Production technology Proanalyzyrovanы termomodyfytsyrovannoy timber. Pryvedenы ee Benefits before Standart drevesynoy.

Timber termycheskaya modyfykatsyya, TECHNOLOGY

Analysis the technology of thermal modification of wood are given. Presented its advantages over conventional wood.

Wood, thermal modification, technology

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COMPARATIVE ANALYSIS OF PLANT MATERIALS AND PROPERTIES OF RAPE stems And wheat-wheat straw

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The analysis component composition, structure and properties of plant material from the stems of rape, wheat-rye straw in terms of the prospects for their use in the manufacture of particle board and other materials derevynnokompozytsiynyh.

Derevynnokompozytsiyni materials, particle boards, herbs, chemical composition, structure, wheat-rye straw, stalks turnipsment.

Problem. Today in many countries for the manufacture of particle board and other materials derevynnokompozytsiynyh traditional raw wood was and is. The speed of global deforestation and its impact on the environment forcing manufacturers of these products to search for alternative sources of raw materials. This is typically lihnotselyulozna raw agricultural production, including straw. The average market price of straw is several times smaller than the timber. In the case of this material significantly reduced energy and financial costs to grinding and drying. In addition, it belongs to shvydkovidnovnyh raw materials. In recent years, many countries Cereal straw was the main nederevynnoyu raw material that was used for the manufacture of wood-based panels. Cereal straw find the most suitable agricultural product for the manufacture of wood composites.

One of the main factors that hinder the use of straw as a raw material for the production of wood-based panels, is the presence of wax with a rather complex chemical composition, which in no straw scattered throughout its mass, as is the case in the wood, and is almost entirely on

the surface of the stem. The formation of this layer of adhesive coatings on the surface of straw prevents wetting the surface of particles and impede bonding. However, the appeal of raw straw makes us look for ways that would allow its use in the manufacture derevynnokompozytsiynyh materials. A variety of methods of chemical treatment of the surface of straw. A method of obtaining slabs of plant material treated with ammonia, which before it is processed by steam at a temperature of 140-200 ° C followed by forming and hot pressing. A disadvantage is the complexity of technology and the toxicity of ammonia.

The chemical composition of straw depends on the plant species, climate, harvesting and storage methods. Use wheat straw averaged with the content of basic components of absolutely dry raw material: 46.2% cellulose, lignin 18.6%, 25.2% pentozaniv, 6.6% ash, 5.2% resins, fats and waxes. The chemical composition of straw is compared with the wood slightly lower lignin content and higher content of polysaccharides, hemicellulose, extractives and minerals.

Along with the use of straw, one of the most promising types of plant material for the manufacture of materials is derevynnokompozytsiynyh stems rape. Rape - extremely valuable fodder crop, but it can also be an element of raw materials in the production of these materials. The analysis of recent research on the use of agricultural waste products for the manufacture of pulp and paper production and manufacturing DCM leads to the conclusion that, in addition to wheat and rye straw, appropriate use for this purpose and stems of rape. From rape straw (2-6 tons per hectare) can produce paper pulp and paperboard. On one hectare of rape fields can produce up to 2 tons of paper. These technologies have been successfully applied in the UK, Hungary, Spain and Portugal. With non-wood raw materials in the world produce about 10% cellulose.

Rape - the second in Ukraine on oilseeds acreage and gross production. Cultivation employs more than 3,000 farms. The average yield of winter rape 2008 was 20.8 kg / ha in 2009 to 18.7 kg / ha in 2010 to 17.5 kg / ha. During the 2012 harvest sown winter rape 1033.8000 hectares. Soil and climatic conditions are favorable for Ukraine normal growth and development of rape as winter and spring and meet his biological requirements.

The chemical composition of rapeseed straw is similar to wheat but has a number of features (Table. 1).

1. Component composition of different types of wood and plant material,%.

Material	Cellulose	Lignin	Pentozany	Resins, fats,	Ash

				waxes	
Wheat Straw	44.3	16.5	26.7	5.22	6.65
Rye Straw	45.2	19.3	26.2	5.86	4.63
Straw rape	39.3	18.5	20.2	3.12	10.9
Sawdust	46.1	28.5	10.7	2.93	0.18

It should be noted that rape stems differ from straw different cereals increased thickness and stiffness, which is why have not received applications for traditional agricultural purposes.

At different from the hollow stalks of rye, rape stalks axial channel filled with porous white parenchyma tissue. The shape of the cells in cross section close to the hexagonal cells and transverse dimensions not exceeding buck. Cellular structure of the parenchymal tissue form and size of cells is different from the stem wall that makes it easy to determine the boundaries between these components. In the wall of the stem rape capillaries narrower than the straw diameter not exceeding 50 mm, a margin of 20 microns, which - at least in the peripheral layer of stalks of rye.

Wheat-rye straw characterized by greater uniformity of the length of the stem. The most homogenous materials are raw rye. The volume of the axial channel is most of the volume of the stem, its diameter is almost the same throughout. In rape, depending on the area of the stem (basal, central, tops) volume axial channel is 38,0-54,0% of total stem density parenchymal tissue that fills the axial channel is extremely small. The internal structure of the stem parenchyma characterized turnip extremely high porosity. The composition of the parenchymal tissue pentozaniv rape is 15,3-17,3% respectively. The stems of rape under the general terms of porosity only slightly inferior straw [1].

So Comparative analysis of stem rape and wheat-rye straw and some of their properties allows the following conclusions:

1. Fabric stems canola is denser and firmer structure compared to straw.
2. By type of components and their quantitative composition of canola stalks close to the rye-wheat straw.
3. In other than straw, rape stalks contain a small amount of wax substances.
4. Inside the parenchymal tissue of the stem of rape has very high porosity (a natural foam).
5. The proximity of the composition and properties of rape stalks, wheat straw pshenychno- and supports the use of wood stems as raw material for derevynnokompozytsiynyh materials.

6. High mineral content in the stems of rape will have a positive effect on the adhesion of mineral binders.

7. It is predicted that low wax content of substances in the stems of rape positive impact on the degree of correlation with fine particles of binder, ie increase adhesion.

8. The presence of highly internal parenchyma tissue in the stems of rape allow its use for the manufacture of insulating materials derevynnokompozytsiynyh.

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Proanalyzyrovanы Component composition, properties and stroenye rastitelno raw materials base of the stem to rape, wheat-rzhanoy solomы s point of view perspective s production Using a shaving plates and second drevesnokompozytsyonnыh materials.

Drevesnokompozytsyonnыe materials, struzhechnыe stoves, rastytelnoe raw materials, himicheskij composition, structure, wheat-straw rzhanaya, stems rape.

The chemical composition, structure and properties of plant based raw materials such as stalks of rape, wheat and rye straw have been analysed from the viewpoint of their future use in the manufacture of particle boards and other wood-based composite materials.

Wood-based composite materials, particle board, plant based raw materials, chemical composition, structure, wheat and rye straw, stalks of rape.

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VOLOHOPROVIDNIST of wood along the grain

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Experimental study of factors volohoprovidnosti wood pine, beech and oak along the fibers.
The basic factors that influence the rate of moisture conductivity along the fibers.