Plates

Plate 1 In mountain areas, agriculture often suffers from low temperatures, drought, too much rainfall, short frost-free periods, and soil erosion. PFT can help overcome these constraints.

Plate 2 Through 15 years of efforts, farmers have accepted PFT as an important agronomic measure that increases production. Officers and scientists have recognised that PFT can accelerate the merging of traditional agriculture with modern agriculture.

Plate 3 Maize is a worldwide staple grain. Chinese farmers' experiences show that maize yields can be increased by 30-50 per cent, sometimes even doubled, by proper use of PFT.

Plate 4 Cultivating good rice seedlings is a key measure in and the basis of high yields in rice production. PF can guarantee early sowing, early transplantation, early maturation, and high yields.

Plate 5 The use of PF in wheat cultivation can greatly increase yield; the average increased yield per hectare was 255 to 3,120kg and the increased rate was from five to 53.5 per cent. An evident difference between cultivation with PF and without PF can be seen in this photo.

Plate 6 When a cotton field is covered with PF, a stable and suitable environment is created, changing the ecological characteristics of cotton and promoting increases in yield. For example, in the PF-covered cotton field, without irrigation the increase rate was from 225 to 375kg per hectare and, with irrigation, the increase rate was from 300 to 450kg per hectare.

Plate 7 Vegetables receive more benefit from PFT. Since PFT can promote early maturation (by 8 to 10 days) farmers' incomes are increased.

Plate 8 Plastic Film combined with small canopies gives more benefits, especially in areas where spring air temperatures are low. This combination increases temperatures, both in soil and air, so that the yields of vegetables will be greatly increased.

Plate 9 Due to the light reflected by PF, crops receive more light enabling close plantation. In the case of cucumber, PF plus bamboo-supporting frames can enable an increase in the plant numbers per unit area and increases yields.

Plate 10 Using PF, the yield of kidney beans increases by 20 per cent and the income by more than 50 per cent, because PF greatly increases the active accumulated temperature (above 15°C) of the soil and promotes accelerated emergence (ten days early). The beans can be harvested six days in advance. As a result, the first three batches of kidney beans yield 2.18 times more than comparative yields on open land.

Plate 11 Cultivating peanuts by using PF, some farmers in northern China achieved a world record in the yield per unit area (more than 7,500kg per hectare). PF not only increases the yield, but also improves the quality of peanuts. For example, the ratio of oleic acid and linoleic acid increased from 1.49 to 1.69; the 8 amino acids needed by human beings increased by 27.9 per cent and 17 amino acids, including glutamic acid, increased by 24.5 per cent.

Plate 12 Watermelon cultivation suffers from three constraints: drought in spring; too much rainfall in summer; and inadequacy of accumulated temperature at high altitudes. PFT is one option that can help to overcome these problems. Now watermelon cultivation has been moving to the northern and high altitude areas and almost all the watermelon cultivation areas in China have adopted PFT.

Plate 13 Since most citrus orchards are distributed throughout the subtropical hills, frequent and heavy showers cause serious soil erosion. When terraced citrus orchards are covered with PF, raindrops cannot directly scour the soil, so the nutrients are maintained in the soil.

Plate 14 In apple orchards, PF not only maintains soil moisture and enhances soil temperature, promoting increased yields of apples, but also protects the fruit. Apples suffer from peach fruit borers. It was found that PF can increase the intensity of reflex light near the ground under the crown of the tree and the reflex light can greatly improve the colour of the fruit skin as well as the quality of fruit.

Plate 15 Sunburn and pecking by birds are common types of damage when grapefruit is maturing. Plastic film is used to overcome these problems.

Plate 16 Ginseng is a precious medicinal plant which is very sensitive to sunlight and moisture. Shading and covering with PF can provide favourable conditions for ginseng cultivation. Experiments have shown that PF can increase the yield by 16.1 per cent. The use of PF upgraded ginseng roots and the value of output increased by 18 per cent.

Plate 17 Horticulture is the most promising farming activity for cash income in mountain areas. Hailstones are frequent hazards in mountain areas. It has been proven that a plastic network can effectively protect apples from damage by hailstones.

Plate 18 PF can be spread by machine. A PF-spreading machine, drawn by a four-wheeled tractor, can increase efficiency by 15-25 times compared to manpower. Some complex machines can prepare the land, spread plastic film, sow seeds, apply fertiliser, and spray weedkillers. This greatly increases working efficiency.