o Brasil ou registros de novo hospedeiro para o taxon. Em *M. hirtus*, duas novas espécies fúngicas, *Cercospora mitracarpi-hirti* e *Puccinia mitracarpii*, destacaram-se como possíveis agentes de biocontrole dessa espécie invasora em ambientes exóticos. Somente uma nova espécie de *Pseudocercospora* e uma espécie de ferrugem foram encontradas atacando *P. marcgravii*. Nenhum destes parece ter potencial para utilização no controle biológico. Para *P. aculeata*, a ferrugem *Uromyces pereskiae* e uma nova espécie de *Pseudocercospora*, destacaram-se como potenciais agentes de biocontrole. No entanto, o ciclo de vida de *U. pereskiae* necessita de mais estudos para a sua utilização como agente de controle

biológico clássico. Para *P. cattleianum*, dentre as 9 espécies novas encontradas, as duas Mycosphaerellaceae, *Stenella* sp. e *Mycosphaerella* sp., destacaram-se para o controle biológico dessa planta, reconhecida como responsável por alguns dos piores problemas de invasões biológicas no mundo, particularmente em ilhas oceânicas.

A survey of the pathogens associated with the following eight species native to Brazil was performed: *Passiflora ligularis* (Passifloraceae), *Passiflora ligularis* (Passifloraceae), *Passiflora ligularis* (Passifloraceae), *Passiflora ligularis* (Passifloraceae), *Passiflora ligularis* (Passifloraceae), *Passiflora ligularis* (Passifloraceae), *Passiflora ligularis* (Passifloraceae), and *Passiflora ligularis* (Passifloraceae). This survey was conducted in all states in Brazil and neighboring West and Central Africa. The objective was the discovery of potential biocontrol agents to be used against these weeds. Selection of specimens to be studied was made after a comparison of records of occurrence of the target plants in the main Brazilian states and a study of climographs of Brazil. Based on this information it was then attempted to select sites representing the various kinds of climate where the target plants occur naturally. Thirty target plants were collected in a collaboration with the target plant species. Above each the following information was recorded: name, new genus, if new species and one other variety. Moreover, among the other fungi that were collected it was noted new geographic records for Brazil of six long-persistent mushrooms. Two new fungi were discovered from the *Ustilaginaceae* family and one new species of *Ustilago*. Each one was noted as having potential interest as classical biocontrol agent. Only one fungal species was found attacking *P. cattleianum*, a new species of *Peridermium* and an already known but new species. Some fungi may have biocontrol potential. *Peridermium* and two other fungal pathogens associated with a fern appeared to have potential as biological agents. *Ustilago* species and a new species of *Peridermium*. Nevertheless, further studies are needed to further establish as a potential biocontrol agent, as the other species under

ABSTRACT

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Microbiota for the biological control of invasive Brazilian native plants, *Mitrarpus hirtus*, *Palicourea marcgravii*, *Pereskia aculeata*, *Psidium cattleianum* and *Tradescantia fluminensis*. Adviser: Robert Weingart Barreto. Committee Members: Francisco Alves Ferreira and José Luiz Bezerra.

A survey of the pathogenic mycobiota of the following weed species native to Brazil was performed: *Mitracarpus hirtus* (Rubiaceae), *Palicourea marcgravii* (Rubiaceae), *Pereskia aculeata* (Cactaceae), *Psidium cattleianum* (Myrtaceae) and *Tradescantia fluminensis* (Commelinaceae). This survey was conducted in all states in South and Southeastern Brazil and the principal aim was the discovery of potential biocontrol agents to be used against these weeds. Selection of localities to be visited was made after a compilation of records of occurrences of the target-plants in the main Brazilian herbaria and a study of climatic maps of Brazil. Based on this information it was then attempted to select areas representing the various kinds of climate where the target-plants occur in nature. Thirty fungal species were collected in association with the four target-plant species. Among these the following taxonomic novelties were found: one new genus, 15 new species and one new variety. Moreover, among the other fungi that were collected 11 represented new geographic records for Brazil or new host-pathogen associations. Two new fungal species were found on *M. hirtus*: *Cercospora mitracarpi-hirti* and *Puccinia mitracarpii*. Both are recognized as having potential interest as classical biocontrol agents. Only two fungal species were found attacking *P. marcgravii*: a new species of *Pseudocercospora* and an already known rust species. None seem to have biocontrol potential. *Pereskia aculeata*, had two fungal pathogens associated with it that appeared to have potential as biocontrol agents: *Uromyces pereskiae* and a new species of *Pseudocercospora*. Nevertheless, before *U. pereskiae* is further considered as a potential biocontrol agent, its life-cycle needs further

clarification as only the uredinial and telial stages of this rust seem to be known, contrary to what has been published by other authors. Nine new fungal species were found to have *P. cattleianum* as a host. Among these two members of the Mycosphaerellaceae - *Stenella* sp. and *Mycosphaerella* sp. - appeared to have good potential as biocontrol agents for this very important weed, which causes some of the worst known biological invasions in the world, particularly in oceanic islands.