The invention relates to the field of bioenergy that solves the problems of the utilization of faba bean harvest waste for the production of biofuel because pellets produced from 100 % faba bean harvest waste comply with quality and environmental standards and are suitable for use in biofuels. Faba bean waste is usually dry enough at harvesting time and does not need to be dried for pelleting, which makes the production process cost-effective and environmentally friendly. The removal of faba bean waste from the field, unlike grain straw, does not reduce soil fertility which remains stable. Faba bean biofuel pellets have a greater bulk density than those produced from grass, straw or wood waste, making logistic more convenient and cheaper. In addition, faba bean waste biofuel pellets are resistant to crushing, resulting in less crumbling during transportation and packing. Faba bean waste pellets provide a high-quality and efficient burning process, and the emissions of harmful pollutants (carbon dioxide and monoxide, nitrogen oxides, unburned hydrocarbons and sulphur dioxide) do not exceed the permitted limits, so their use is permissible in low-power (up to 100 kW) boilers. The invention also relates to the field of agriculture that solves the problems of manure and slurry disposition and soil fertility restoration, because faba bean pellets effectively absorb moisture, and by saturating animal faeces and urine, they are excellent organic fertilizers, because the granules themselves contain up to 3 - 4 times more general crop macronutrients (N, P, K, Ca, Mg) compared to straw and sawdust.