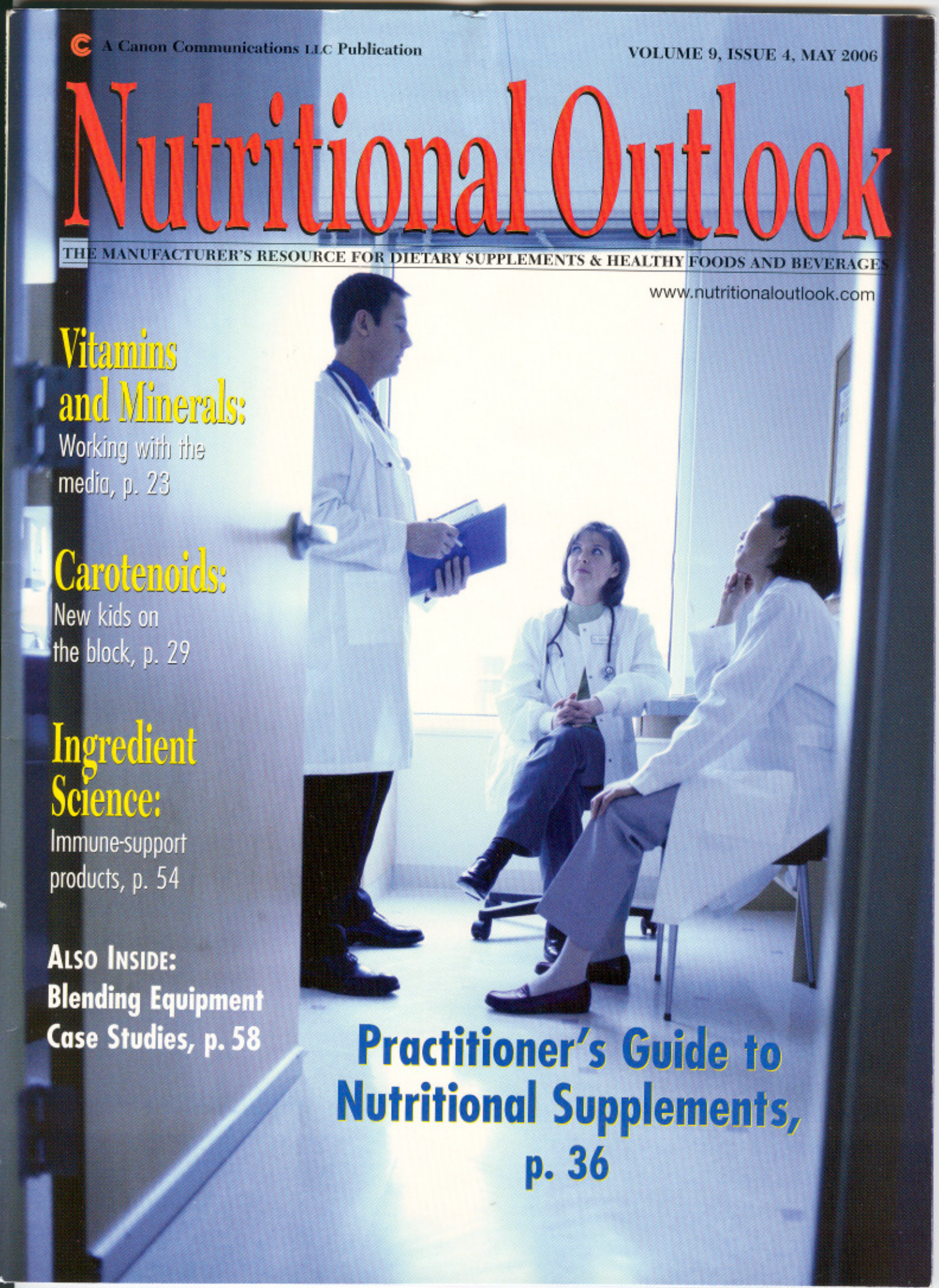
A Canon Communications LLC Publication

VOLUME 9, ISSUE 4, MAY 2006

Nutritional Outlook

THE MANUFACTURER'S RESOURCE FOR DIETARY SUPPLEMENTS & HEALTHY FOODS AND BEVERAGES

www.nutritionaloutlook.com



Vitamins and Minerals:
Working with the media, p. 23

Carotenoids:
New kids on the block, p. 29

Ingredient Science:
Immune-support products, p. 54

Also Inside:
Blending Equipment Case Studies, p. 58

Practitioner's Guide to Nutritional Supplements, p. 36

Rapid Blending in a Restricted Area

For one Miami manufacturer, choosing the right mixer was a matter of balancing space and capacity.

Private-label manufacturer Nutri-Force Nutrition (Miami) recently had to make some choices that many companies would envy. Striving to meet demand for production needs that have doubled in each of the four years it has been in operation, the company found it necessary to upgrade its manufacturing facilities, purchasing a new warehouse and additional processing equipment such as a tablet press, encapsulation machine, packaging line, and blender.

The choice of which blender to acquire was of particular importance. The company wanted a high-capacity mixing system to minimize the cost per volume of material processed. "Each production run incurs time for loading, blending, unloading, quality assurance testing, and cleaning, so the higher the capacity of the blender, the lower the labor cost and downtime as a percentage of output," says Anthony Alfonso, Nutri-Force's president and owner.

But Nutri-Force also wanted to conserve space and minimize the size of the facility's overall expansion. After considering several different types of blenders, Nutri-Force selected a compact, 40-cu-ft-capacity rotary batch blender from Munson Machinery (Utica, NY). "I've worked with all types of blenders—slant-cone, double-cone, vee, and ribbon," says Gilberto Diaz, director of operations at Nutri-Force. "For the space we have and the output we require, the rotary blender is the optimum choice."

A Munson rotary mixer operated by Nutri-Force Nutrition creates uniform blends in 3 minutes, about 10 times faster than other mixers.

Photo courtesy of Nutri-Force Nutrition.

A COMBINATION OF REQUIREMENTS

The new blender, which fits into a 6-ft-tall by 6-ft-wide by 10-ft-long space, uses a 5-ft-high intake chute, which greatly reduces the overall size needed to mix ingredients. Diaz notes that other blending systems, like multiaxial mixers, could require a two-story space for top feeding of raw ingredients.

The blender consists of a horizontal rotating drum equipped with a stationary inlet and a stationary outlet on either side. Two oversized trunion rings support the mixing vessel, which blends ingredients with mixing flights and vanes that tumble raw materials toward the outlet and discharge gate. The multidirectional mixing action is intended to create a fluidized zone, producing uniform mixing without degrading particle shape, according to Munson.

Because it holds a Food and Drug Administration (Rockville, MD) license, Nutri-Force cleans and sanitizes its equipment between different product runs. The company cleans the new rotary mixer by rotating it for 5–7 minutes after adding hot water and pharmaceutical-grade cleaning solution. Personnel then drain and rinse the drum, add a solution of alcohol and water, and agitate the system again for another 5–10 minutes. After air-drying or drying the blender with hot air, total cleaning time is about an hour. Constructed of #304 stainless steel with a food-grade finish, the new blender is fully enclosed, reducing the possibility of cross-contamination.

The mixer completely evacuates material from the mixing drum between runs, expediting the sanitizing process for Nutri-Force, an FDA-licensed facility.

Photo courtesy of Nutri-Force Nutrition.

"The rotary blender has proven easy to clean," says microbiologist Miguel Tang, PhD, who validated the cleaning procedures. "Independent laboratory testing has demonstrated good results, with no residue of products or detergents left in the blender after cleaning."

Perhaps the most important requirement for Nutri-Force, however, was speed. The company's older multiaxial batch blender had to be stopped during loading and unloading, requiring 30–45 minutes of blending time per 441-lb batch. The new blender, on the other hand, can begin mixing while the ingredients are still being added, greatly increasing efficiency.

"The rotary blender achieves 100% batch uniformity in approximately three minutes—ten times faster than other mixers we considered," says Diaz, who notes that typical production runs involving 11,023–15,432 lb of a single product or 4409–6614 lb of several different products can be completed in an 8-hour shift. "The only time the rotary blender stops is for cleaning during a product changeover." ❖