

Terminology Break

The genius of peas and alfalfa

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Peas are in the same family as peanuts and soya – the legume or *Fabaceae* family. The father of genetics, botanist Gregor Mendel, studied the lowly pea. Mendel was born to a poor rural family in 1822 in what is now called the Czech Republic. He became a monk which allowed him to study at the University of Vienna and work in the monks' garden. He grew thousands of pea plants with the objective of creating hybrid peas. By studying pea traits and crossbreeding plants, Mendel was able to establish the principles of dominant and recessive genes by predicting the proportion of round to wrinkled peas compared with the parent plants. The pea is not so lowly as peas give back by fixing nitrogen in soil and thereby amending¹ poor soil conditions. Consequently, peas are sometimes grown as a rotation crop to improve nitrogen-poor soil. Corn needs a lot of nitrogen to grow. Moreover, the climate of Quebec and Ontario is ideal for growing peas, which thrive in a cold climate.

Another surprising member of the legume family is alfalfa (lucerne), a flowering plant. A Quebec biopharma company uses alfalfa plants as bioreactors to produce vaccines and therapeutic antibodies. Medicago is named after the Latin name of the plant, *Medicago sativa*. Medicago's flu and COVID-19 vaccines are currently undergoing clinical trials.

For more information: General background: <https://www.britannica.com/biography/Gregor-Mendel>

Wrinkled or round peas: <http://www.mun.ca/biology/scarr/Round & Wrinkled.htm>

Medicago: <https://www.nature.com/articles/d42473-020-00253-2>

¹ Amend is a technical term used in agriculture.