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Breeding and cultivation of a hybrid of sweet and broom sorghum on marginal lands for the production of solid biofuel

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The main objectives: 1) Breeding and cultivation of a hybrid of sweet and broom sorghum for the production of pellets. 2) hybrid cultivation on marginal lands. First direction is the breeding of sterile hybrids that do not form grains. In this case, sweet sorghum juice and bagasse are obtained from the stem biomass. The dry matter of bagasse consists of cellulose and lignin. Meanwhile, it was found that an sewage sludge introduction in reclaimed minelands in dose to 60 tons/ha leads to a significant growth increasing in sweet sorghum hybrids. But after a certain time, the plants begin to lie down. Second direction: broom sorghum plants with grain-free panicles have better resistance to lodging. Such a crop of dry stems can be mowed even in winter. Unfortunately, high-yielding dry stems of sterile hybrids have not yet been created.

**“EcoMining: Development of Integrated PhD Program
for Sustainable Mining & Environmental Activities”**

