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143. Consider rice hulls as a media component. Jarahian, S. Greenhouse Management and Production 30(12):26-29. 2010.

Consider



Hulls as a media component

If you're thinking of switching to a growing mix with parboiled rice hulls, you will have to make production changes.

BY STEVE JARAHIAN

These days, everyone's interested in being "green" or, even better, sustainable. Growing media is no exception. While many growers may just be starting to pay attention to parboiled rice hulls (PBH) as an alternative to perlite, it's not a new topic to most. Since the 1970s, rice hulls in some form or another (composted, aged, etc.) have been used in commercial production or growing media trials as an alternative to peat and peat/perlite mixes.

Rice hulls introduction

Mark Shepherd, eastern marketing manager with Riceland Foods headquartered in Stuttgart, Ark., said that PBH are generally less expensive than perlite (up to 50 cents less per cubic foot depending on freight). The company introduced its PBH product at the 2005 OFA Short Course.

The rice hulls are generated from an average annual 100 million bushels of rice grown by 7,500+ farmers in Arkansas, Louisiana, Missouri and Texas. There are approximately 2.5 million acres of rice grown in this region annually, which generates enough PBH to cover the volume of perlite used in today's horticultural production.

PBH considerations

PBH are consistent in size and shape. The hulls increase air pore space and porosity in growing media. They also have a slightly higher water-holding capacity than perlite in instances where less than 20 percent of the mix consists of the hulls. PBH have no significant nitrogen tie-up, are OMRI approved and are a completely renewable, sustainable product.

One key advantage of PBH is that they have been sterilized and are free of viable weed-seed. Perlite and PBH produce comparable plant growing results and root systems in side-by-side trials up to a 30 percent PBH mix component.

A PBH disadvantage that cannot be overcome is their shape. PBH resemble the shape of a tiny canoe with a long slender pore shape. If a growing mix's other components are poor quality, such as a peat with a lot of fines, these fines can fill the PBH pore space and actually hinder drainage and increase the water holding capacity of a mix.

A growing mix is only as good as its components. PBH cannot work independently of the other mix components. The highest quality PBH are no match



Perlite (left) and parboiled rice hulls produce comparable growing results in side-by-side trials with up to a 30 percent rice hull mix component.



Parboiled rice hulls can cause a growing mix to appear dry on the surface. Some adjustment and adapting of water practices and schedules are often in order when using rice hulls.



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for a mix composed of poor quality peat, bark fines and other materials that are commonly available. Quality raw materials at their earliest stages lay the foundation for growing success.

Using PBH may cause growers to change the way they water their plants. PBH can cause a growing mix to appear

dry on the surface. This perception has tricked many greenhouse workers to water the medium too early. Some adjustments and adapting of water practices and schedules are often in order when using PBH.

Growers considering incorporating PBH as a component in their mix



Parboiled rice hulls are consistent in size and shape. They increase air pore space and porosity in growing media.

or using a PBH-containing mix should closely test and evaluate the quality of the product.

Continued use of perlite

The Perlite Institute, founded in 1949, reports the demand for perlite continues to be high and the supply is plentiful. It has been mined and used in growing mixes for over 60 years. Outside the horticulture industry, perlite is used as a filter aid in water and pharmaceutical purification and other government approved uses.

Perlite is sterile, lightweight and safe to handle. As a growing media component, perlite has a neutral pH, does not deteriorate and improves a mix's porosity and water-holding capacity. It helps to provide moisture and nutrients to the plant roots.

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Growers considering incorporating par-boiled rice hulls as a component in their growing mix or using a rice-hull-containing mix should closely test and evaluate the quality of the product.

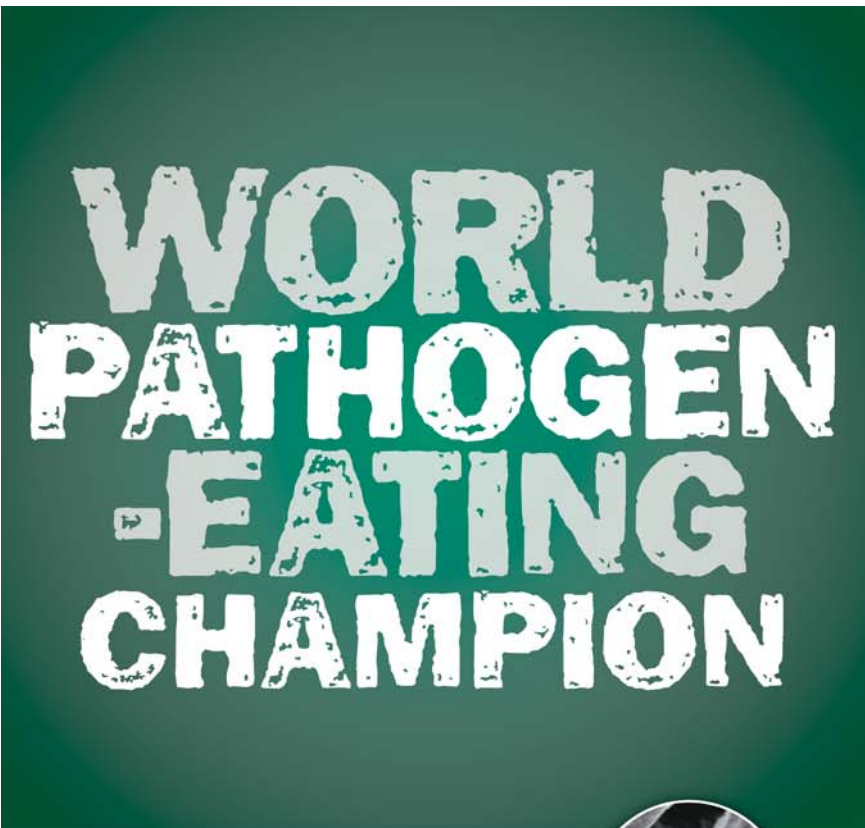
Processing rice hulls

Rice fields are usually harvested from late July to mid-August. Parboiling is the process where rice is cooked before hulls are removed. The rice is first washed, the affluent is drained off and the rice is steamed under pressure at around 220°F. The whole grain rice is then dried at 500°F or more to a moisture level of about 8 percent.

The hulls are then "milled" or removed from the rice grain. The parboiled rice goes to the mill for additional processing and the hulls are piped to another department where they are baled, bagged and shipped to customers.

At Riceland Foods the hulls are put to good use. Some are sold to juice processors and wine makers who use the hulls as a filter aid to remove pulp from liquids. Riceland also uses the hulls as a fuel source and burns them at its facilities. The ash is removed from the burners and sold to the steel industry as an insulation material. Basically, no usable hulls are wasted.

For more: Riceland Foods Inc., (870) 673-5500; www.riceland.com.



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ON THE COVER

Ty Strode, Agri-Starts director of marketing, expects container-grown edibles to become a major part of the company's tissue culture production. See page 10.

Photo by David Kuack

COVER STORY

10 Incredible edibles

Agri-Starts is known for propagating foliage, but the 26-year-old company found that edible plants provide an avenue for increased profits. Agri-Starts is supplying plugs for containerized edibles sold in garden centers.



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