

COTOPAXI, Andean Lupin European breeder success.

B.J. van Dinter, Vandinter Semo BV, vandinter@vandintersemo.nl; tel +31 597 591233

R.J.F. van Haren, Hanze University of Applied Sciences Groningen, r.j.f.van.haren@pl.hanze.nl; tel +31 620182110

Plant Breeders Rights were granted to Vandinter Semo BV on 29th December 2020 for the Andean Lupin variety COTOPAXI. COTOPAXI is result of cooperation between Vandinter Semo, Hanze University of Applied Sciences and the H2020 BBI-JU European research project LIBBIO. Andean Lupin (*Lupinus mutabilis*) has its origin in South America and is one of the four lupin species for human consumption. Andean Lupin is a sustainable alternative for soybean because of its comparable oil and protein content and its contribution to biodiversity and soil improvement. COTOPAXI is the first Andean Lupin variety in Europe that has been granted with Plant Breeder Rights.

Andean lupin oil has excellent fatty acid composition and is therefore suited for food applications like margarines and mayonnaises and also for cosmetic applications, especially hair care products, lipsticks and nourishing anti-aging skin care products. Andean Lupin bean is also rich in proteins, oligosaccharides, alkaloids and bioactive components. Andean lupin proteins can be used as functional food ingredients and as animal feed. Oligosaccharides have functional food applications because of their fermentative (prebiotic) potential in the human large intestine. Alkaloids are of interest because of their medical potential as anti-cancer medicine and as biodegradable natural crop protection agents. Andean lupin bioactives are suited as ingredients in anti-aging cosmetics and in functional foods. Andean lupin contributes to the plant-based protein transition and to EU policy becoming more independent from foreign protein imports.

Rob van Haren, Professor Transition Bioeconomy at Hanze University of Applied Sciences, says: “Andean Lupin is one of the “lost crops of the Incas” like quinoa and chia. Andean lupin grows in the same agro-ecozone as potato and has therefore a great areal potential. Andean lupin oil and protein contents are comparable with soybean and hence its business case has the same potential as well.” Rob van Haren together with other partners initiated in 2015 the H2020 research project LIBBIO for developing the Andean lupin supply chain and its biorefinery processing. This was made possible by an Andean lupin pre-breeding collection established by Kiemkracht, the innovation alliance from Product Board Arable Products and the Innovation Network of the Ministry of Agriculture.

Bert-Jan van Dinter, director Vandinter Semo, says: “We have been active in plant breeding for more than a century, our company started in 1914. Our focus is to breed new varieties for soil improvement and soil health. We also breed for double-target crops for yield and soil improvement. We started our cooperation in 2008 first with Kiemkracht and later with Hanze UAS within the H2020 project LIBBIO. Obtaining Plant Breeder Rights in Europe within 5 years of research is unique. COTOPAXI is the first variety emerging from our new breeding program. In coming years we intend to breed for properties like sweetness (low alkaloids), earliness and crop yield”.

The Andean lupin COTOPAXI contributes to farmer income, sustainable and circular agriculture, profitable processing and biorefinery and sustainable natural products for European consumers.