### Profitability Assessment for Irish Potato Production in Jamaica

#### Good Agricultural Practices

**Climate, Soil and Site Selection**

- Temperature 16-27°C (average 20°C)
- Ph 5-7
- High in organic matter
- Area exposed to light
- Solanaceae family crops (e.g., tomatoes, peppers, Irish potato) not planted in last 3 years OR rotation with non-Solanaceae crops

**Crop Establishment**

- Seed potato free of diseases
- Seed weight 60-90 g (2-3 oz.)
- Pre-sprouting 3-4 sprouts at 1.25 cm (1/2 in) tall
- Furrows 75-90 cm (30-36 in) center to center
- Seeds planted along furrows at 30 cm (12 in) spacing (34,500-42,000 plants/ha (14,000-17,000 plants/acre)) and covered with 5-7 cm soil (2-3 in) OR covered with 50% of soil from adjoining furrows
- Moulded 2-3 weeks after plant emerged
- Rainfall averaging 25-50 cm (1-2 in) per week OR 37,000-56,000 l/day/ha (4,000-6,000 g/day/acre)

**Land Preparation**

- Ploughing at least 30 cm deep
- Organic matter added to soil
- Harrowing
- Furrowing about 1.5 ft apart

**Fertigation**

- Nitrogen - 235 kg/ha (apply 30% to furrows and covered before planting, 40% 4-6 weeks after planting
- Phosphorus - 25 kg/ha (place 5-7 cm (2-3 in) below seed potato)
- Calcium - 5-10 kg/ha (as foliar spray)
- Magnesium - 5-10 kg/ha (as foliar spray)
- Elements - Boron - 1-2 ppm, Iron - 20-40 ppm, Manganese - 30-60 ppm, Copper - 6-20 ppm, Zinc - 15-40 ppm

**Foliar application of some elements based on soil test results**

#### Poor Agricultural Practices

**Climate**

- Temperature below 16-27°C (average 20°C)
- Temperature above 16-27°C (average 20°C)

**Soil**

- Ph above 5-7
- Ph below 5-7
- Low in organic matter

**Site Selection**

- Shaded area
- Solanaceae family crops (e.g., tomatoes, peppers, Irish potato) planted in last 3 years OR no rotation with non-Solanaceae crops

**Land Preparation**

- Ploughing less than 30 cm deep
- Low organic matter in soil
- No harrowing
- Furrowing less than 1.5 ft apart

**Crop Establishment**

- Seed weight more than 60-90 g (2-3 oz.)
- Seed weight less than 60-90 g (2-3 oz.)
- Not pre-sprouted before planting
- Furrows more than 75-90 cm (30-36 in) center to center
- Furrows less than 75-90 cm (30-36 in) center to center
- Seeds planted more than 30 cm (12 in) spacing
- Seeds planted less than 30 cm (12 in) spacing
- Not moulded 2-3 weeks after planting emerged

**Crop Nutrition**

- Insufficient Nitrogen
- Insufficient Phosphorus
- Insufficient Calcium
- Insufficient Magnesium
- Insufficient trace Elements

**Foliar application of some elements based on soil test results**

**Harvesting and Post Harvest**

- Harvesting 90-100 days after planting
- Maleic hydrazide applied 2-3 weeks before harvesting
- Foliage completely dried (by applying foliage desiccants 2 weeks before) or removed before harvesting
- Potatoes remain in soil for hardening and healing of wounds 2 weeks after removal of haulms
- Potatoes carefully harvested in cool of the day and placed in crates to prevent bruising and cuts
- Potatoes cleaned, graded and sorted
- Potatoes stored at 90% humidity and 20-25°C for 2-3 weeks for hardening
- Long term storage at 7-10°C, humidity 90-95% in ventilated crates for up to 2 months
- Long term storage at 7-10°C, humidity 90-95% in ventilated crates for over 3 months

**Transported in cool conditions, dry and moved to market as soon as possible**

**Potential Yield (All GAP applied)**

- Potential Profitability (JAS) (after deducting cost of production)** Loss (JA $)

**Potential Profitability (minus cost of production—$)**

- $17,500-20,000 kg/ha (14,000-17,000 lb/acre)