Weed control is one of the farmer’s biggest challenges in crop production. It is estimated that crop yield losses due to weeds are 900 mt approximately in China. Farmers hope to use broad spectrum herbicides, which kill nearly all kinds of weeds to maintain higher yield of crops, but it is impossible until the development of glyphosate-resistant crops. Glyphosate is a broad-spectrum, non-selective herbicide for post-emergence control of annual and perennial weeds and its traditional use has been limited in non-crop and orchard. The glyphosate-resistant crop system provides growers a new way to use it.

By fast rate of adoption, GR soybean occupied 47% of the global area of biotech crops in 2011 and was grown in 11 countries with the top three countries, the USA, Argentina and Brazil. Although no GR soybean was commercialized in China, Chinese farmers showed a strong enthusiasm in growing GR soybean. In this paper, the necessity of growing glyphosate-resistant soybean in China was discussed based on China’s actual conditions of soybean production and herbicide application. 1. Glyphosate is needed to replace pre-emergence herbicides such as acetochlor, a widely used soil applied herbicide in soybean field in China, which provides poorly weed control because of the dry soil condition in planting time of soybean. 2. Glyphosate is useful to replace herbicides such as imazethapyr, clomazone, chlorimuron-ethyl, which bring frequent crop injuries in northeast China. 3. GR soybean is effective to overcome succession of weed population by continually use of a same herbicide which bring more perennial weeds and resistant weeds in China. 4. GR soybean meets the change of tillage from traditional to conventional which needs burn down herbicides. 5. GR soybean meets the situation of shortage in labour in China, because more farmers move to large cities and small farms merge into large farm.

Keywords: necessity, glyphosate-resistant, soybean, China