

Finola Seeds & Greetings! January 2009

Advance thanks for your interest in the availability of EU certified Finola seed for 2009. There is no middle person involved, and the information in this document will put you in direct contact with Dr. Jace Callaway, the breeder, owner, and variety maintainer of the Finola oilseed variety of hemp. If required, ISTA certification for shipping outside of the EU can be arranged at additional cost, and with sufficient advance notice. Taxes and transport are not included in the prices in this document.

Current Status of Finola in the EU

Finola was removed from the EU list of hemp varieties after 2006, ostensibly because some THC results were over the 0.2% subsidy limit. This situation has resulted from the negligence and incompetence of hemp sampling authorities, particularly in Finland and Sweden, and official complaints have been made. You may review the details of this matter in "[Noise from the North](#)"; a short series of e-articles that are free at <http://www.finola.com>. Although there is currently no subsidy for Finola, it is still legal to grow for the production of fiber and grain, and remains listed in both the EU and Finnish Common Catalogues of agricultural crop species. It is unknown at this time if Finola will again be allowed to receive a CAP subsidy 2009, like all other industrial crops in the EU. However, the EU Commission has apparently realized that mistakes might have been made, and in November of 2008 the Commission decided to reconsider any new data on Finola THC. It is NOT illegal to cultivate Finola in the EU, however some countries still require the licensing of all hemp crops. Finola was grown in several EU countries in 2007 and 2008 without problems. With new proposals for changes to hemp regulations, and persistent complaining, there is now some hope that Finola may again receive a subsidy. Any important updates will be posted at <http://www.finola.com>.

Prices and Shipping Information

We offer EU-certified Finola planting seed in bulk (1000 kg sacks, and one 640 kg sack), and also in small sacks (20 kg). That's it! We encourage you to buy in bulk to save on costs for both seed and transportation. All orders, even single 20 kg sacks, will be shipped on standard EU pallets. No orders will be sent through the post. In Finland, individual 20 kg sacks can be shipped by bus. For bulk orders, the price is €8/kg, plus any relevant taxes and transport costs. Additional reductions may apply with larger orders. For 20 kg sacks, the price is €10/kg, plus any relevant taxes and transport costs. If you are not a VAT registered company, 22% will be added to your invoice for the so-called value added tax in the EU

Payment

We must receive full payment before shipping anything, and our prices do not include shipping costs. If you are ordering from outside of the EU, it will be your responsibility to receive this shipment at your nearest port of entry, to clear customs and also organize your own transport to a final destination. You are responsible for insuring the shipment, otherwise shipping will be entirely at your own risk. After making your payment, please inform me by e-mail (callaway@finola.com) or by phone (cell +358 40 725 2534). After your payment has been received, I will personally coordinate the pick up of your order and provide tracking information for delivery. I am on holiday during January of 2009, so my ability to respond may be limited. However, your payment or serious inquiry will get my immediate attention!

Payments are to be made in full to:

Finola ky EU VAT number Y-1706848-2
 Bank account number 560005-20083091
 IBAN FI21 5600 0520 0830 91
 SWIFT OKOYFIHH

Bank name: Kuopion Osuuspankki
 Branch name: Kauppatorin aluekonttori
 Bank Address: PL 47, FIN-70100 KUOPIO, Finland
 Bank Telephone number: + 358 17 198 273

Things you should know about Finola:

Finola, is an oilseed hemp variety, that was developed in Finland in 1995. Finola was initially identified by its breeder's code as FIN-314 in the 1990's. Finola is a short, dioecious, early-maturing oilseed hemp crop. It is harvested by conventional harvesters for its grain and fiber, and produces up to 5-7 tons of stalk with sufficient fertilization. Finola grows best in temperate regions, between latitudes 40, 50 and higher, and especially well in warm continental climates. It will benefit from irrigation in areas that are prone to drought. Finola is the quintessential oilseed hemp variety, with high seed yields (over 2,000 kg/hectare), ease of harvest and unique fatty acid profile of the pressed seed oil. Because of its highly unsaturated seed oil, this healthy gourmet dietary oil is also useful in certain industrial products; for example, as a "drying" oil in the production of specialty inks, films and coatings. This highly unsaturated oil can be added to bio-diesels for the purpose of lowering the diesel solidification point in cold environments. The recovered fiber, hurd (shive) and unprocessed biomass from the Finola crop can be used for non-woven purposes, such as insulation, hempcrete, geo-textiles, geo-remediation, as compost substrate or animal bedding. The average THC level for Finola, when properly sampled and analyzed, is typically below 0.10%, which is well below the 0.20% EU limit.

When should the field sample be taken for THC in the EU? According to the sampling methodology described in Annex I of EU Regulation No 796/2004, this time would be 10 days after the end of flowering. In practical terms, the end of flowering is typically 55 days after sowing Finola, but can be earlier when the crop is under stress, especially under hot and dry conditions.

Finola ky is an incorporated partnership that was formed to maintain and administer the Finola variety of hemp and sell hempseed products, such as hempseed oil. In 1995, Dr. Jace Callaway began to develop Finola in Finland, then secured the Plant Variety Rights in 1999, and has continued to provide stewardship for the Finola oilseed hemp variety in the EU. For more info visit <http://www.finola.com>

Finola® is a registered trademark for food products made from Finola grain, and especially for the promotion and sales of Finola® Oil. It is perfectly within your rights to purchase and grow Finola seed, and produce your own oil and other hempseed food products, but please do not sell or promote them as Finola® without prior agreement. If you would like to use the Finola® trademark to promote and sell

your products, please use the contact information in this document to get in touch with Dr. Callaway and discuss a licensing agreement. We are especially interested in having the Finola® name represented by high quality products.

Can the Finola oilseed hemp variety be used for drug purposes? For sound biological reasons, it is simply not possible to use Finola for drug purposes! This is also true of any hemp variety. Unfortunately, “cannabiphobia” casts a long and fearful shadow on anything related to hemp these days. This irrational fear is based on ignorance, which may be effectively treated with factual information and regular exposure to hemp! Cultivated hemp still suffers the same legal classification as drug cannabis in some parts of the world today, particularly in the USA. In contrast, hemp continues to be a growing business in Canada; the “other” country in North America. Please be sure that you are fully informed about your local laws and customs before importing hempseed, and be aware of potential subsidies or penalties for the cultivation of hemp in your nation. Also, do understand that we have very limited resources to advise on matters of legislation or general agriculture, or even to provide small amounts of personalized advice. Consulting, and even general information, is only available to those who have purchased certified Finola planting seed. Some basic agronomic information on Finola is provided at the end of this document, and more information can be found on the Finola website, at <http://www.finola.com>

Viable Finola seed will not be shipped to the USA (please, continue to vote for smarter politicians over there!). For farmers in Canada, please contact Shaun Crew of Hemp Oil Canada for your Finola planting seed: shaun@hempoilcan.com

Thank you again for your interest in Finola!

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Please use the e-mail address above to inform when payments are made.

Tips on Finola Agronomy for 2009

Plant Economy

The Finola variety of industrial hemp (non-drug *Cannabis sativa*) is a versatile, dioecious, oilseed crop that is grown for both grain and fiber/biomass. The typical 1000 seed weight for Finola is about 11.5g /1000 seeds, and up to 12.5 g/1000 seeds under optimal conditions (i.e.; warm, continental climates with well drained, sandy loam soils that are high in organic matter). Hempseed is a highly valued food product, containing a rich blend of polyunsaturated oils, an easily digested protein, carbohydrates, vitamins and minerals. Hemp fiber is perhaps the strongest of bast plant fibers, which is used in a variety of commercial applications, from rough non-woven insulations to composites for the automotive industry. The unprocessed stalk is over 40% cellulose and about 15% lignan. At its simplest, the fiber and biomass make excellent animal bedding, geotextiles and compost substrates.

Field Selection

For best results, sow Finola in well-drained fertile soils that are rich in organic matter with high nutrient availability. High microbiological activity in the soil will support vigorous growth through mycorrhizal symbiosis. A light to medium textured soil is preferable, with a pH of 6.0 to 7.5. The seedbed should be fine, uniform, moist, warm (+10 C min) and weed free before sowing. Hemp is best preceded by perennial alfalfa / grass breaking, green manure plow downs, legumes, barley, potatoes, and soybeans. Corn, oilseeds, and wheat can be vectors for disease and are not recommended as fore crops. Spice crops, such as cumin or caraway, are also not recommended as fore crops because they can impart unwanted flavors into hemp oil during pressing.

Seeding

Sow Finola shallow (1- 2 cm), but into moist soil after the soil temperature has reached +8 to 10 C, with May 15-25 as an optimum-sowing window. Expect germination in 2 to 4 days and emergence within 4 to 7 days, depending on temperature. An optimal plant density of 100 plants / m² can be achieved for grain production with 25- 30 kg/Ha. More exact seeding rates can be more accurately determined from germination testing results, which are included on the official tags of each seed bag. Hemp seedlings are frost tolerant to about -4 C. A hemp bushel weights 44 lbs.

Fertilizer

Under optimum conditions, Finola will grow vigorously and requires moderate nutrient availability. Conventional NPKS fertilization is recommended for Finola at the same levels required to grow 13.5% wheat or rapeseed. Finola grain and fiber yields are most responsive to N & P fertilization, and optimum yield and returns are often realized at about 70-80 kg of actual N/Ha. Phosphate should be applied at about 70-80 kg of actual P/Ha. Hemp will tolerate some seed-placed N and P (~15-20 kg/Ha). Apply additional K and S where soils are deficient. Finola will grow taller and produce significantly more biomass if the fertilization rate is increased. For environmental reasons this is not recommended, although a Finola crop will do well if the amount of applied nitrogen is increased to 140-150 kg/Ha.

Organic producers are recommended to precede a Finola crop with a perennial alfalfa breaking or green manure plow down, with added urine or manure to increase nutrient availability for rapid growth. Reduce weed pressure with plowing and harrowing. The seed bed must be as fine and even as possible. **Please note!** Good soil, farming experience and proper nutrient levels are essential for successful organic hempseed production. It is best to consider hemp as a two-year crop within an organic production system and use the first year to control weeds and improve soil fertility and the second year for production.

Weed Management

Given a good start, Finola can be an effective weed suppressant. A quick, even emergence is the key to enable Finola to effectively compete by rapidly creating a dense leaf canopy within the first month of growth. However, producers are still recommended to minimize weed pressure by fall and (at least) spring tilling and harrowing, and through the use of perennial forages or green manure plow downs. Problem weeds include buckwheat, wild oats, rapeseed, pigweed, volunteer wheat, coriander and other spice crops.

Disease and Pest Management

Hemp has very few disease and pest problems in most places. The most important disease issue is *Sclerotinia* stem rot, especially under wet conditions. Another disease of note is *Botrytis* (gray mold / head blight), especially under wet conditions. Grasshoppers, gophers, bertha army worm, hemp borer and lygus plant bugs have been known to attack hemp in some places. Note; there are no pesticides registered for use on oilseed hemp in the EU. Pesticides or herbicides should not be used on crops that are consumed by humans or other animals. Birds will be attracted to the mature seed in the late autumn.

THC Test Sampling

Finola is a rapidly maturing variety of hemp, which requires vigilance to recognize the correct sampling. The end of flowering for Finola is typically around 55 days after sowing under ideal conditions, and even shorter under stressful conditions. According to the sampling methodology described in Annex I of EU Regulation No 796/2004, this time would be 10 days after the end of flowering. In practical terms, the end of flowering is typically 55 days after sowing Finola, but that can be earlier when the crop is under stress, and especially under hot and dry conditions, or later if the weather season is unusually wet and cold. In Canada, the correct sampling time is about 75 days after sowing under ideal conditions, and even sooner under hot and dry conditions. Later samples result in slightly higher THC levels.

Harvest

Approximately 135-140 days after sowing, Finola may be combined for grain while it is still “green/ immature”, in order to minimize fiber strength and fiber wrapping during harvest. This should be done when the crop and the weather are as dry as possible, and drying facilities must be nearby and ready to receive the harvested grain. Finola can be swathed at 85% seed head maturity in a warm continental environment, such as France, being cut near to the ground and combined dry at ~10% seed moisture. Preferably, Finola can also be straight combined at about 12 to 15% seed moisture during dry autumn days. Aerate grain immediately off the combine down to about 9% moisture – this is critical to prevent seed heating, reduce mold and to preserve seed quality. Cut or hay-bind the remaining stalk (ranging between 1- 1.5 meters in height) within a few days and bale. Reduce cylinder, rotor and unloading

auger speeds to prevent seed damage while harvesting. Watch for fiber wrapping around shafts, particularly the drive shaft and sprockets of the feeder chain, or front beater, and front drum for the feeder chain. While producers use all types of harvesters, CIH rotaries, JD & NH conventional harvesters with draper headers seem to work best. There are some combine modifications that limit fiber wrapping and speed up harvesting, and modest combine speeds and input rates also help limit potential problems with wrapping. Careful attention is the best advice.

Drying and Cleaning

After slowly drying hempseed down to 9% moisture, immediately after harvest, at LOW temperatures (20-25 C max) and HIGH volumes of air flow, Finola seed and grain can be effectively cleaned with the following sieve sizes; 1.60- 3.25 mm oblong and 2.50- 5.00 mm round.

Storage

Ensure that your harvest hemp grain is slowly and carefully dried at low temperatures (20- 25 C) to about 9% moisture, with proper aeration and turning, to preserve freshness and general seed quality. Ideally, drying should begin in the field, either by swathing in climates that allow for it, or by transferring combined grain directly into a trailer bed that has the ability to dry grain.

Be sure that your moisture meter is pre-calibrated for hempseed!