Flavonoids in the Extract and Exudate of the Roots of Leguminous Crops. (C02-isobe204416-Poster)

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Abstract:

The flavonoid content in the root extracts of various crops and root exudates of kidney bean were examined. Flavonoids were not found in the root extract of sorgo, finger millet, radish or cabbage. Coumestrol, daidzein and genistein were found in the root extract of kidney bean and cowpea. Coumestrol and daidzein were found in the root extract of soybean, kidney bean, and cowpea. Formononetin, apigenin, chrysin, flavone, luteolin, myricetin, quercetin and chalcone were not found in the extract of any of the crops. The root exudates of kidney bean contained daidzein and genistein, but not coumestrol. In general, many types of flavonoids affect the spore germination, hyphal growth and colonization of arbuscular mycorrhizal fungi. For example, coumestrol stimulates hyphal growth, and daidzein has been reported to stimulate spore germination and colonization on roots. In contrast, genistein inhibits the spore germination and hyphal growth of Gigaspora margarita. On these grounds it is possible that arbuscular mycorrhizal fungi in rhizosphere of kidney bean was affected by flavonoids of kidney bean root.

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