

It's Showtime for Biotechnology

The craze for biotech industries has swept the world, including Taiwan. Enterprises all strive to be the first to invest in biotech companies and expect to find another new star in the field.

The cosmetics and health food market size in Taiwan has reached more than NT\$90 billion. However, raw materials containing natural herbs previously relied on imports. In 2001, MIRDC introduced the green process supercritical fluid equipment technology from Austria. After more than ten years of efforts, MIRDC has become the leader in high pressure & high temperature equipment and supercritical fluid extraction technology, which enables manufacturers to extract effective ingredients from native natural materials or the waste from agriculture, forestry, fishery and animal husbandry. In this way, the goals of reducing costs and exploring local natural resources can be realized effectively.

In 2011, MIRDC stationed in the "Chiayi Innovation & Research Park" and started to build a pilot plant for the pre-processing, extraction, fractional distillation, purification, micro powder and capsule dosage of raw materials. The plant not only provides a trial production technology service platform for developing new products, but also shares R&D and equipment investment risks with manufacturers.

In the last two years, MIRDC has formed three major research communities, namely "Chinese herbal medicine," "essential oil" and "microcapsule," for developing industrial innovative applications

and high-value products. As for the innovative applications of essential oils, MIRDC has assisted Sentai Pharmaceutical Industrial Co. in developing *Lonicera Japonica* skin care products, KPC Herbs in developing a ginger essential oil dietary supplement, Feng Ho Mei Biotechnology Co. in developing *Michelia* aromatherapy essential oil, Flushing Biotech in developing rice bran oil cosmetics and dietary supplements. In addition, MIRDC also assisted Hua Shih, a raw material provider of cosmetics, in establishing the mass production supercritical CO₂ extraction model for its tourism factory. It is expected to create an annual production value of at least NT\$0.1 billion, which is ten times Hua Shih's current production value.

As for the innovative applications of Chinese herbal medicine and microcapsules, MIRDC assisted manufacturers in developing dietary supplements, Chinese herbal medicine cosmetics and new, convenient dosage forms without decoction, through supercritical CO₂ extraction, fractional distillation and purification technology, seamless capsule technology, and Chinese medicine dropping pills production technology. MIRDC currently plans a Chinese herbal medicine plant park and expects to combine the inspection and analysis capabilities of pesticide and heavy metal for strict control of Chinese herbal medicine quality.