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Evaluating nutrient accumulations in carrot seed crop

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Nantes-type hybrid carrot plants at the flowering stage, collected from growers' fields in Madras, OR, for biomass and nutrient concentration analyses. Photo by Amber Moore, Oregon State University.

Plant nutrient uptake in carrots produced for seed is not well understood. Evaluating how and when nutrients accumulate in carrot roots, tops, umbels, and seeds over a growing season can help growers to improve soil fertility practices for this important minor seed crop.

New *Agronomy Journal* research evaluates how agronomic nutrients accumulated in the root, tops, umbel, and seed portion of the plant over the course of a growing season, based on plant biomass and plant tissue nutrient concentration findings collected from two grower fields in central Oregon.

Nutrient uptake was greatest during seed production from May to August with 71 to 85% of total uptake for all nutrients occurring during this stage. Potassium had the greatest potential for return to the next crop with an estimated 170 kg ha^{-1} K_2O remaining in the field as roots and tops following seed harvest. Nutrient index was also greater for P and Zn than all other nutrients evaluated, illustrating the importance of maintaining sufficient levels of soil P and Zn to support carrot seed development.

These findings are a valuable resource for growers, crop advisers, and researchers who are interested in learning more about how seed crops utilize plant nutrients.

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Moore, A.D., Spring, J.F., Jeliazkova, E.A., & Wilson, T.L. (2021). Seasonal nutrient partitioning and uptake in hybrid carrot seed production. Agronomy Journal. **https://doi.org/10.1002/agj2.20503** (in press)

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