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(54) Title (EN): METHOD FOR PRODUCING ORGANIC OR ORGANIC-MINERAL FERTILIZERS IN GRANULE FORM, AND FERTILIZERS OBTAINED BY THIS METHOD

(54) Title (FR): PROCÉDÉ DE FABRICATION D'ENGRAIS ORGANIQUES OU ORGANO-MINÉRAUX SOUS FORME GRANULAIRE, ET ENGRAIS OBTENUS AU MOYEN DE CE PROCÉDÉ

(54) Title (PT): PROCESSO PARA FABRICAÇÃO DE FERTILIZANTES ORGÂNICOS OU ORGANO-MINERAIS NA FORMA GRANULAR E FERTILIZANTES OBTIDOS POR TAL PROCESSO

(57) Abstract:

(EN): The present invention relates to a method for producing organic-mineral fertilizers for agriculture, having a spherical or circular shape, from residues from organic compounds in various kinds of industries, which are first subjected to a separation step in which particles having a diameter of 3 mm or less are separated and conveyed to a mixer, where an agglomerating agent can be added, besides other additives desired, forming a homogeneous mixture with 10 to 40% humidity which is passed through a low-pressure extruder and transformed into pellets which are conveyed while still green to a rotary spheroidiser that operates at a peripheral speed of 5 to 20 m/s, causing an increase in the density of the granules and transforming the pellets into spheres, which may also be surface-coated, and finally dried until their humidity ranges from 5 to 25%, finally producing granules that exhibit a grain rupture charge measured according to the protocol indicated in example 1 ranging from 0.50 to 2.50 kgf, and exhibiting a density gain in relation to the organic compounds of 5 to 40%.

(FR): La présente invention concerne un procédé de fabrication d'engrais organo-minéraux pour l'agriculture de manière sphérique ou circulaire, à partir de résidus de composés organiques de divers types d'industries soumis initialement à une étape de séparation de particules de diamètre inférieur ou égal à 3 mm, lesquelles sont dirigées vers un mélangeur où elles peuvent être soumises à une addition d'agent agglomérant, outre d'autres additifs souhaités, formant un mélange homogène présentant une humidité

comprise entre 10 et 40%, envoyée à une extrudeuse basse pression et transformée en pellets, lesquels, encore bruts, sont dirigés vers un dispositif de sphéroidisation rotatif fonctionnant à une vitesse périphérique de 5 à 20 m/s, ce qui provoque l'augmentation de la densité des granules et transforme les pellets en sphères qui peuvent encore être soumises à un revêtement de surface et, finalement, à un séchage jusqu'à ce que l'humidité atteigne une valeur comprise entre 5 et 25%, donnant ainsi lieu aux granules finaux qui présentent une charge de rupture de grain moyen, selon le protocole indiqué dans l'exemple 1, variant entre 0,50 et 2,50 kgf et présentant un gain de densité par rapport aux composés organiques de 5 à 40%.

(PT): A presente invenção trata de um processo de fabricação de fertilizantes organo-mineral para a agricultura de forma esférica ou circular, partindo-se de resíduos de compostos orgânicos de diversos tipos de indústrias que são submetidos inicialmente a uma etapa de separação de partículas com diâmetro menor ou igual a 3 mm, as quais são direcionadas para um misturador onde podem receber adição de agente aglomerante além de outros aditivos desejados, formando uma mistura homogênea de umidade entre 10 e 40% que é enviada a uma extrusora de baixa pressão e transformada em pellets, os quais, ainda verdes, são direcionados para um esferoidizador rotativo operando a uma velocidade periférica de 5 a 20 m/s, o que provoca o aumento da densidade dos granulados e transforma os pellets em esferas, que podem ainda sofrer recobrimento de superfície, sendo finalmente submetidos à secagem até a umidade atingir a faixa entre 5 e 25 %, originando ao final grânulos que apresentam carga de ruptura do grão medido segundo protocolo indicado no exemplo 1 variando entre 0,50 e 2,50 kgf e apresentando um ganho de densidade em relação aos compostos orgânicos de 5 a 40%.

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