Improving the Technological Process of The Fertilizer from Centrifugal Fertilizer Apparatus and Setting the Parameters

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Abstract

The construction of a new pneumoinertial actuating element for fertilizer and their mixtures, as well as results of laboratory tests are presented in this article. Values of basic design and process parameters are determined. Width of fertilizer is being increased to 13m.

Keywords: pneumoinertial; fertilizers; construction; process.

Nowadays, with the advancement of scientific and technological progress, chemistry and agricultural production leads to the possibility of harvesting and acquisition of land in our country. Science and production practices show that yields can be increased by 40-50% by using mineral fertilizers.[1].

At the same time, the production of mineral fossils has been increased to 3 % in our republic and to 1.9 % over the world. These fertilizers (N, P\textsubscript{2}O\textsubscript{5}, and K\textsubscript{2}O) were given to cortex in cereals, 45-90 kg for 1 and 90-120 kg in the following years. 100-180 kg cottons and sugar beets are feed with fertilizers.

The tams supplied with rotor are given for 20 to 30 kg of potatoes and sugar beets with a grain of 10 to 20 pt. P\textsubscript{2}O\textsubscript{5}. Mineral stacks have been evolved over the next decade, varying in quality and quantity. So producing fertilizers have increased in the other countries at the same time the low concentrations of low-pressure concentrates have been reduced.[1].

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In addition, complex hailstones add nitrogen, phosphorus and potassium to the sediment, and slowly submerge the nutrients and the water from the fertilizer, and to disperse them straight from the phosphoric acid into straight roots and disperse them straight. In 1975, in our country, 15.2% of the country’s agricultural sector received complex floods, and in 1984 it increased by 29.1%.

However, complex fertilizers are not always satisfied with the demand for different nutrients in agricultural crops. For example, a few simple mineral fertilizers (nitrogen, phosphorus, potassium) in the area of a crop, are not solved. Because it is not possible to prepare such complex fertilizers, the components are reacted, and the amount of fertility and nutrients is reduced.[2]. That is why each one is currently being separated separately. As a result, labor costs are rising, and the job of machines efficiency is being declined.

Mixing of simple mineral fertilizers is the solution of the above mentioned problems.

When combined with mineral fertilizers, the reduction of the number of sprinkler agglomerates to 1.8-2.0 times decreases the time and volume of fieldwork by up to 50%, preventing the soil density and structure degradation. It is also possible to incorporate neutralizing elements into the mix during the mixing of simple mineral fertilizers and improve its physical and mechanical properties.

When using mineral fertilizers, the spraying costs are reduced and the agronomic effect of the fertilizer is maintained in the same way as fertilizer.

Preparation of fertilizers before spraying is widely used in world practice, but differs from the properties of the mixture by its components, with some difficulties occurring. To ensure efficient use of mineral fertilizers, they must be hardened. In the preparation of mixtures of mineral fertilizers, it is necessary to select simple fertilizers and approach to their interactions. It is impossible to mix simple fertilizers that can deteriorate their physic-mechanical properties, eliminate them by the loss of nutrients and mechanization. The biggest factor affecting the quality of the mixture is the amount of moisture content in the mixing ingredients. For example, when mixing chlorinated potassium with superphosphate, the mixture becomes moistened from the mixing
device. Therefore, these ingredients should be prepared before scattering. During storage of such a mixture, its physical and mechanical properties may change. After about 12 to 15 days, the compound becomes sticky mass that cannot be expelled. If you do not feed on the feeding ingredients by mixing the sweat, or if you have low physical properties. It does not need mechanical scattering [3].

High-quality mixes can be of poor quality, ranging from aralithic field to pH the reason is that layers of fractions are involved in the loading, assembling, and spin injection processes. Taking into account the appearance of various complex phenomena, it is necessary to take into account the reduction of shrinkage, and flare time of the preparation of fertilizer compounds.

High fertilizer using fertilizer compounds can be achieved by uniform distribution of nutrients throughout the entire area and maintaining the same sort of the mixture.

In order to obtain the yard, the mineral fertilizer must be uniformly distributed on a single field to the surface.

However, due to the granulometric composition of the mineral fertilizers, their grain size and aerodynamic properties, their flat distribution on the surface of the field remains low. The main reason for this is the fact that there is no outbreak of the center of the machine, which provides the flat distribution, regardless of the variety of features. Currently, the production of simple fertilizers and their compounds is carried out by means of linear disks of the center from the center. In addition, the mineralization of mineral fertilizers with different dosage forms and aerodynamic properties is the result of the distribution of children. Agro-technical survey shows that the uneven distribution of mineral fertilizers shows a loss of crop capacity up to 120 kg in the range of 25-30%.

According to the authors, it is necessary to focus primarily on their derivatives because of the fact that it has seen in the course of the air movement and is the main cause of uneven distribution.

Based on agro-technical research indicates that there are fewer mineral fossil fuels than 20% to 30%.

120kg / hectare, potatoes - 135kg / hectare counting of the aerodynamic properties of mineral fused mixtures and the reason for their uneven distribution.

There is no special program or state test method to evaluate the quality of spraying of mineral children.

Therefore, this indicator is used for simple mineral fertilizers.

There is no special program for separating mineral fences, however, at any rate, this kind of mineral fogging and mixing of ten types.

According to S. Nazarov and others, the width of fertilizer should not be less than half of the overall unemployment rate. For example, when the width of the small crystalline chloride potassium is 15-17 m, the width of the working is 5-8 m. For similar reasons, the working width of chloride potassium is 8-9 m, and the distribution uncertainty is high. The uncertainty remains to be how much the uncertainty distribution can be 25%. Therefore, it is necessary to develop another criterion for assessing compounds or simple fertilizers. It should be noted that the width of the working should be taken in the proportion of the components that make up the mixture and their distribution according to their ability to satisfy the agrotechnical requirements in the allowed interval. Nazarov and others are working on it. The distribution of chlorine with low solids in potassium is 8.9m. Approved equation (25%). This can be seen in any aspect of the ingenuity in the human body. For example; the width of crystallized chloride potassium in the human width is generally 6.7m. Overall width 16 ... 18m the minimum possible length of

Tab 1 shows a simple mineral fertilizer diagram

<table>
<thead>
<tr>
<th>Names of fertilizers</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ammonium nitrate</td>
<td>1</td>
<td>●</td>
<td>#</td>
<td>●</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>Urea</td>
<td>2</td>
<td>●</td>
<td>#</td>
<td>●</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>Ammonium sulfate</td>
<td>3</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal superphosphate</td>
<td>4</td>
<td>●</td>
<td>●</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Donadosuperphosphate</td>
<td>5</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Double-squeezed superphosphate</td>
<td>6</td>
<td>#</td>
<td>#</td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ammofos</td>
<td>7</td>
<td>#</td>
<td>#</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Chlorine Potassium</td>
<td>8</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
</tr>
<tr>
<td>40% calolylycine</td>
<td>9</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
<td>#</td>
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<td>#</td>
</tr>
</tbody>
</table>

Tab 1 shows a simple mineral fertilizer diagram
of the yacht can be measured in such a way that it is possible to measure the mineral flooding. There are other criteria for estimating the mineral flooding. It is important to know how to mix a mixture of aggregate surfactants with agro technical components. [4].

We propose the construction of a new working body of machines for the introduction of mineral fertilizers and their mixtures of air-centrifugal type that ensures the qualitative uniformity of their distribution.

[Image: Diagram of a pneumatic centrifugal distributor disk]

Pneumatic centrifugal distributor disk; 2-scapulae; 3-air intake device a-is a top view of the apparatus; b-process technology; g-air intake device. Based on the results of the experiments, the following conclusion can be made: the proposed pneumatic centrifugal working unit distributes evenly the mineral fertilizers and their mixtures, regardless of their granule metric composition size, with a working width of 13m.

References