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Use of the buckwheat plant as a commercial source of the drug rutin is now well established. Earlier work showed that Japanese buckwheat, which is grown extensively for grain, was promising for this purpose. Since then, further study involving additional varieties and species of buckwheat tested on several soil types indicates that *Fagopyrum emarginatum*, *F. tataricum*, and *F. tetra-tataricum* may be superior in some respects to *F. esculentum* var. Japanese as sources of rutin. However, commercial quantities of seed are available for only the Japanese and ordinary Tartary. The latter is commonly referred to as Rye buckwheat, or Duckwheat.

To date, results have been obtained with these varieties on three soil types, and with four fertilizer treatments. Yields of rutin, straw, and leaves by the Tartary and Japanese varieties grown on Dekalb soil at three different stages of maturity are presented in Table 1. Since soil fertility and fertilizers influence yields to a certain extent, the figures presented here are average values from four fertilizer treatments. Similar results obtained on Volusia silt loam are presented in Table 2.

The experiments on Hagerstown silt loam were less complete, but the results were similar to those presented here.

This study revealed that Tartary buckwheat is 45 to 80 percent richer in rutin and produces greater yields per acre than the Japanese. Tartary plants also have a higher proportion of leaves and yield a greater quantity of leaf per acre. This is especially important from the standpoint of producing dried leaf meal of high rutin content by fractional drying, for the greater portion of the rutin in buckwheat plants is in the leaves and blossoms; only a small percentage is in the stems. It had been found previously and confirmed here that the rutin content of the Japanese decreases rapidly after the seeds have formed. Tartary, on the other hand, is more indeterminate in growth habit and continues to grow even after seeds have formed, and so maintains its rutin content at a

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high level for a longer time. This means that the harvest period is not so limited or so critical as for the Japanese. Furthermore, since Tartary is fairly frost-resistant, it can be planted earlier in spring, and its harvest period can be prolonged in fall, giving a more extended growing season than is possible for the Japanese.

In addition to these cultural advantages, Tartary buckwheat is better suited for dehydrating. In drying Japanese buckwheat, temperature and time must be carefully controlled in order to avoid serious loss of rutin. Experiments with Tartary indicate that it can be dried successfully at higher temperatures and with less critical control, so that the drier capacities required are smaller than those needed for Japanese buckwheat[4].

[4] ESKEW, RODERICK K., PHILLIPS, G. W. MACPHERSON, GRIFFIN, EDWARD L., JR., SHAINES, A. AND ACETO, NICHOLAS. PRODUCTION OF RUTIN FROM BUCKWHEAT LEAF MEAL. UNITED STATES DEPARTMENT OF AGRICULTURE AIC-114. REVISION 1. (EASTERN REGIONAL RESEARCH LABORATORY) JUNE 1948. (PROCESSED).

TABLE I

YIELD OF RUTIN, STRAW, AND LEAVES BY TARTARY AND JAPANESE BUCKWHEATS ON DEKALB SOIL

Species	Tartary			Japanese		
Age, days	41	54	66	41	54	66
Moisture, %	88.3	83.9	78.2	87.5	81.1	76.5
Rutin, % (m.f.b.)	5.6	5.0	3.4	3.7	3.1	2.3
Rutin, lbs./acre	56	188	196	51	120	115
Straw, lbs./acre (dry weight)	408	2451	4592	677	3002	4123
Leaves, lbs./acre (dry weight)	600	1301	1182	707	854	879
Leaves, % of whole plant	59.5	34.7	20.5	51.1	22.1	17.6

TABLE 2

YIELD OF RUTIN, STRAW, AND LEAVES BY TARTARY AND JAPANESE BUCKWHEAT ON VOLUSIA SILT LOAM SOIL

Specie	Tartary		Japanese	
Age, days	49	62	49	62
Moisture, %	87.3	80.5	84.3	79.5
Rutin, % (m.f.b.)	5.0	3.4	3.3	1.9
Rutin, lbs./acre	141	231	128	117
Straw, lbs./acre (dry weight)		5264		5236
Leaves, lbs./acre (dry weight)		1523		923
Leaves, % of whole plant		22.4		15.0