Table 4. Nutrient distribution in different fruit tissues of Guiwei and Feizixiao varieties of lychee grown in Guangdong, China.

Nutrient	Fruit shell – Epicarp (outer), %	Fruit shell – Endocarp (inner), %	Fruit flesh, %	Seed, %
		Guiwei		
N	21.4	40.1	28.1	10.4
P	31.5	24.8	31.6	12.1
K	31.0	25.9	33.6	9.5
Ca	4.5	21.3	61.7	12.5
Mg	17.5	28.6	38.0	15.8
S	14.0	27.4	44.6	14.1
Fe	3.9	23.1	43.4	29.6
Mn	6.8	71.0	17.8	4.4
Cu	26.9	20.2	35.3	17.6
Zn	25.8	31.9	28.2	14.1
B	16.2	25.1	42.1	16.6
Mo	64.5	35.5	-	-
		Feizixiao		
N	15.3	21.4	52.8	10.5
P	8.4	5.9	80.3	5.4
K	14.6	10.6	68.3	6.5
Ca	2.6	8.0	76.8	12.7
Mg	14.6	14.6	54.8	16.0
S	9.5	16.5	57.4	16.6
Fe	2.8	5.7	54.8	36.7
Mn	7.2	40.1	44.2	8.5
Cu	23.7	16.0	47.5	12.7
Zn	11.9	18.1	57.9	12.2
B	13.6	24.6	45.3	16.5
Mo	18.2	40.9	0.0	40.9

was lowest in the roots of both cultivars. Calcium was highest in leaves of Guiwei and the trunk of Feizixiao, but only trace amounts of Ca were detected in the fruit flesh of both cultivars. It should be noted that although Ca is commonly regarded as a secondary nutrient for plants, its concentrations in trunk and roots of tree were higher than N concentrations.

Summary

These results build upon known relationships between improved fertilization techniques and stable tree fruit production. Valuable insight was gained into nutrient uptake and storage patterns in lychee, which is vital information to growers as they decide how best to adapt 4R Nutrient Stewardship principles to achieve high quality fruit production.

Acknowledgement

This work was supported through the earmarked fund for Modern Agro-industry Technology Research System and the International Plant Nutrition Institute. BC

Dr. Yao is Professor, College of Natural Resources and Environment, South China Agricultural University, Guangzhou, China. Drs. Li, Yang, Huang, He, and Zhou are with the Soil and Fertilizer Institute, Guangdong Academy of Agricultural Sciences, Key Laboratory of Nutrient Cycle and Farmland Conservation, Guangzhou, China. Dr. Tu is IPNI Deputy Director, Southwest China, and Professor, Soil and Fertilizer Institute, Sichuan Academy of Agricultural Sciences, Chengdu, China; e-mail: stu@ipni.net.

References

Chapman, K.R. 1984. Queensland Dep. Primary Ind., pp. 123.

Gong, X.M., J.F. Guang, J.S. Zhang, H. Ji, Y.X. Feng, L.M. Li, and Y.L. Sun. 2009. Plant Nutrition and Fertilizer Science 15: 942-947.

Huang, X.M., H.C. Wang, W.L. Zhong, W.Q. Yuan, J.M. Lu, and J.G. Li. 2008. Scientia Horticulturae 117: 39-44.

Li, G.L., L.X. Yao, Z.H. He, Y.C. Zhang, X.C Zhou, and S. Tu. 2009. Chinese Journal of Soil Science 40: 800-804.

Lu, R.K. 2000. China Ag. Sci & Tech Press, Beijing.

Jongruaysup, S., B. Dell, and R.W. Bell. 1994. Annals of Botany 73: 161-167.

Mendel, R.R., and F. Bittner. 2006. Biochimica et Biophysica Acta 1763: 621-635.

Menzel, C.M. 1983. Scientia Horticulturae 21: 201-215.

Wojcik, P., and M. Wojcik. 2003. Plant and Soil 256: 413- 421.